ASSURING ENVIRONMENTAL COMPLIANCE

A toolkit for building better environmental inspectorates in Eastern Europe, Caucasus, and Central Asia

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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ОБЕСПЕЧЕНИЕ СОБЛЮДЕНИЯ НОРМАТИВНО-ПРАВОВЫХ ТРЕБОВАНИЙ
В СФЕРЕ ОХРАНЫ ОКРУЖАЮЩЕЙ СРЕДЫ

Практическое пособие по совершенствованию государственного экологического контроля в странах Восточной Европы, Кавказа и Центральной Азии

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FOREWORD

Many countries are working to achieve their environmental objectives by systematically assuring compliance with environmental laws and regulations. In the transition economies of Eastern Europe, Caucasus, and Central Asia (EECCA), this challenge comes at the point when concerted actions are also required to advance the rule of law and the credibility of governments.

In this context, environmental enforcement authorities (inspectorates) need to increase their effectiveness and efficiency, be more transparent, and follow good governance principles in their work at the interface between the government, the regulated community, and the civil society. In creating systems of compliance assurance and enforcement programmes, environmental inspectorates must carefully select the compliance objectives, their instruments, and tactics.

This publication builds on the "Guiding Principles for Reform of Environmental Enforcement Authorities in Transition Economies of Eastern Europe, Caucasus and Central Asia", which were endorsed by European environment ministers at their last conference in Kiev in May 2003. While the Guiding Principles present a concise reference model to direct the long-term improvement of environmental compliance assurance systems, this Toolkit brings together a range of methodological and organisational approaches to support improvements and help build the capacity of environmental inspectorates in the EECCA region.

The publication of the Toolkit is one of the environmental activities undertaken within the programme of work of the OECD's Centre for Co-operation with Non-Members. These activities are carried out within the OECD's Environment Directorate, under the umbrella of the Task Force for the Implementation of Environmental Action Programme for Central and Eastern Europe (EAP Task Force), for which the Environment Directorate serves as Secretariat. Financial support to develop and publish this volume was provided by the Netherlands.

The views expressed in this publication are those of authors and do not necessarily reflect those of the OECD or its Member countries. The Toolkit is published under the responsibility of the Secretary-General of the OECD.

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ACRONYMS

BAT	Best Available Technique
BERCEN	Balkan Environmental Regulatory Compliance and Enforcement Network
BREF	BAT reference document
EECCA	Eastern Europe, Caucasus and Central Asia
EIA	Environmental Impact Assessment
ELV	Emission (Effluent) Limit Value
EMS	Environmental Management System
IMPEL	EU Network for the Implementation and Enforcement of Environmental Law
INECE	International Network for Environmental Compliance and Enforcement
EPA	Environment Protection Agency
EU	European Union
IPPC	Integrated Pollution Prevention and Control
ISO	International Standards Organisation
NGO	Non-governmental Organization
OECD	Organisation for Economic Cooperation and Development
PRTR	Pollution Release and Transfer Registry
RIA	Regulatory Impact Analysis
T11	Table of Eleven
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
USEPA	United States Environment Protection Agency
VOC	Volatile Organic Compounds
VROM	Netherlands Ministry of Housing, Spatial Planning and the Environment
WHO	World Health Organization

INTRODUCTION

Purpose of the Toolkit

The Toolkit presents good international practice in the field of management and operations of environmental inspectorates in order to:

- Stimulate the adjustment of inspection criteria and procedures currently applied in the EECCA;
- Help decision-making on the allocation of human and financial resources;
- Increase staff professionalism and integrity;
- Establish a more effective dialogue with the regulated community and the general public;
- Encourage in-country and international co-operation.

The Toolkit is designed to serve as a basis for developing and updating national inspection manuals, as the majority of described strategies and tools may be directly applicable, no matter what legal system exists in individual countries. The Toolkit is addressed to the employees of environmental inspectorates in the EECCA region – from senior managers to field inspectors, at national and sub-national levels.

Toolkit content

The Toolkit does not intend to re-invent the world of environmental compliance assurance, but rather brings together and **presents in a systematic manner priority issues and key tools** that are already in use in the OECD countries and, partly, in the EECCA region. It is organised in four parts:

- **Part One** introduces general aspects of compliance assurance from the perspective of policy and regulatory development, and human behaviour. These topics provide background information that supports the sections on management and inspection.
- **Part Two** focuses on issues that are of direct relevance for managers of environmental inspectorates. It is constructed around the concept of strategic management. Insights are provided into its elements, such as: problem analysis; strategy formulation; strategy implementation; and management of personnel, financial, and material resources. This part will help ensure that inspectorates define and maintain a positive rapport with their staff and stakeholders, and that the organisation's strengths and weaknesses are matched, respectively, with the opportunities and threats of the overall socio-economic conditions.
- **Part Three** analyses key tasks carried out by inspectors, such as profiling the regulated community, promoting compliance through communication, choosing the right type of inspection approaches, developing inspection programmes, promoting self-monitoring systems, and providing non-compliance responses. The basics of performance evaluation are also presented.

- **Part Four** describes the organisation of on-site visits, from the planning of an inspection to the reporting phase, and post-inspection activities. Besides introducing the essential technical aspects of inspection, it touches upon rules of conduct while on-site. This part also gives guidance on how effective interviewing and negotiations can be conducted, and how to solve conflicts. Finally, some fundamental rules of sampling are presented.

The Toolkit provides an abundance of information, but does not aim to address all topics related to environmental compliance assurance. The Toolkit, however, is intended to serve a means for inspectorate managers and inspectors to achieve high standards in their work. Throughout the Toolkit, case studies, examples of internal guidelines, and checklists are presented.

Complementary materials

Several other products have been developed as part of the EAP Task Force activities to support the institutional strengthening of environmental inspectorates, including:

- English-Russian glossary of terms used in environmental enforcement and compliance promotion (2002);
- Review of compliance assurance practices in the EECCA countries (2000 and 2003);
- Review of permitting systems in the EECCA region (2003).

Toolkit development

The Toolkit was compiled by Mr. Rob Bakx from the Netherlands, based on information available from inspectorates around the world, in particular through the products of the European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) and the International Network for Environmental Compliance and Enforcement (INECE). The Inspection Working Group, which was established in the framework of the Regulatory Environmental Programme Implementation Network of the EAP Task Force in 2001, provided guidance and support to the leading expert. The members of the Working Group defined the scope of the Toolkit, identified information needs, and commented on the drafts of this document.

The Working Group consisted of the following officials and experts:

- **Armenia**: Ms. Rosa JULAKYAN, Head of Office of Analyses and Registration, Republican Environmental State Inspection, Ministry of Nature Protection;
- **Belarus**: Ms. Elena LAEVSKAYA, Chairperson, NGO “Ecopravo”;
- **Georgia**: Ms. Ellen IAKOBIDZE, Head of Division, Department of Environmental Management and Supervision Activities, Ministry of Environment;
- **Kazakhstan**: Mr. Birzhan ISSIN, Head of Division, Department of Main State Inspection, Ministry of Natural Resources and Environmental Protection;
- **Russian Federation**: Ms. Svetlana IVANOVA, Head of Coordination, Methodological and Information Support Division, Natural Resources Department of Northwest Russia, Ministry of Natural Resources;
- **Russian Federation**: Mr. Victor VLASOV, Moscow City Chief Inspector, Deputy Head of the Department for Nature Use and Environmental Protection, Moscow City Government;

- **Ukraine**: Mr. Sergiy SHUMEIKO, Chief, Methodological Support Division, State Environmental Inspectorate;
- **Uzbekistan**: Mr. Ivan KULBATSKIY, First Deputy Chairman, Tashkent Region Committee for Nature Protection.

Staff of environmental inspectorates from Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan and Tajikistan discussed the advanced drafts of the Toolkit during a series of workshops conducted in 2003, and provided comments and questions that helped finalise this publication. The Toolkit was also reviewed by several experts from OECD countries and the EECCA region. In particular, valuable inputs were provided by Mr. Richard Emory and Mr. Jones Davis of the United States Environmental Protection Agency (USEPA), Mr. Aare Sirendi and Mr. Toomas Liidja from the Estonian Environmental Inspectorate, Ms. Marina Yanush from the Ministry of Environment of Belarus, and Mr. Vladimir Schwartz from the Ministry of Natural Resources of the Russian Federation.

At the OECD/EAP Task Force Secretariat, the project was managed by Ms. Angela Bularga and Mr. Krzysztof Michalak. In 2002, the Secretariat was supported by Mr. Valeriu Mosanu, Regional Coordinator of the Network who was employed by the Moldovan State Environmental Inspectorate under an institutional development grant from the World Bank.

The EAP Task Force Secretariat expresses its gratitude to all those who participated in the development of this product, whether or not they are mentioned by name. Work carried out in the framework of partner networks, such as IMPEL and INECE, were important reference for the Toolkit, as was an earlier OECD monograph on compliance assurance systems (1986) and the USEPA Principles of Environmental Enforcement (1992).

PART 1
LAYING THE FOUNDATIONS OF AN ENVIRONMENTAL INSPECTORATE

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THE ROLE OF ENVIRONMENTAL COMPLIANCE ASSURANCE

1.1.1 Goals of compliance assurance: "Trust and check"

The implementation of environmental policies requires a strict and concerted action guided by the principle "trust and check" to ensure effective and efficient protection of human health and the environment. To this end, compliance assurance systems, including elements of prevention and cure, are established to influence positively the behaviour of the regulated community and make its members comply with environmental requirements. Voluntary compliance and reversal of an offence can be considered the main goal of inspection and enforcement. Punishment of the offender should be a secondary purpose.

COMPLIANCE ASSURANCE IS ESSENTIAL TO:

- Achieve environmental results by ensuring compliance with regulatory requirements;
- Confirm socially desirable behaviour;
- Remove opportunities for non-compliance and create deterrence;
- Reverse an offence and/or punish the offender;
- Provide equitable treatment to the regulated community;
- Ensure credibility of laws and government institutions;
- Realise long-term economic advantages.

An important goal of compliance assurance is to provide a basis for public confidence about *e.g.* the safety of hazardous installations and the preservation of natural values. Furthermore, in the framework of environmental policy implementation, compliance assurance systems support the fulfilment of objectives laid down in legal acts and planning documents by enforcing the rule of law and also by providing proper feedback that helps improve environmental policy and law.

The principle of deterrence underlies the compliance assurance systems. Inspections and other forms of compliance monitoring and enforcement are undertaken not only to identify specific violators and return them to compliance, but also to deter the violators and all other similarly situated regulated entities from non-compliance. Underlying this paradigm is the assumption that most regulatees will comply with the law when costs of non-compliance exceed the benefits. By recuperating the unlawful benefits gained by the violator, compliance assurance systems help maintain the level playing field and ensure that no company obtains a competitive advantage from its non-compliance[1].

1.1.2 Evolution of substantive content of compliance assurance

The traditional substantive content of compliance assurance systems – to check compliance with all requirements and return violators to compliance – has broadened over time. Nowadays these systems play a role in identifying potential problems (even if not subject to legal requirements) and providing guidance to industries about ways to improve their environmental performance.

[1] Silberman, J. (2000), Does Environmental Deterrence Work? Evidence and Experience Say Yes, But We Need to Understand How and Why, ELR News and Analysis, Environmental Law Institute, Washington D.C.

This enlarged understanding of the aim of compliance assurance is closely linked to the diversity of solutions that are applied to achieve environmental policy goals, i.e.:

1. **Direct regulation**, by setting legal requirements or by issuing licenses, followed by inspection and enforcement;
2. **Indirect regulation**, by promoting behaviour through other means than inspection and enforcement, *e.g.* by using information-based instruments, providing economic incentives and education, etc.
3. **Self-regulation**, by adjustment of behaviour by the regulated community itself, because they believe it is just to do so.

Over a long period, direct regulation as a solution to environmental problems was a major reason for the existence of compliance assurance systems and, respectively, environmental inspectorates. The increasing diversity of environmental policy instruments (Box 1-1) has recently led to a change in goals and functions performed by environmental inspectorates.

There are very few circumstances where a single policy instrument is likely to be the most efficient or effective means of addressing a particular environmental problem. The best means of achieving regulatory compliance is through the design of combinations of instruments (policy mixes). It is useful that pluralism applies also to participants of regulation. In most countries, the regulatory process has been artificially restricted to government and industry, while a greater range of actors, including commercial third parties, such as banks, insurers, consumers, suppliers, environmental consultants, and non-commercial third parties (*e.g.* professional associations or NGOs), can assist in taking the weight off government intervention.

Box 1-1. The array of environmental policy instruments

Category	Examples
Command and control	Licences/permits; Ambient quality standards; Emissions standards; Process standards; Product standards; Prohibition bans.
Economic instruments	Charges; Taxes; Tradable emission permits; Tradable quotas; Environmental subsidies; Deposit-refund systems; Performance bonds; Non-compliance fees; Resource pricing.
Liability, damage compensation	Strict liability rules; Compensation funds; Compulsory pollution insurance; Extended producer responsibility (EPR)
Voluntary approaches	Unilateral commitments; Public voluntary programmes; Negotiated agreements.
Education and information	Education campaigns for the general public; Diffusion of technical information; Publicity of sanctions for non-compliance; Eco-labelling.
Management and planning	Environmental management systems; Zoning; Land use planning.

Source: OECD (2001), Sustainable Development: Critical Issues, OECD, Paris.

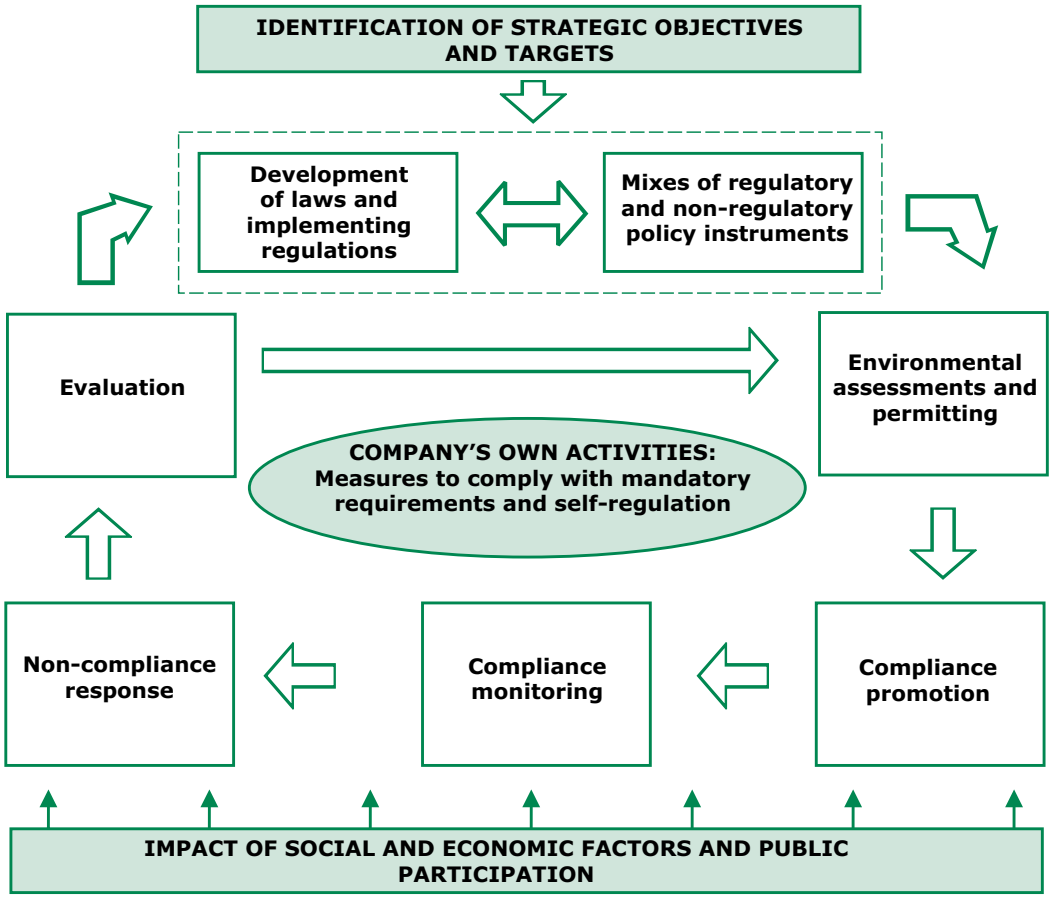
1.1.3 The role of compliance assurance in the regulatory cycle

As a whole, the regulatory activity is an iterative (cyclical) process that links legislation, as an outcome of the policy process, to licensing/permitting (and other environmental approvals of economic activity), compliance assistance, compliance monitoring, enforcement, and assessment and feedback, closing the cycle with possible input for adjustments of the laws. Effective regulation needs continuous, pervasive feedback and self-correction; all its phases cannot function solitarily. Due to these particularities regulation is often considered as a dynamic regulatory cycle.

The regulatory cycle starts with policy planning and the objectives following from that. Regulations are often introduced in response to political pressure to tackle urgent issues. All phases and links in the cycle are there to ensure the achievement of the policy objectives; in particular, there is no use in inspecting and enforcing if there is no specific policy objective.

Setting policy objectives alone is insufficient, therefore they are translated into legislation. By nature, environmental legislation will, to a large extent, be framework legislation. The practical application of the legal provisions in particular situations is further given shape in secondary legislation, as well as in environmental licenses/permits and other types of environmental approvals required before an economic activity is started.

Figure 1-1. The regulatory cycle



Source: OECD, based on materials of the Finnish Environment Institute (2004).

Sometimes it happens that so-called "dead-rules" are inspected and enforced. These are rules that originate from another era, other political settings, or times with other norms and values. Enforcing "dead-rules" can harm the credibility of inspectorates and misuse scarce human resources and should thus be avoided. A few clear, strong, feasible, and enforceable regulations will bring more benefits than many weak regulations. Regulatory requirements should also be compatible with the capability to conduct inspection and emissions/ambient monitoring.

Establishing rules is important, but their usefulness is doubtful unless the regulated community takes steps to comply. Industries can be supported in doing so by compliance assistance activities. The compliance promotion activities are carried out by or on behalf of the responsible authorities.

This approach pays off to a large extent but often compliance promotion alone will not be convincing enough for all members of the regulated community to obey the law voluntarily and therefore compliance monitoring[2] and enforcement will be necessary. Inspections remain the backbone of compliance monitoring, and compliance assurance in general. Often they are regarded as a "preventative approach" since they mean, in the majority of cases, performing a check without there being any suggestion of an offence. Many other reasons for conducting an inspection exist, as shown in Box 1-2.

Discovery of non-compliance during inspections will lead to enforcement action. The contents of the latter will depend on the enforcement strategy that is being used by the competent authority.

Outcomes of inspections and enforcement are assessed to see whether the legal provisions and permit conditions were enforceable and practicable. The conclusions from this assessment should be communicated to the officials responsible for drafting the legislation and permitting. Through the practical input from the inspection and enforcement steps, improvements in legal provisions and licenses/permits can be made, in order to achieve the policy objectives and keep the laws and inspectorate action credible and accepted by the public.

This function of compliance assurance systems must be emphasised through improvement of feedback mechanisms. If this function is lost, when a law proves to be ineffective, lawmakers often yield to the temptation to issue another, corrective law; this new law is then even less effective. This process, which ultimately produces "symbolic laws", is a vicious circle that can threaten the credibility of environmental regulation.

Overall, industries' decision to comply will depend upon the effectiveness of each element in the regulatory cycle. The weakness of one of the elements will enfeeble the entire system.

1.1.4 Compliance assurance programming

Compliance assurance programming refers to the whole range of defining policies and establishing procedures, targeting and action planning, budgeting, implementation, results measurement, feedback, and operation improvement. The process of programming leads to the development of policies, strategies, and plans. Inspectorates, at the national or local level, will be responsible for programming. They will cooperate with other governmental and non-governmental actors to exercise this function.

Policies will guide the decision-making process at higher or lower levels of organisations. The major policy aspects that need to be addressed by an environmental inspectorate include:

- Use of tools of compliance assistance, compliance monitoring, and enforcement;
- Scope and standard frequency of inspection;

[2] In this context, compliance monitoring includes inspection, ambient/emissions monitoring and self-monitoring by industrial operators.

Box 1-2. Key reasons for conducting an inspection

Inspections may have many reasons. At the practical level, one often sees combinations of these, which might include the following:

- **Preventative (proactive) inspections:** They are carried out proactively as part of a planned programme in order to show inspection and enforcement presence by the authorities. This will prevent the non-compliance of the regulated community;
- **Reactive inspections:** In some areas inspections are only carried out as a reaction on incidents or accidents, or triggered by an adverse trend in some other performance indicator;
- **Inspections as part of licensing and other approvals:** Licenses are often seen as contracts between the authorities and companies. The authorities need to know whether companies are able to and do operate according to these contracts and therefore use inspections as part of an approval process and as a follow-up;
- **Inspections to collect and check data:** Authorities need information on the compliance behaviour of the regulated community. By performing inspections they can acquire this information;
- **Emergency planning inspections:** To verify and validate the basis for, and the interfaces with, aspects of emergency planning, the authorities may need information on safety situations. They can gather that information through inspections;
- **Inspections to check correctness of reporting from the regulated community:** As an inspection activity it can be appropriate to verify and validate information that is supplied by the regulated community through reports, whether voluntarily or not;
- **Inspections to verify corporate management systems:** Flaws in management systems in companies can trigger major environmental risks, although these systems generally are not prescribed. It is good practice to pay attention to these aspects in the framework of inspections, since deficient environmental culture and management call for more intensive inspection. In this case, inspection may be part of an audit or similar assessment process;
- **Technical reviews:** The physical checking of plant and equipment against standards, either regulatory or technical, was once, but in many OECD countries is no longer, the predominant form of the inspection activity. This kind of inspection is still needed;
- **Inspections as follow-up to public and other stakeholder information/interest/involvement:** These inspections are initiated due to some form of discontent expressed by third parties as regards environmental performance of a facility.

Source: Adapted from *Reference Handbook on Environmental Compliance and Enforcement in the Mediterranean Region,* UNEP (2004).

- Delegation of compliance monitoring functions to third parties and extent of dependence on operator's own monitoring data;
- Use of announced and unannounced inspections;
- Approaches to quality assurance;
- Decision-making policies for prevention of regulatory capture or corruption;
- Role of cost-recovery charging, if any, for inspection and environmental monitoring.

Strategies are decisions already made to commit the resources of an organisation in a given direction to achieve specific goals. A strategy must achieve the balance between the demands on the inspectorate and the reality. Strategy development will be based on the knowledge of environmental and economic conditions and will proceed from the mandate given to the environmental inspectorate, and adopted policies. A regular update of the strategy will be essential to adjust the direction and approaches of work to changing external and internal (organisation) conditions. Radical overhaul of the strategy might be needed when changes are too radical and too numerous such as is characteristic of transition economies.

The starting point for the strategy includes estimates of the scope of compliance assurance and a robust assessment of the capacities to cover this scope, as well as the legal and political constraints on inspectorates' operational flexibility. The government has to set priorities in cases where the intensity of compulsory inspection does not match the institutional capacity of the compliance assurance system.

Well-developed compliance assurance strategies result in feasible multi-year or annual plans of environmental inspectorates. These plans will allocate available human resources and budgets to compulsory inspection (by law), inspection campaigns, complaints investigations, court actions, inspectorate advisory functions, reporting, and other activities, *e.g.* public relations.

1.1.5 Principles of environmental compliance assurance

Key principles

Worldwide, environmental compliance assurance is supported by several principles, most importantly:

- Proportionality in the application of the law and in securing compliance;
- Consistency and credibility of approach;
- Transparency about how to operate as an inspectorate and what the regulated community may expect from the inspectorate;
- Targeting of enforcement action.

The concept of **proportionality** is addressed through the balance of action to protect the environment against risks and costs. Some incidents or breaches of regulatory requirements cause or have the potential to cause serious environmental damage. Others may interfere with people's enjoyment or rights, or the inspectorate's ability to carry out its activities. The inspectorate's first response is to prevent harm to the environment from occurring or continuing. The non-compliance response taken by the inspectorate should be proportionate to the risks posed to the environment and to the seriousness of any breach of the law.

Consistency means taking a similar approach in similar circumstances to achieve similar ends. The inspectorate aims to achieve consistency in the response to pollution and other incidents and the use of powers and decisions on whether to prosecute. The inspectorate should recognise that consistency does not mean simple uniformity. Decisions on enforcement action are a matter of professional judgement and the inspectorate, through its inspectors, needs to exercise some discretion. Inspectors need to take account of many variables: the scale of environmental impact, the attitude and actions of management of the company, and the history of previous incidents or breaches. Arrangements to promote consistency, including clear decision-making criteria and effective arrangements for liaisons with other enforcing authorities, should be developed and maintained.

Research shows also that the effect of inspection and enforcement is strengthened if it is credible. **Credibility** can be achieved by clear and realistic targets, proportional sanctions for non-compliance, and a high chance of getting caught. Credible inspection and enforcement actions should have the following characteristics: continuity, adequately founded, proportional, deterring, but fair. Furthermore the actions of the authorities (including the inspectorate) should be legitimate, authoritative, professional, and co-ordinated.

Transparency is important in maintaining public confidence in the inspectorate's activities. It means helping the regulated community and others, to understand what is expected of them and what they should expect from the inspectorate. It also means making clear why an inspector intends to, or has taken enforcement action.

Transparency is an integral part of the role of inspectors and the inspectorate will train (and continue to train) its staff to develop its procedures to ensure, that:

- Where remedial action is required, it is clearly explained in writing, if requested, why the action is necessary and when it must be carried out. A distinction should be made between best practice advice and legal requirements;
- Opportunity is provided to discuss what is required to comply with the law before formal enforcement action is taken, unless urgent action is required, for example, to protect the environment or to prevent evidence being destroyed;
- Where urgent action is required, a written explanation of the reasons is provided as soon as practicable after the event;
- Written explanation is given of any rights of appeal against formal enforcement action at the time the action is taken.

Targeting means making sure that regulatory effort is directed primarily towards those whose activities give rise to or risk of serious environmental damage, where the risks are least well controlled, or against deliberate or organised crime. Action will be primarily focused on lawbreakers or those directly responsible for the risk and who are best placed to control it.

Other principles

The inspectorate will also need to develop tools to **assess and compare risks**. There are high risk sites (*e.g.* some major chemical plants or some waste disposal facilities) which should receive regular visits so that the inspectorate can be sure that remote risks continue to be effectively managed. However, a relatively low risk site or activity poorly managed has potential for greater risk to the environment than a higher risk site or activity where proper control measures are in place.

The inspectorate is supposed to have systems for **prioritising regulatory effort**. They include the response to complaints from the public about regulated activities, the assessment of the risks posed by a permit holder's operations and the gathering, and acting on intelligence about illegal activity.

Inspection **follow-up** is important to ensure that shortcomings identified are addressed in an appropriate and timely fashion, and that there is verification of actions taken. In this regard there are a number of different tools available to public authorities for follow-up action items, depending on the severity of the concerns including, for example: notifications of changes to be made; identification of agreed actions and timetables; citations and fines; and, in the most severe cases, shutdown of facilities, etc. Repeated incidents or breaches of legal requirements, which are related, may be an indication of an unwillingness to change behaviour or an inability to achieve sufficient control. It may require a review of the legal requirements (like license prescriptions), of the actions of the company's operator, and additional investment.

Public authorities will develop standardised protocols and forms, to promote a **structured approach to inspections** and to inspection reports. Protocols should address the steps included in the inspection (from preparation to the on-site visit, through reporting and follow-up). This will allow improved understanding of trends over time and facilitate exchange of information and experience.

In the case of the **use of third parties** (independent of government and the operating company) delegated to undertake technical or systems inspections on behalf of public authorities, there is need to ensure the quality of such parties (for example, through certification or accreditation schemes).

Public authorities retain their legal responsibilities for the inspections; they cannot delegate their responsibilities to the third party inspectors. Care should be taken to avoid conflicts of interest, in particular where such third parties engage in both consulting as well as inspection services. Inspection authorities should also be **involved** in other **related activities** designed to further the general objective of supporting improvements in external safety and labour safety, health, nature, etc.

1.1.6 Profile of an inspector within basic and advanced regulatory systems

In basic regulatory systems, the inspector will be involved in inspection, enforcement, and assessment and feedback of information about the effectiveness of the compliance assurance system in achieving policy and regulatory objectives. In more complex systems the inspector is also likely to have the following tasks:

- Contributing to environmental policy development;
- Contributing to the development of legislation and supporting regulations;
- (In some countries) permitting or preparation of negotiated agreements about industry's voluntary objectives and targets going beyond regulatory compliance;
- Promoting voluntary environmental compliance;
- Setting inspection priorities;
- Checking environmental compliance;
- Enforcing the rule of law;
- Assessing and supplying feedback of information to policy makers, legislators, and permit writers;
- Contributing to the implementation of international environmental law.

These tasks are described below in more detail.

Contributing to policy development

Policy development is the usual government response to a generally accepted need, or to pressure from society, or from the international community. The planning of environmental protection policy and the setting of associated objectives at government level involves recognising and balancing environmental with various other considerations, including those of social and economic character.

The inspector's role is to contribute professional experience and knowledge of sources of pollution, of their effects on the environment, and of the practicality and implications of various courses of action and, hence, to assist in the setting of specific and realistic objectives for environmental protection. Involvement in this work is an invaluable background for the subsequent task of explaining to operators, and to members of the public, the broad context of regulatory requirements and their benefits for the society as a whole.

Contributing to the development of legislation and supporting regulations

Experienced inspectors play a key role in advising lawmakers on the practicability and enforceability of proposed legislation and regulations. Absence of inspector involvement may result in legislation that is unenforceable or otherwise deficient and which, therefore, fails to deliver the desired objectives of environmental policy.

(In some countries) permitting or preparing negotiated agreements with industry

Depending upon the administrative or organisational structures within a national environment protection authority, inspectors may be responsible for issuing permits or for agreeing environmental targets or objectives to be taken by industry beyond the regulatory requirements. If the inspector is not directly responsible for this task, he or she will be almost inevitably called upon to advise on the conditions, in particular emission limit values, to be included in permits or on practically achievable objectives or targets for a particular process or installation.

Setting inspection priorities

Inspections should be carried out by an inspector or inspectors supported by experts, as needed, to address the specific hazards or other peculiarities of the company or its installations. Inspectorate managers, in consultation with inspectors, should establish programmes for inspections on an annual, or multi-year basis, establishing goals and priorities (*e.g.* to focus during one year on a particular subject such as multi-operator sites) and setting out timetables.

In setting goals and priorities, the authorities should take into account past performance of companies, as well as the nature and extent of risks involved in their installations. Normally, the inspection programme would include provision for scheduled inspections, as well as for inspection campaigns or unannounced site visits as necessary (*e.g.* where there is an area of concern). Inspectors will undertake more detailed technical and administrative reviews as part of an overall inspection plan as well as in response to poor performance or other identified concerns. An important benefit of setting out plans well in advance is that it provides the opportunity for authorities to train and equip their inspectors to effectively carry out the plans.

Promoting compliance

Usually the inspector is at the critical interface between policy makers, operators of industrial installations, and members of the general public. Advantage may be taken of this situation by giving the inspector a responsibility for promoting good environmental performance, in the sense of educating or influencing operators towards improved environmental behaviour and practice. The inspector's role, in this context, is to explain to all concerned the relevant environmental objectives and targets, together with their reasons, and where appropriate to provide guidance and support to operators without replacing the operator's responsibility for the proper management of his installation.

Checking compliance

Checking compliance is an inspector's core task in any regulatory system. It is generally described as "inspection". In its broadest sense, it entails:

- Checking the compliance of companies (and individuals) with environmental requirements stated in laws, regulations, ordinances, governmental or ministerial decrees, directives, prohibitions, agreements, and/or permits;

- Monitoring the general and environmental impacts of specific industrial installations, companies or activities that might indicate the need for enforcement action or for more detailed investigation.

Key elements of this task are:

- Contributing to the inspection planning, *i.e.* setting out a clear framework for inspection activities;
- Collection of site-specific information from visits, site surveys, etc.;
- Analysis of results and follow-up at the site/company level;
- Regular evaluation and reporting of inspection activities.

After each site visit, the findings of inspection need careful evaluation. They should lead to clear conclusions regarding any further action and should be properly recorded in a site visit report.

Enforcing the rule of law

Depending upon administrative or organisational arrangements, and upon the extent of the inspector's authority, he or she may have to exercise legal sanctions in the event of any non-compliance with the terms of a permit or any other environmental requirements. In any case, the inspector's report, together with any additional advice, will be required for the exercise of sanctions provided by the law. In most regulatory systems, however, the inspector's authority will extend at least to requiring immediate action upon discovery of imminent risk of serious harm to the environment.

Assessing and supplying feedback of information to lawmakers and permit writers

Based on the inspector's experience, he or she will be required to evaluate the effectiveness in delivering the government's policy objectives, and to help in formulating any necessary improvements. These may be at the fundamental level of changes to primary legislation or to supporting regulations but, in the short term, are more likely to concern the processes of drafting and issuing permits or the setting of environmental objectives and operational targets. For these purposes, it is clearly helpful for the inspector to have been involved in the early steps of the regulatory cycle.

Participating in international compliance assurance: An emerging role

Environment does not know any political borders or boundaries. Many of the pollution problems are not only local, sometimes not even regional - many have a national or even international origin. The question is therefore, what should governments and their inspectorates do about the phenomena of transboundary pollution and its causes.

To begin with, a comprehensive compliance programme – for each country involved – is required. The programme would have:

- Common legislative tools, trained and equipped inspection staff, and attuned inspection strategies and systems;
- A common obligation, interest, and prioritisation in exercising discretion in inspection and enforcement actions;
- A firm organisation with the expertise, the know-how, and the minimum supporting technology;

- Co-operation, tailored to confront the financial bases of these environmental crimes and hazards;
- An international network, with designated focal points and competent authorities. This network should administer the free flow of information as regards the substances or pollution sources.

For example, as regards the transboundary shipment and trade of wastes, after defining specifically what is at stake, the goals of the government should be:

- Ensuring adoption of measures to achieve maximum reduction in wastes;
- Ensuring that local disposal of wastes is kept local and close to its generation;
- Ensuring that shipments of wastes are reduced to the greatest possible extent, and that when they do occur, they are managed in an environmentally sound manner;
- Applying strict regulations and enforcement measures within the border control authorities, in regard to illegal shipments of merchandise with environmental pollution potential;
- Making sure that whenever such a shipment occurs, it is sent to an area or country that has the technological know-how for handling, storing, recycling, or disposing of the materials in an environmentally sound manner.

Each country should explore and use the existing global or regional legal tools, which were created to tackle different problems. Such conventions and treaties are meant to give the words "think globally" and "act locally" a meaning. To achieve compliance, therefore, countries should implement legal tools that comply with international guidelines. The system should then be created in terms of educating the constituencies in what is expected from them considering the new demands and standards. This should be accompanied, with the aid of the public and NGOs, as much as possible to increase general understanding and to create the right political situation and support.

Co-operation between parties whether a certain convention or agreement is involved or not, must be based on the recognition that it is for the welfare of all citizens of the area. Therefore reaching compliance in a strong relationship must incorporate:

- Developing monitoring programmes and mutual information flows (bilateral or multilateral);
- Developing partnerships, networks, exchange programmes, with and within all parties involved;
- Free transfer of technologies, know-how, technical standards, and procedures;
- Training and capacity building of inspectorate and border control personnel, customs officers, police officers, etc.;
- Capacity building within designated laboratories.

1.1.7 Inspector's knowledge and skills[3]

Necessary skills and knowledge of inspectors very much depend on the tasks they have to fulfil. Carrying out all the above-mentioned tasks obviously means that the inspector is active at the interface of policy-making, licensing, enforcement, and even environmental management.

Usually compliance assurance systems draw upon a mix of skills and expertise, including engineering, scientific, legal, economic, and administrative staff. These individuals will need to work together effectively to identify and respond to violations. One key decision in assigning roles to personnel is the degree to which inspectors will become involved in following up on violations they have detected. In some countries, inspectors focus on inspections, while other technical and legal staff is responsible for taking action against violators. In others, inspectors play a major role in enforcement response. Clearly defining the roles of the individuals involved in enforcement provides a basis for efficiency and co-operation. In many countries, technical and legal personnel work hand in hand to develop enforcement cases.

Besides sufficient knowledge to cope with core functions, inspectors will have to deal with new policy instruments like: company internal environmental plans, environmental management systems, self-auditing, certification, and annual corporate environmental reports. The new instruments require the following specific knowledge and skills of inspectors:

- They must have a clear picture of what an environmental management system, audit, certificate, and annual environmental report are, and in particular what they are not;
- They must be able to form an overall opinion of the environmental performance of a company. This requires auditing skills and an understanding of business management;
- On the basis of audits (whether or not performed or attended by themselves), audit reports, and certificates, they must be able to form a sound opinion of an environmental management system in a company;
- They need knowledge and skills with regard to auditing due to the new approach in supervision, in order to perform in-depth inspections if necessary;
- Their opinion on the environmental performance must be made as explicit and substantiated as possible, so that on that basis a meaningful discussion can be conducted with the company;
- They must be able to distil from an annual environmental report the information they need to assess whether a company complies with the relevant regulatory requirements, and with targets of voluntary agreements, where applicable;
- They must be able to validate the environmental information generated by the company. This requires sound knowledge of measuring, registration, and reporting systems;
- Licensing and enforcing officials must be able to work together effectively, each on the basis of their own responsibility and tasks. This requires communication skills;
- They must be able to clearly distinguish between supervision (preventive inspection) and enforcement (repressive inspection). This requires flexibility and improvising skills on the one hand, and a systematic approach on the other hand.

In brief, inspecting authorities must be able to assess and substantiate the actual environmental performance and the guarantees for continuity and improvement as objectively as possible.

[3] The topic of inspector's knowledge and skills is further developed in Part 2 of the Toolkit.

CHAPTER 1.2
PREVENTING AND ADDRESSING REGULATORY FAILURES

Compliance assurance systems and institutions cannot function meaningfully unless the environmental requirements are established with feasible compliance objectives and are enforceable. If these pre-conditions are not met, environmental inspectorates will face wide non-compliance and will often be forced to take discretionary decisions that are likely to lead to corruption and lowering of the credibility of the environment protection system as a whole. To avoid such situations, it is desirable to know and address some common determinants of compliance behaviour prior to enabling and enforcing a certain requirement.

1.2.1 Roots of regulatory failures

Though there is little hard evidence, a growing body of studies from OECD countries suggests that many rules that exist just on paper fail to elicit compliance and the understanding is growing that achieving compliance involves a detailed analysis, understanding, and consideration of the context in which regulation operates. The discussion below outlines some ways in which poor quality regulation can fail to bring compliance. These fall under four major categories[4].

Category 1: Failures in definition of regulatory objectives

Objectives could be more effectively attained through other means. Governments and regulators sometimes rely upon certain types of regulatory instruments to address problems as a reflex action, without adequately determining the most appropriate solution. For example, in some countries it is common for issues to be addressed by parliamentary law, whereas in others more informal agreements may be most frequent. The common usage of one form of regulatory instrument may 'blind' governments to the higher effectiveness of another instrument in particular circumstances. Conversely, an approach that is effective in one country may result in resistance and non-compliance in another country where that approach is not suitable.

Desired outcomes are incorrectly defined. Some regulations are not based on a clear idea of what is to be achieved (regulatory objective) and therefore achieve very little. For example, this is a typical problem when national regulations do not take into account the transboundary pollution or cross-media transfer of pollution.

Category 2: Regulatory design failures

Compliance is too costly. Compliance rates can be reduced if the costs of complying with regulation are too high. Many factors contribute to compliance costs: emission and technical standards are too high, the transition time necessary to come into conformity is too short, or the regulation is inflexible. If the regulation seems unreasonable, instead of complying, businesses might dedicate more time and money to lobbying regulators to change a regulation or to ask for special treatment.

[4] OECD (1999), The State of Regulatory Compliance: Issues, Trends and Challenges, OECD, Paris.

Tools of regulatory impact analysis have been implemented in many OECD countries to collect data on estimated and actual costs of compliance. However many analyses of compliance costs do not take the next step of identifying what impact, if any, these costs have on compliance rates. Faulty or limited impact analyses can lead, in their turn, to compliance failures.

Requirements are too complex to know and understand. People cannot comply with laws or regulations if they do not understand what is required. The proliferation of laws or multiple amendments to improve them can lead to a loss of simplicity and therefore a loss of ability to understand what compliance involves. Inaccessible and incomprehensible regulation particularly affects small business compliance rates. Many studies show that small business cannot keep up with the volume of regulations and regulatory guidance that is produced by many regulatory agencies.

For example, Norwegian internal control regulations (Ministry of Local Government, 1991) entered into force in 1992 and required all businesses and other organisations that employ people, both public and private, to establish and maintain a control system for environmental, health and safety issues. A 1994 evaluation of implementation of the requirement among 100 top managers found a major difference in knowledge of the regulation between SMEs and large businesses: 43% of managers in SMEs – which make up 90% of Norwegian firms – had never heard of the regulations.

Overly legalistic regulation. An overly rule-based or 'legalistic' approach to compliance can undermine the achievement of the desired result because people lose confidence in regulation if they are required to comply with technical rules that do not appear to relate to any substantive purpose. Overly legalistic regulation can take the form of the imposition of uniform, detailed and stringent rules in situations where they do not make sense, or failure to consider arguments by regulated enterprises that exceptions to the technical rules should be made. When business people feel that regulators are being overly legalistic in the application of rules and imposition of fines, even when the business was acting responsibly, they respond by scaling down efforts to comply fully with the requirements of the law and instead aim for only the minimal level of compliance.

Overly technical rules can also increase non-compliance by encouraging evasion and creative adaptation. As the technicality of rules increases so does the possibility for less scrupulous players to find loopholes and engage in "creative compliance". This is a problem *e.g.* in tax compliance where professional advisors can act as "avoidance entrepreneurs".

Competing government policies or regulatory instruments undermine compliance. Compliance rates are likely to be low when a government is simultaneously pursuing two competing regulatory instruments or policies that send contradictory signals to business.

Regulation is at odds with market incentives or cultural practices. Compliance rates are lower when regulation does not fit well with existing market practices or is not supported by cultural norms and civic institutions. Of course sometimes the whole point of introducing regulation is to counter a market or cultural practice. However if regulation cuts across existing cultures and fails to build support through education, market incentives, or linkage with institutions of civil society, then it is unlikely to be effective at eliciting compliance.

Prior consultation with target group failed or never happened. Failures of consultation with target populations can cause regulatory failures because regulators may not find out about factors falling into the categories described above that could lead to regulatory failure, or because lack of adequate consultation may fail to secure target group support for the proposed regulation. In addition consultation allows target populations to have an input into the terms of the proposed regulation so that they understand why it is necessary and how their concerns have been addressed. This can give them a sense of 'ownership' or understanding that will increase their commitment to the objectives of regulation and therefore increase rates of compliance.

Category 3: Failures of implementation

Failure to monitor. Regulations that are never monitored are unlikely to bring compliance. Furthermore, monitoring that is not rigorous enough or that is not targeted at high risk areas is less likely to be effective. Studies of the effectiveness of occupational safety and health inspections in the United States and Canada have found that short, superficial inspections that check only the firm's injury records have little effect on injury rates. But more rigorous, frequent inspections can actually be more significant than penalty levels in improving business safety performance.

Failures in monitoring can be particularly problematic for compliance when regulators have relied on self-regulation or co-regulatory schemes in a particular area with the aim of increasing voluntary compliance and maintaining regulatory flexibility. Insufficient monitoring of compliance under these schemes is very likely to reduce compliance considerably.

Procedural injustice. Researchers have found that if people feel that they are treated unfairly by the government or a regulatory agency, then they will often respond by refusing to comply with regulatory requirements. This means that during inspections and enforcements regulatory agencies that act in a way that is perceived as unfair are likely to result in lower compliance.

A series of studies of the effects of different inspection styles used by regulators, in particular in environmental regulation, have shown that when strict, coercive strategies are used to achieve compliance, regulators often break down the goodwill and motivation of those actors who were already willing to be socially responsible. An organised culture of resistance can arise from policies perceived to be unreasonable: When punishment rather than dialogue is in the foreground of regulation, people will find this humiliating, will resent and resist in ways that include abandoning self-regulation.

Deterrence failure. Regulators can face a failure of deterrence where infringements have high rewards and low probabilities of detection. When fines are not high enough to offset the profits potentially available from non-compliance, the government can find itself in a "deterrence trap". If it imposes a fine large enough to deter, it may bankrupt the firm or at least so deplete the liquid assets of the firm that workers will lose jobs. Additionally, because of limited regulatory agency resources or lack of strategy in monitoring and enforcement, non-compliance may have a low probability of detection and enforcement. The threat of enforcement will not act as a deterrent if people do not believe non-compliance is very likely to be discovered or punished.

Box 1-3. Example of deterrence failure in regulating international marine oil pollution

Regulators of intentional oil pollution at sea found that setting an outcome standard (no less than a certain amount of oil to be discharged at sea) completely failed to elicit adequate compliance levels because it relied on the deterrent threat of inspection discovering non-compliance and punishment. Non-compliance was extremely difficult to monitor on the open seas. Instead an international regime that mandated a certain type of technology for the design of ship ballasts made intentional oil pollution much more difficult and showed to be successful. In this case monitoring implementation of the technology was much easier than monitoring oil pollution at sea.

Ship builders and classification societies accepted the new regime and acted as third party enforcers, by not building and not insuring ships without the mandated technology. Thus the regulatory regime created obstacles to non-compliance in the first place, and relied on non-state actors, on whom the operators are dependent and who have no economic interest in avoiding the costs of regulation, to monitor compliance.

Source: OECD (1999), The State of Regulatory Compliance: Issues, Trends and Challenges, OECD, Paris.

Category 4: Failure of confidence in regulation, government agencies, and rule of law

Finally, regulation that fails to elicit compliance can lead to a vicious circle in which compliance failures promote loss of confidence in the value of regulation by businesses and citizens, who therefore comply even less with regulation. This can lead ultimately to a devaluation of regulatory instruments, of government, and of the rule of law.

1.2.2 Amplifying factors

In addition to the four categories of regulatory failures discussed above some crosscutting issues that amplify the effect of these failures can be identified:

Administrative culture

Different administrative and national cultures can have different impacts on compliance. Each country has its own social norms concerning compliance that derive largely from the credibility of the laws and the institutions responsible for implementing those laws. For example, the social norm may be non-compliance in countries where laws have historically not been enforced, either because the law is unenforceable or because the institutions responsible for enforcement have lacked the political power or resources to enforce. There may also be a resistance to enforcement in countries where recent regimes have imposed laws against the will of the citizens.

Strategies to build credibility will vary. In some cultures, aggressive enforcement will provide credibility. In others, it may be important to have an initial period of promotion and encouragement to create a spirit of co-operation, followed by a well-publicised shift to more aggressive enforcement to signal that there will be consequences for non-compliance. In other cultures, a mixed approach at the outset may be most successful.

Social factors

Moral and social values may inspire or inhibit compliance. For example, in some situations, facilities may voluntarily comply with requirements out of a genuine desire to improve environmental quality. They may also comply out of a desire to be a "good citizen" and maintain the good will of their local communities or their clients. Facility managers may also fear a loss of prestige that can result if information about non-compliance is made public. Conversely, compliance will likely be low in countries where there has been little or no social disapproval associated with breaking laws and/or damaging the environment.

Social factors motivating compliance:

– Moral and social values for environmental quality;

– Societal respect for the law;

– Clear government will to enforce environmental laws.

Social factors de-motivating compliance:

– Lack of social respect for the law;

– Lack of public support for environmental concerns;

– Lack of government willingness to enforce.

Social respect for environmental requirements can be improved by finding industry leaders who agree to set a well-publicised example of compliance, and by firm and visible enforcement of environmental requirements (particularly if the initial focus is to correct non-compliance that is posing significant and clear risk to the environment and/or public health).

The government's will to enforce environmental laws – that is, to affirmatively promote voluntary compliance and identify and impose legal consequences on those who do not comply voluntarily – indicates and influences social values. Not enforcing a law tends to express a value that compliance is not important. A goal on the part of the government to bring the majority of the regulated community into compliance sends a message that compliance is important and helps build a social norm of compliance.

Psychological (personal) factors

Several psychological factors may affect compliance rates. One of these is fear of change – the belief that familiar ways of operating are safe and new ways are risky. Closely related to this is inertia. Many people tend to naturally resist change because of the perceived effort it will require to enact the change. Both promotional efforts to publicise the benefits of compliance and the perception and reality of consequences for non-compliance play an important role in overcoming inertia.

Personal factors motivating compliance:

– Positive personal relationships between programme personnel and facility managers, free of conflict of interests;

– Desire, on the part of the facility manager, to avoid the legal process;

– Desire to avoid jail, the stigma of enforcement, and adverse publicity.

Personal factors de-motivating compliance:

– Fear of change and inertia;

– Ignorance about requirements;

– Ignorance about how to meet requirements.

Successful personal relationships between inspectors and managers of regulated facilities may also provide an incentive to comply. On the other hand, a desire to avoid confrontation may prevent inspectors from pursuing the full range of enforcement actions they may need to take to ensure compliance. Also, an enforcement official's objectivity may be compromised if he or she becomes too familiar with the facility's personnel and operations. Oversight visits by an independent enforcement official can help monitor and prevent this potential problem. The relationship factor can be incorporated into the inspection and enforcement strategy through such a means as providing technical support to regulated groups.

Ability to comply

Besides being motivated to comply, regulated groups must have the ability to comply. This means they must know they are subject to requirements, they must understand what steps to take to create compliance, they must have access to the necessary technology to prevent, monitor, control, or clean up pollution, and they must know how to operate it correctly. A lack of knowledge or technology can be a significant barrier to compliance. This barrier can be removed by providing education, outreach, and technical assistance.

Factors increasing ability to comply:

– Availability of affordable technologies;

– Jobs and training dedicated to compliance;

– Bonuses or salary increase based on environmental compliance.

Factors generating inability to meet requirements:

– Lack of appropriate technology;

– Technologies that are unreliable or difficult to operate;

– Lack of internal accountability for compliance;

– Lack of management systems for compliance;

– Lack of compliance training for personnel.

In some cases the problem may not be unwillingness to comply with an objective but lack of information about the benefits of complying, or lack of knowledge, expertise, or technology to comply. In those cases, theprovision of education or advice by the competent

authority may be a more effective way to achieve the objective than promulgation of regulatory rules that may provoke resistance and non-compliance.

Characteristics of compliance assurance systems that accentuate regulatory failures

Factors originating in compliance assurance systems and institutions that accentuate regulatory failures can be many. At least the following factors should be taken into account:

- **Organisational and administrative shortcomings:** lack of reliable data, heavy workload, lack of resources, notification requirements, excessive reporting demands, need for changes in administrative structures and processes;
- **Political obstacles:** internal co-ordination problems, communication problems between levels of management and authorities, lack of integration into other policy sectors, lengthy parliamentary processes, etc.;
- **Human resources:** lack of personnel and relevant skills;
- **Procedural faults:** bad preparation of inspection, insufficient or missing inspection and enforcement strategy, no link between policy preparation and enforcement, no involvement of stakeholders;
- **Cultural issues:** lack of environmental consciousness in the overall government organisation, lack of awareness in the judicial and police sector, insufficient use of compliance promotion tools.

Sometimes what can influence the effectiveness of inspectors is the so-called "**issue-blindness**". Issue-blindness arises where an inspector has become so familiar with a particular site or installation and has become so accustomed to the operational arrangements that he/she no longer recognises some feature as a hazard to the environment. A way to deal with this includes regular rotation of inspectors' duties or requiring that inspectors work in pairs and that pairings change from time to time.

1.2.3 Three models of compliance behaviour and possible response

Because some of the above-mentioned factors always influence human behaviour towards compliance, it is of importance not only to know about them, but also to include in an environmental inspection and enforcement programme a range of approaches to change human behaviour. We can distinguish two categories of actions:

1. Promoting voluntary compliance through education and incentives;
2. Identifying violations and taking action to bring violators into compliance.

These two approaches are sometimes referred to as "carrot" and "stick". Different programmes will place different emphasis on them depending on the culture and the particular regulatory situation.

Whatever factors influence behaviour, they will almost certainly change over time. Therefore flexibility to review and to revise the inspection and enforcement programme design is the key to long-term effectiveness.

A lot of research has been done on compliance behaviour by companies and respective enforcement strategies. Kagan and Scholz (1984)[5] present three theoretical models of behaviour, each suggesting a somewhat different strategy of compliance assurance:

> **Model A** : The company as an **immoral calculator.** Fully driven by maximising the profits, costs and gains are compared. The law is not complied with if the (financial-economical) advantages are greater than the observed possibility that this non-compliance is discovered and/or a fine has to be paid.
>
> The inspector plays the role of a **policeman** with an emphasis on aggressive compliance checking. Each offence that is discovered will be promptly followed by heavy penalties to prevent the company from "getting away with more". The purpose is deterrence.
>
> **Model B** : The company as a **political citizen**, who in a normal situation will be willing to comply with the law, partly because of "the rule of law", and partly because of his own interests in the long term. This commitment however depends on certain factors. Managers may have strong ideas about the right policy and behaviour of their company. Some acts of non-compliance originate from a fundamental disagreement with legal provisions that are considered unjust or arbitrary.
>
> The inspector has the role of the **politician**, trying to convince the company of the rationality of the legal requirement. He will also have to be willing to postpone his enforcement action in order to accomplish an improvement through compromise. The inspector will have to be "responsive" concerning the complaints and be ready to adjust the rules to the justified problems that companies may have in case of strict enforcement action.
>
> **Model C** : The company tends to obey the law, but is potentially fallible and organisationally incompetent. Many offences can be ascribed to organisational failure: managers fail in adequate supervision of their staff, in estimating risks, in the putting in place of mechanisms in the organisation that inform the staff members about the legal requirements.
>
> In this situation the inspector has the role of **consultant**, analysing gaps in the information and organisation structures of the company. He can teach the appropriate technologies and management systems that can assure compliance in the future.

None of the above-described theoretical models however can give a full explanation of why companies comply with rules or not. Using one of them blindly and translating it into an inspection and enforcement strategy will probably be counterproductive. Treating each company as an immoral calculator, reacting with legal sanctions on each situation of non-compliance, creates an unnecessary economic burden. On the other hand, if there is always a reaction in the form of "responsive" politicians or consultants, without using sanctions, hoping to convince the company or to teach it "to do the right thing", immoral companies will abuse this flexibility.

It should be decided in which circumstances which view is the most appropriate one. The most appropriate one could be the basis for the inspection and enforcement policy.

[5] Kagan, R. A. and J. Scholz (1984), The "criminology of the corporation" and regulatory enforcement strategies. Enforcing regulation. Hawkins, K. and J. Thomas (eds.), Boston: Kluwer-Nijhoff.

1.2.4 Table of Eleven: A tool to evaluate the quality of regulation

The Netherlands Inspectorate of Law Enforcement within the Ministry of Justice has developed several tools to help it evaluate the quality of new or current regulations. The Table of Eleven (T11) was developed, among other things, as a standard checklist for public agencies in assessing new regulatory proposals and reviewing enforcement and other issues in relation to existing regulation.

It is a coherent list of dimensions (internal and external factors) that determine the compliance with legal requirements and helps governments understand the potential or existing compliance/non-compliance behaviour of target populations, and therefore design more effective regulation. Box 1-4 enumerates the T11 factors. The method is applicable to both administrative and criminal law. In policy development the T11 method can be used to ensure that all the dimensions of policy design that may affect compliance have been adequately considered and addressed.

Box 1-4. The Netherlands Table of Eleven (T11): definitions of key factors of compliance

The T11 factors can be divided into three main categories:

Category I. Spontaneous compliance dimensions: Factors that affect the incidence of voluntary compliance, that is, compliance that would occur in the absence of enforcement.

T1. Knowledge of rules: Familiarity of target group with laws and regulation; clarity (quality) of laws and regulations.

T2. Cost-benefit considerations: Material and non-material advantages and disadvantages resulting from violating or observing regulation.

T3. Level of acceptance: The extent to which policy, laws, and regulations are (generally) accepted by the target group.

T4. Normative commitment: Innate willingness or habit of target group to comply with laws and regulations.

T5. Informal control: Possibility that non-compliant behaviour of the target group will be detected and disapproved of by third parties (*i.e.* non-government authorities), and the possibility and severity of sanctions that might be imposed by third parties (e.g. loss of customers/contractors, loss of reputation).

Category II. Control dimensions: The influence of enforcement on compliance.

T6. Informal report probability: The possibility that an offence comes to light other than during an official investigation and is officially reported (whistle blowing).

T7. Control probability: Likelihood of being subject to an administrative (paper) or substantive (physical) audit/inspection by competent authorities.

T8. Detection probability: Possibility of detection of an offence during an administrative audit or substantive investigation by competent authorities (probability of uncovering non-compliance behaviour when some kind of control is applied).

T9. Selectivity: The (increased) chance of control and detection as a result of risk analysis and targeting firms, persons, or areas *i.e.* extent to which inspectors succeed in checking offenders more often than those who abide by the law.

Category III. Sanctions dimensions: The influence of sanctions on compliance.

T10. Sanction probability: Possibility of a sanction being imposed if an offence has been detected through controls and criminal investigation.

T11. Sanction severity: Severity and type of sanction and associated adverse effects caused by imposing sanctions *e.g.* loss of respect and reputation.

Source: Ministry of Justice of the Netherlands and the Erasmus University, Netherlands (2001)

Regulatory design is optimal when the result is simple to implement and produces a maximum level of spontaneous compliance. If T11 analysis shows that spontaneous compliance is insufficient and cannot be improved in certain areas, then additional controls and sanctions may need to be added in that area to guard against breaches and lead to a reasonable level of compliance.

The T11 can be applied to make an evaluation of strengths and weaknesses of regulatory requirements using one of two methodologies:

Firstly, via an **expert meeting.** A group of key figures from the target group, policy officials, administrators, enforcers, and other experts from the regulator/policy area can estimate the strength of each of the different T11 factors using their own experience.

Secondly, a more objectively valid way of conducting the T11 analysis is via extensive **research in the target group using surveys**. This will take longer and be more expensive but produce more reliable data.

In both cases each element of the T11 is assigned a numerical score from one to five in relation to the particular regulation being examined, with one indicating a weak compliance dimension and five being strong. This will pinpoint where compliance failures are likely.

The key concepts must be used in an unambiguous manner when applying this method.

- The "target group" is the group of people or organisations (companies, institutes) that have to comply with the rules.
- The term "compliance" concerns the behaviour of the target group.
- "Inspection and enforcement" mainly refers to the checking and sanctioning activities of the authorities. Other activities like information supply or granting subsidies are not mentioned in the Table of Eleven, but of course have a direct influence on the dimensions of spontaneous compliance.

A **Clarification Note** can be prepared to describe the results after a piece of legislation is assessed. This note should answer the questions concerning all three dimensions of compliance. It is recommended that the Clarification Note contain the following information:

- **The target group**

  A short but concrete description of the target group needs to be given. If known, data on the size, the composition, and the character of the target group or of the sub-groups will be indicated.

- **Inspection and enforcement system**

A clear description of the inspection and enforcement system is required:

  - Who is in charge of the compliance checking?
  - Who is in charge of inspection and enforcement of the penal law?
  - What are the competent authority's powers?
  - Where (in law) can these powers be found?
  - Which facts will be the main focus of the inspection and enforcement?
  - Which sanctions can be imposed on non-compliance of the rules?

- **Spontaneous compliance**

The user of the T11 will indicate to what extent the target group is to be expected to comply with the rules or will offend them, from the perspective of the target group's own initiative.

This will be explained by mentioning the most important arguments about why the target group will (not) follow the rules. The checklist dimensions 1-5 (one to five) of the Table of Eleven can be used for this. Sometimes in literature there are quantitative or qualitative data on compliance with similar or neighbouring sets of legal requirements. These can support an estimation of the extent of spontaneous compliance. Sometimes further examinations can be desirable to acquire more data.

- **Effectiveness of inspection and enforcement**

On the basis of the dimensions 6-11 (six to eleven) of the Table of Eleven, the user will indicate the strengths and weaknesses of the inspection, and how to enforce the relevant legal requirement(s).

- **Level of compliance**

Estimation will be given of the level of compliance of the legal requirement(s), that is as reliable as possible, based on the preceding questions. The following general remarks may be useful:

- If the entire target group complies with the rules (by itself), there will be no need or hardly any need for inspection and enforcement activities. However, even when the rules are properly obeyed in general, some inspection and enforcement is advisable; this prevents the danger of blurring of moral standards;
- If the spontaneous compliance drops, the inspection and enforcement efforts have to be strengthened to keep the same compliance level. The opposite is also true: if the spontaneous compliance level goes up, less inspection and enforcement will be necessary;
- There is always a motive for complying (or for offending). These concrete motives can basically always be categorised under one of the dimensions of the Table of Eleven;
- For the level of compliance the subjective chance of getting caught is qualifying, not the actual inspection frequency or level of coverage by checks of the regulated community;
- Sometimes legal requirements are not enforceable, but politically desired. It is recommended to avoid this kind of symbolic rule. If symbolic rules are really to be inspected and enforced, this is doomed to fail.

Table 1-1. The T11 Checklist

QUESTION	ANSWER
DIMENSIONS FOR SPONTANEOUS COMPLIANCE	
T1 Knowledge and clarity of the rules	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
Knowledge	
Does the target group (TG) know/is the TG likely to know the legal requirements?	
Are the legal requirements too extensive?	
Does it take a lot of effort to get acquainted with the legal requirements?	
Clarity	
Is or are there any doubts about the applicability of the rules?	
Are the legal requirements too vague or too complicated for the TG? Do people understand what is meant by them?	
Does comprehension of the rules require unjustified expertise from the TG?	

QUESTION	ANSWER
T2 Costs-benefit considerations	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
Financial/economic Is it a big effort (administratively, financially, technically) to comply with the rules? Does non-compliance bring profit in terms of time or money? Are there specific (physical) circumstances that complicate non-compliance? Are there specific advantages of compliance with the rules, for instance financial incentives? **Immaterial** Does compliance with the rules provide emotional or social advantages?	
T3 Level of acceptance	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
Does the TG group consider the regulatory approach and requirements reasonable? Can the TG feel committed to the issue that is addressed through a particular policy/requirement or are there differences of opinion? Can the TG contribute to the policy implementation (e.g. through self regulation)? Are the lawmaker's intentions clear and correctly formulated and are there loopholes in the law?	
T4 Normative commitment by the target group	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
Does this TG generally comply properly with the legal requirements? Does this TG always follow authority's demands? Are there habits/traditions in this TG that can conflict with the requirements? Does this TG have specific expectations of the authorities?	
T5 Informal control	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
Informal chance of getting caught Does the TG's environment quickly discover non-compliance? Does the TG, or its environment, generally disapprove non-compliance? Is there a strong group spirit between the TG members? Are there informal control structures? **Informal sanctions** In the case of disapproval of non-compliance by the TG's environment, does the TG try to correct it in some way? Will the members of the TG, or its environment, react negatevely to non-compliance through social sanctions, like excluding or expelling from the group or loss of respect or status? Are there other informal sanctions that could be imposed?	
CONTROL DIMENSIONS	
T6 Informal report probability	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
Is the TG inclined to report non-compliance to the authorities? Is it generally known to which authority non-compliance can be reported? Were measures taken to enlarge the approachability of the authorities (*e.g.* complaint desk, telephone number to report non-compliance)?	

QUESTION	ANSWER
T7 Probability of being inspected	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
What is the objective chance of being checked (control density)? How serious does the TG estimate this chance to be? What does the subjective chance of being checked mainly depend on?	
T8 Detection probability	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
Administrative checks Is there a full administrative check; are all data checked? How difficult will it be to detect non-compliance: must inspectors be (financial) experts to detect fraud? Can travel documents, transport forms, etc. be easily falsified? Can life be made more difficult for inspectors because of a lack of models of documents or standard forms? **Physical checks** Is it easy or difficult for inspectors to detect non-compliance? What are the nature and quality of the used inspection methods? Can non-compliance be detected with difficulty or easily because they are place and/or time-bound?	
T9 Selectivity	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
Will there be a relatively higher detection level in the case of selective checks instead of non-selective checks? Do offenders have the feeling that they are checked more often than the ones that comply?	
SANCTION DIMENSIONS	
T10 Sanction probability	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
How great is the chance that a penalty will be imposed after detection of non-compliance, or that there will be an informal correction? How large does the TG estimate this chance to be? Is it difficult to prove non-compliance? Do offenders have a high estimate of the chance to be acquitted in court?	
T11 Sanction severity	**Score: ❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5**
Formal level of the sanction Is the TG aware of the nature and level of the sanction in the case of non-compliance? Does the TG perceive this sanction as being high? Does the sanction take into account the financial capacity of the offender? What is the speed with which the sanction is imposed? **Immaterial costs** Do potential offenders perceive the fact that they will be prosecuted (in case of penal law) as more unpleasant than the actual sanction? Does the execution of the sanction cause supplementary disadvantages for the offender?	

Source: Ministry of Justice of the Netherlands and the Erasmus University, Netherlands (2001)

1.2.5 Phasing-in the regulatory requirements to prevent implementation failures

Creating a phase-in model and adjusting the content of compliance assurance programmes on a time-line will allow inspectorate managers to best address strategic needs across all legislation being enforced and the need to prevent regulatory failures related to implementation. In general, it is not realistic to expect immediate implementation of any new regulatory requirement. Instead, in the framework of programming, realistic goals should be set with a series of phases and elements leading to full implementation. Thus compliance assurance can be presented as an evolving model, where each phase propels the compliance rate toward the usual desired value of 80 % or even more (100 % is not to be expected). Such a model helps inspectorates to understand how to adjust compliance assurance programmes as implementation of regulatory requirements advances, and the desirable rate of compliance is achieved.

Theoretically, a compliance assurance programme begins before the new regulatory requirement is adopted by the legislature, when enforceability is designed into the legislation through the involvement of the public and the regulated community. Time then should be allowed before the regulatory requirement becomes effective. During this start-up, the inspectorate will use communication tools of compliance assurance, *i.e.* will publicise the new requirement, and, as necessary, provide educational materials and technical assistance, to develop the regulatory community's capability to achieve compliance.

Starting on the effective date of a new regulatory requirement, inspection and enforcement will become the core activities of compliance assurance. The usual approach will be to focus at first on apparent or potential violators. Well-targeted communication about this effort should maximise deterrence and increase voluntary compliance within the entire regulated community. After the start-up time, compliance assistance activities are reduced to a level needed for ongoing inquiries from existing facilities and to help new facilities. Once the desired rate of compliance is achieved, enforcement also is reduced to a maintenance level.

CHAPTER 1.3
MAJOR INSTITUTIONAL ASPECTS OF COMPLIANCE ASSURANCE[6]

1.3.1 Need for a basic framework of democratic governance

Compliance assurance frequently involves many different groups, including government agencies at national, regional, and local level, citizens groups and non-government organisations, and industry associations. A key element in any well-functioning compliance assurance system is defining the roles and responsibilities of the various institutions[7] involved.

To function effectively, environmental enforcement institutions, as with any other government authorities, need a basic framework of democratic governance. Such a framework is characterised by:

- The rule of law;
- Respect and protection of basic human rights;
- Checks and balances between the executive, legislative, and judiciary branches;
- Auditing and accountability mechanisms to review government action;
- A degree of autonomy for local government;
- An independent (and active) civil society.

Respectively, the authorities involved in compliance assurance would need to:

- Be integrated in the policy and law-making process;
- Adopt measurable targets and indicators;
- Indicate clear responsibility for actions, and establishing responsibilities and accountability mechanisms;
- Introducing strategic compliance assurance and prioritising compliance assurance challenges;
- Strengthening horizontal (across central government) and vertical (between levels of government) coherence;
- Developing practices, procedures, and work instructions for the implementation of compliance assurance strategies;
- Monitoring and reporting publicly on progress or lack of progress with implementation of environmental policies and laws;
- Identifying and meeting training requirements for government officials and others.

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[6] See also UNEP (1996), Industry Environmental Compliance. UNEP, Paris.

[7] The notion of "institutions", since recently, is defined not only as organisations, but also the stakeholders who interact with them, the process by which they reach decisions, and the activities they undertake to implement their goals.

1.3.2 Role and mandate of environmental inspectorates

From an institutional point of view, environmental inspectorates are at the core of compliance assurance systems though the organisation of compliance assurance and, respectively, the role of inspectorates in the overall administrative structure vary widely. In some countries all inspection activities are carried out under the responsibility of the Ministry of Environment, whereas in other countries responsibilities are delegated to other authorities. Usually the responsibilities are also differentiated between national/federal, regional, and local level. To illustrate this, Annex 1-1 describes the diversity of compliance assurance systems and institutions in the member states of the European Union, acceding and candidate countries, and Norway[8].

In all cases there should be a clear division of responsibility between policy planning and policy implementation within the environmental sphere and a range of strong, legally defined powers and response mechanisms at the disposal of enforcement agencies. Irrespective of its position within the government, an inspectorate should have institutional autonomy, *i.e.* full authority to make independent and objective (free from political and other pressures) decisions on issues related to its core business (which is compliance checking). Compliance checking is a principal function of environmental inspectorates worldwide. Besides, an inspectorate might do all or some of the activities required for permitting, compliance promotion, and enforcement.

Whether or not to delegate environmental permitting to an inspectorate is an important decision that must be made by each country, taking account of specific goals and conditions. Opinions on this subject may be situated at extremes as Box 1-5 illustrates. To avoid conflict of interest, however, in transition economies it is advisable that permitting and inspection should not be assigned to the same sub-unit within the inspectorate's organisational structure.

Box 1-5. Different approaches in balancing permitting and inspection: Examples from the Netherlands and Denmark

Dutch approach: Permit preparation and enforcement should not be combined in one person

The Netherlands adopted quality standards for the operations of compliance assurance authorities. One of these standards says that no one person should be responsible for both the preparation of permits and for enforcement, even when not related to the same installation. Although the competent authorities recognise that feedback from enforcement is needed for preparation of better permits and vice versa, these two types of work should at least not be combined in one person for the following reasons:

1. Enforcement is a different kind of work and does demand different skills and attitudes compared to preparation of permits. While the preparation of a permit demands technical and negotiating skills and a facilitating and cooperative attitude to the applicant, enforcement asks for straightforwardness and stubbornness and a fair, but non-negotiable judgement.
2. For the inspector the rule is the untouchable starting point of his job; for the permit maker the rule is the final outcome of study and negotiation. It is hard to look at the rule as something one should not bend or negotiate, if – be it in another case – it is the same employee's job to do exactly that.
3. There is always an applicant urging that the permit be ready and the law or the organisation has always established a maximum time span for the preparation. On the other hand: no offender will ever urge to speed the enforcement and as long as no offences are noticed the organisation will not have demands. An employee with both tasks will therefore always give priority to permitting. And so inevitably does the organisation as a whole.

[8] Two regional surveys, produced by the EAP Task Force Secretariat, introduce the design of compliance assurance systems in Eastern Europe, Caucasus, and Central Asia (www.oecd.org/env/eap). The BERCEN Network assessed such systems in South Eastern Europe and published the results in the Compiled Report on Legal Structures and Resources Currently Available to Environmental Protection Agencies and Inspectorates in South Eastern Europe (www.rec.org).

Danish approach: The individual making permits and inspections should be the same

Since 1974 a number of special types of industrial facilities in Denmark have been subject to regulation of their pollution through an environmental approval. During the first few years, the jobs of preparing the environmental approval and of supervising the facilities were divided between two authorities – counties and municipalities. The counties would prepare the environmental approvals, and the municipalities would be in charge of the supervision. Later, the legislation was changed so that the same authority would prepare environmental approvals and be in charge of the supervision of the same business. The counties were responsible for the ”heavy”, particularly polluting businesses, and the municipalities were in charge of the ”light”, particularly polluting businesses.

During the first couple of years, the jobs were done in two groups – a supervising group with responsibility for supervising the businesses, and an environmental approval group with the responsibility for issuing the environmental approvals. After about two years, this structure was reviewed in the light of the recognition that there was room for improvement of the co-operation with the businesses and efficient use of the resources. At present, one first caseworker and one second caseworker from the competent authority is assigned to each facility. The first caseworker was and is the main contact with the business. The first caseworker prepares the environmental approval and is responsible for the supervision of the business. The second caseworker is a ”sparring partner” for the first caseworker as far as both the preparation of the environmental approval and the supervision are concerned.

The advantages of this organisation are that:

1. The caseworker acquires a thorough knowledge of the environmental problems of the business and is able to co-ordinate ”environmental approval visits” with actual so-called periodic supervision visits;
2. There is a better chance of establishing a relation of mutual confidence between the business and the authorities, since the business refers to only one person who is in charge of both approval and supervision;
3. The risk of having many different caseworkers and the consequent disadvantages is smaller;
4. In connection with the future role as an environmental guide for the business, the caseworker is able to cover questions related to both approval and supervision.

There is a risk that routine visits are postponed during periods where many approvals have to be issued. In practice, this is not a problem, as the environmental caseworker is often able to combine visits to the business for the preparation of an approval with an actual supervision visit. In other cases, the routine supervision visits can be made during periods when the environmental approval work is ”awaiting information”.

To be able to carry out the environmental work, *i.e.* both the preparation of environmental approvals and the implementation of environmental supervision, it is important that the employees are professionally ”up-to-date”. The following elements are considered important:

Relevant basic education (a department with several people with different theoretical backgrounds);

– Experience from employment in industry;

– Courses in the preparation of environmental approvals;

– Courses in the implementation of environmental visits;

– For new employees – a training period with an experienced colleague;

– Creation of networks with colleagues in other counties;

– Access to trade literature.

Source: IMPEL (2003), Abstracts of the Conference “IMPEL At Work”, IMPEL, Brussels.

Despite the fact that inspectorates belong to the executive branch, sometimes, they may have their own administrative law judges who provide an internal mechanism for enforcing administrative orders and appealing agency actions. An inspectorate may also supply the lawyers responsible for taking legal action against violators.

1.3.3 Decentralisation

Compliance assurance should be delegated to the lowest level where issues can be effectively managed; national level inspectorates should provide appropriate co-ordination and support to sub-national units.

A basic institutional issue of compliance assurance is to what extent to centralise responsibilities for enforcement at the national level or decentralise them at more local levels. There are advantages and disadvantages to both centralisation and decentralisation. A national presence in compliance assurance helps ensure that at least minimum environmental standards and requirements are met; that the system is consistent and fair throughout the country; and that national resources are available to support compliance assurance efforts. Involvement of sub-national authorities is important because they are closest to the actual environmental problems and best able to efficiently identify and correct them. Great geographic dispersion of regulated facilities provides another strong argument in favour of decentralisation.

Most enforcement systems in different countries are decentralised to take advantage of:

- Local knowledge of facilities and their operations;
- The greater resources available at the local level.

Despite this bias toward decentralisation, some programmes are centralised because of a clear need for national involvement, *e.g.* to handle transboundary pollution problems, or where local competition to create favourable conditions for industry may lead to lax enforcement at the local level, or where unique expertise concentrated at the national level is needed.

Box 1-6. Two extremes in the configuration of the inspection system

In exceptional cases, due to circumstances related to the nature of the country, the configuration of the inspection system might take one of two extremes:

Totally centralised system

The first is a totally centralised system where only one entity is responsible for setting inspection policies, plans, and implementation. This system is usually adopted in small countries where the regulated community is relatively small.

A totally centralised system is not appropriate in large countries with a large number of facilities since the inspection activities would require extensive human resources for field inspection. Moreover, the application of centralised systems in large countries would allocate less time to activities related to planning, setting priorities, performance evaluation, and feedback, which might affect the credibility of the inspection authority.

Highly decentralised system

The second is a highly decentralised system where the sub-national levels are responsible for setting inspection policies, plans and implementation based on the national regulatory framework. This approach is only possible when the political system itself is decentralised (*e.g.* in federal systems).

Source: UNEP (2004), Reference Handbook on Environmental Compliance and Enforcement in the Mediterranean Region, UNEP.

Roles and relationships between the national government and local governments can develop in many different ways, ranging from decentralisation or centralisation to various combinations of both approaches. The most common decentralisation levels are:

- Decentralisation of inspection implementation at the sub-national levels based on inspection plans set at the national level. This approach is based on the delegation of tasks;
- Decentralisation of both inspection planning and implementation activities based on policies set at the national level.

Due to the differences in social, cultural, political, and economic situation, it is hardly possible to identify a standard level of decentralisation of compliance assurance. This will rather follow the national administrative traditions, although considering a number of commonly applicable issues when designing the vertical structure of compliance assurance will be useful. These are:

- **Clear distribution of responsibilities.** The distribution of responsibilities should be based on such criteria as size of regulated facilities, complexity of activities, sectors and geographic location. The national authorities should take into consideration that sub-national units may find it difficult to exercise authority over large, powerful enterprises at the local level. Therefore, the national level inspectorate itself needs to inspect the largest polluters or be involved in their inspection. National support will also be required to help territorial branches or local public authorities resist pressure from industrial lobby and other interest groups;
- **Standardisation of inspection tools.** To ensure credibility of environmental inspectorate and not distort the level playing field through heterogeneous inspection enforcement, the national inspectorate should secure standardisation of methods used to assure compliance. This will include development of regulations, methodologies, inspection tools such as checklists, and standard reporting requirements;
- **Clear enforcement policy.** National level authorities will take the responsibility of developing a national enforcement policy. Such a policy sets the decision-making rules upon which appropriate enforcement procedures will be based taking into consideration the right of the regulatees to a clear justification for the implementation of a specific enforcement measure and guards against the misuse of enforcement powers. The rules should be clear and unambiguous, but also flexible to avoid paralysis due to over-legalistic management of the compliance assurance system;
- **Capacity building.** Capacity at different levels should be built to achieve a shared knowledge, understanding, and homogenous application of inspection methods and instruments. Capacity building activities should be tailored to the specific target group according to its nature or its responsibilities;
- **Quality control.** The performance of different sub-national units may be uneven. Therefore quality control procedures will be highly important for institutional development, administrative interventions, or modifications in the inspection approach;
- **Creation of co-ordination mechanisms.** The scope of these mechanisms can be quite large, including planning, reporting, information exchange, technical support, and meetings;
- **Financial support to sub-national units.** National authorities can provide funding to help implement sub-national compliance assurance programmes. This will contribute to minimising disparities between different sub-national units.

As an example of approaches used in shaping up the vertical relations within a compliance assurance system, see Annex 1-2, which introduces five major elements of environmental federalism in the United States. Further information on designing organisational structures can be found in Part 2 of the Toolkit.

A shift from a centralised to decentralised system should be gradual to ensure that lower-level authorities accumulate sufficient knowledge and practical experience, which often is a time consuming process. Decentralisation can be conducted by size of facility or sector. During the transition period, intensive training should be provided and quality control procedures put in place.

1.3.4 Partnerships with other governmental and non-governmental stakeholders

Several other government institutions have significant impact on the design and operation of compliance assurance programmes. The particular institutions and the nature of their impact will depend on the governmental infrastructure of each country.

Legislative institutions

The legislative institutions probably have the greatest impact on development of enforcement activities. They create the laws that define the environmental goals to be met, the authority and flexibility to meet those goals, and the level of funding. Legislative institutions can become involved in policy and implementation decisions by issuing amendments to laws that impose certain duties on the executive institutions. The legislative institution can impose deadlines that executive institutions must meet.

Agencies with jurisdiction in areas related to environmental management

Many government agencies may have authority in areas that affect or will be affected by environmental management. These include:

- Health-related agencies responsible for food safety, occupational health and safety, consumer products, pesticide use, etc.;
- Natural resource management agencies responsible for water, energy, minerals, forests, etc. (as development of these resources can significantly effect pollution abatement);
- Land-use planning agencies, responsible for community development, industrial siting, transportation, etc.;
- Agencies that regulate industry and commerce;
- Agricultural agencies;
- Criminal investigation and law enforcement agencies;
- Customs.

Competition or conflict between two government agencies because of overlapping authorities can dilute the impact of compliance assurance programmes. Conversely, constructive co-operation can strengthen both programmes through increased efficiency and by identifying gaps in the regulatory framework. Approaches to achieving integration among related agencies include:

- Integrating the responsible departments into one unit;
- Developing interagency agreements and memorandums of understanding that establish clear mechanisms and procedures for handling areas of overlapping authority and/or of a mutual interest;
- Ad hoc joint efforts such as joint research programmes;
- Formal review of each agency's proposals by the other;
- Review of proposals by reference;
- Establishing special councils that are independent of each agency;
- Establish an independent government entity or commission.

Police

Police and other government personnel involved in identifying and apprehending criminals can be a valuable resource for detecting violations of environmental laws. For instance, in the Netherlands, the local police serve as the inspection and enforcement arm of enforcement programmes. To serve in this role, the police must be appropriately trained, provided with the necessary sampling equipment, and have the technical support of environmental specialists as needed. The police are responsible for surveillance and, in the case of simple environmental crimes, investigation. They also play an important role in containing and fighting more serious environmental crimes, including organised environmental crime. Use of local police as inspectors has been very successful in some countries: the number of prosecutions has increased substantially in recent years, and the public image of the police has substantially improved.

Judicial institutions

In some countries (*e.g.* the United States) judicial institutions are responsible for interpreting the laws. They may also impose requirements on the executive institution, for example, by requiring that it use certain rulemaking procedures if it wants those rules to be upheld in court. Courts may provide a forum for taking enforcement action, for prosecution, and for enforcing administrative orders (if the court is so authorised). Courts can also play a significant role in assessing sanctions.

Non-governmental organisations and public interest groups

Citizens can play a major role in shaping and implementing environmental enforcement. With a stake in environmental quality, citizens may seek to influence environmental legislation and enforcement programmes through lobbying efforts. Usually, these efforts are co-ordinated by public interest groups. These groups may collect and publicise data on environmental quality and compliance levels in an effort to influence programme priorities. If monitoring data collected by the environmental agencies are made publicly available, these groups may track the data and, if the law allows, file citizen suits against the environmental agency for not doing its job, and/or against individual violators for violating the law.

Public interest groups also play an important role in disseminating information to regulated communities and to citizens who are concerned about environment. Citizens may also play an important role as environmental watchdogs, spotting violations occurring at a local level that may escape notice by enforcement officials. Public interest groups can be an important means of enlisting citizen involvement.

Industry associations

Industry or trade associations track and publicise developments that may affect their members. They may try to influence environmental legislation or programmes as they are being developed. They may also serve as valuable channels for disseminating information on requirements, methods of complying, and compliance activities. Their dissemination channels include newsletters, journals, databases, and conferences. Associations of firms that make pollution monitoring equipment or control devices have strong economic incentives to disseminate information about environmental requirements.

Associations of government officials, professional and technical societies and universities

These associations are usually non-government entities that provide a forum for government officials (*e.g.* mayors, governors) to work together in solving issues of mutual concern. Like industry associations, these groups track and publicise developments that may affect their members. These associations provide a resource for disseminating information and a forum for comment and recommendations concerning environmental management programmes.

Specialised professionals advise both government officials and the regulated communities on compliance issues. Their societies therefore have a strong incentive to track and disseminate information on regulatory developments. They may also try to influence regulatory decisions and compliance strategies they disagree with. Some universities are important centres for environmental professionals and may function much like the professional societies described above in supporting and influencing enforcement programmes.

Trade Unions and Workers' Councils

Enforcement actions can have substantial impact on workers. For example, workers are generally members of the local community and would benefit by the improved environmental quality that may result from enforcement actions. Conversely, enforcement actions that result in substantial process changes or shut down of an operation may result in some unemployment. Consequently, workers will have strong feelings and opinions in some enforcement situations. Most countries have associations or groups that represent the interests of workers. The participation of Workers' Councils or other groups that represent workers at a particular facility will be important to the success of enforcement actions at that facility. Trade unions or other organisations that represent workers at a regional or national level may become involved in development of requirements and policy for enforcement. Individual workers may also report violations by their facilities to authorities.

Insurance companies

In many OECD countries, citizens can sue industry for personal injury or property damage caused by certain types of environmentally related activities. In theory, insurance companies that end up paying the cost of the suit should have an incentive to educate their clients about environmental requirements and assist them in compliance. These companies are therefore a potential ally for government agencies.

1.3.5 Use of independent contractors to supplement government personnel

Private firms may be able to provide more faster and cost-effective services than government agencies. Enforcement officials may therefore contract some of their responsibilities to private firms. One issue in using contractors is ensuring the quality of their work.

For example, private companies have proven to be a valuable resource for inspection in the Netherlands during moments of personnel shortages and work backlogs. Clear agreements are made about how the activities are to be carried out and how violations will be reported and responded to. Any official action in response to a violation is taken by authorised government inspectors. This combined public/private approach has often been effective, and efficient, and can produce faster results than a solely public approach. Dutch government officials have been careful to provide adequate, competent leadership and to clearly define the "private" inspectors' authority.

National and regional enforcement programmes may find it beneficial to establish regional centres that offer specialised services such as training and technical assistance to provincial or local programmes. These centres can serve as a repository for specialised resources that might otherwise be unavailable to or unaffordable by more local programmes. Such centres can also serve as a forum for exchange of information and ideas about effective programmes, and can enhance co-operation and communication among different programmes.

1.3.6 Professional networks

Co-operation between authorities may lead to professional networks. This may be the case on an international basis, but also on a local, regional, or national basis. All over the world there are many examples. Each inspectorate will have a list of relations together with whom they work. This list may contain people in the environment sector on a local, regional, and national level, but also people in other sectors that are closely related to environment, like the health and safety sector, customs, police, fire-brigade, etc. In order for these networks and relationships to live and last, it is important to involve as many staff as possible, not only by informing them about the discussions and outcomes, but also by letting them play a part in it. Networks that are dependent on the efforts of some people only, are generally vulnerable.

Networks in an international or national context very often originate from contacts (coincidental or deliberate) between high level officials. Regional and local networks often originate from contacts between the workers at the basis of the organisation. In both cases the other level will have to be involved in the network. In the case of local and regional networks the time for networking by the inspectors has to be agreed on by the inspectorate managers. It may also be useful or desired to formalise the network contact. Depending on the local or regional situation this could be done in conventions, declarations, memorandums of understanding, etc., aiming at co-operation and signed between the responsible authorities. But even without these documents, either on a personal basis or on a professional basis between inspectorates, there can be co-operation, which includes the exchange of information.

Aspects discussed in international networks by inspectorate managers generally have a more abstract scope. The product of these abstract discussions however needs to be distributed and implemented in the inspection organisations. This will need further elaboration of the ideas into practical tools and guidelines for the people at the basis of the organisation. Involvement of staff at this level will be necessary. However practical advice will help to support their managers in better decision-making.

In the worldwide context there is the INECE-network (http://www.inece.org). On a "regional scale", meaning world-regions, there is the Regulatory Environmental Programme Implementation Network (formerly NISECEN) for the region of Eastern Europe, Caucasus, and Central Asia (http://www.oecd.org/env/eap); the IMPEL-network (http://europa.eu.int/comm/environment/impel/) for all (future) countries of the European Union; the BERCEN network (http://www.rec.org/REC/Programmes/REREP/bercen/) for the Balkans; ASPA-INECE for Asia and the Pacific area; the North American Commission for Environmental Co-operation, (CEC) (http://www.cec.org); and the Central American Commission of Sustainable Development, (CCAD) (http://www.sgsica.org/).

1.3.7 Minimum criteria for compliance assurance institutions

Quality of environmental compliance assurance activities is of growing interest in many countries. Most of the initiatives to improve this quality are supported by identification of certain "quality standards" for design and functioning of an environmental enforcement authority (also referred to as "minimum criteria"). Such quality standards concern both programmatic aspects and procedures employed by the inspectorate. They are recognised to be crucial not only in improving compliance assurance results, but also in supporting transparency, accountability, effectiveness, and efficiency of environmental inspectorates as public institutions on the national, regional, or local level.

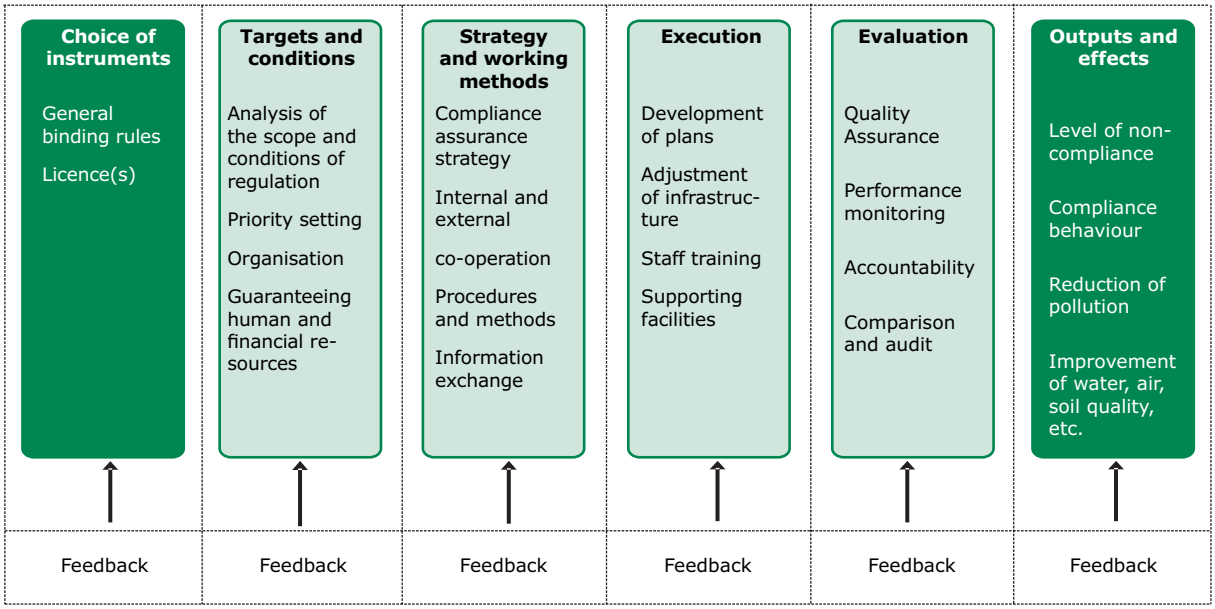
In an international context, trade globalisation increases the pressure for effective environmental enforcement systems and institutions among trading partners seeking a level playing field hence the need not only for increased harmonisation of environmental requirements but also for international minimum criteria for compliance assurance. For example, such an approach is taken in

the countries of the European Union, where community environmental laws exist and where recommendations were provided by the European Parliament to the member states on the organisation of compliance assurance (see Annex 1-3). In Northern America, the mutual commitment among Canada, the United States, and Mexico to enforce environmental laws was central to the passage of the North America Free Trade Agreement (NAFTA). This commitment was buttressed by the creation of the Commission for Environmental Co-operation[9], which has unique mechanisms for addressing disputes and citizen complaints about inadequate environmental enforcement by the NAFTA parties.

Well-formulated quality standards acknowledge that the process of compliance assurance consists of activities that need to be carried out demonstrably, consecutively, and coherently. These activities should be embedded in the inspectorates' organisation and be based on transparent procedures, where accountability for reaching concrete targets is a key requirement.

Besides governing the design of compliance assurance systems and institutes, the minimum criteria will reflect the process of inspection and enforcement at each of its phases. Figure 1-2 visualises this process where environmental licensing (permitting) only gives input to, but it is not a part of, this process as such.

Figure 1-2. Key elements in organising an environmental inspection and enforcement process



Source: VROM (2002), *Minimum Quality Standards for Environmental Inspectorates in the Netherlands.*

Quality standards will be needed and applicable whatever accents an inspectorate puts on its activities – inspection of industrial facilities, controlling hazardous substances or waste flows, dealing with non-point sources of pollution, or any other kinds of situations that are in breach of environmental requirements. If properly applied, following all the steps in the inspection and enforcement process, the quality standards will lead to a better compliance and positive effects on the environmental quality.

[9] www.cec.org

Phase 1 criteria: Formulating targets and meeting organisational pre-conditions

At a starting point, the inspectorate sets targets for compliance, which are measurable and related to a well-assessed initial situation. A compliance and risk precedes target setting. The analysis might include such elements as gathering of data on the administrative-territorial unit of responsibility, the companies to be inspected and other regulatees, key target groups, as well as legislation that is applicable to different target groups. Environmental relevance to the economic activities and compliance behaviour of companies and citizens are taken into account. The analysis is supplemented with priority issues mentioned by other (higher) authorities. As a next step, the inspectorate has to be organised in a way that its targets can be achieved at least cost. Finally, the responsible politicians have to make available sufficient human and other resources.

Phase 2 criteria: Developing strategies and adapting working methods

Inspectorates develop written decision-making procedures to address their inspection and enforcement strategy and working methods. Subjects that can be reflected are: co-operation and information exchange between inspecting organisations and other authorities, the character and form of inspection, and the influence of the offender's behaviour on the inspection frequency. A strategy is developed to show the path of administrative and/or criminal follow-up upon non-compliance, which must be strict and unambiguous (in the case of non-compliance, there can be no discussion about the content of the legal norms).

Phase 3 criteria: Executing strategies

The inspection and enforcement strategy and the work process are brought into practice. For this purpose, the inspectorate uses an inspection and enforcement programme or inspection plan (drawn up annually), the necessary number of well-trained inspectors, and all the possibilities that the legislation offers to carry out the inspection activities.

Phase 4 criteria: Evaluating the achievement of targets

Based on the measurements and records that were carried out, the achievement of targets, set in the inspection and enforcement strategy, is monitored in order to conclude the effect that inspection and enforcement have actually had. At the same time, the overall inspection and enforcement process is assessed for its quality. There is feedback on the results to the policy makers, the license writers, and other relevant inspecting organisations and authorities. The responsible politicians show accountability about the input of resources and the achieved results. After outlining trends, expected results in compliance behaviour in the long(er) term are defined. Based on these new targets, the strategy and/or the working process is/are possibly adjusted. In such a way the cycle of the inspection and enforcement is closed.

A practical example: Quality standards in the Netherlands

The Netherlands' environmental inspectorate has introduced nineteen quality standards, alongside with guidelines on how to apply them in practice. To better reflect different phases of an inspection and enforcement process, these standards are classified in four groups. The entire set of quality standards (Table 1-2) has a dichotomy towards minimum elements and optional elements. If the inspectorate fulfils all minimum elements, the quality standard is met.

In Table 1-2, the elaboration of these minimum elements is preceded by the word construction: "quality standard at least includes: ..." or a comparable text. In the case of several standards, optional elements are mentioned. These elements contain suggestions for improvements that can influence the quality of inspection and facilitate the implementation of the minimum elements. However, they are not mandatory. In the elaboration the optional elements are always preceded by the construction: "Furthermore (among other things) managers could consider:...".

Table 1-2. Overview of minimum quality standards for environmental inspectorates in the Netherlands.

Quality standard	Minimum and optional elements
GROUP 1. TARGETS AND CONDITIONS OF ACTIVITY	
1.1 Problem analysis: The inspectorate acts on the basis of an analysis of the environmental problems, the effects of non-compliance, and the expected rate of non-compliance.	**The analysis at least covers:** – The scope of inspectorate's responsibilities, respective regulatory framework, and identification/profiling of the regulated community; – Environmental impact exercised by the regulatees's and possible environmental problems linked to their activities; – Comparative effects of potential and actual offences on the environment and compliance behaviour of (other) regulatees; – The likelihood of offences. **Furthermore (amongst other things) managers could consider:** – To use a GIS-based representation of environmental risks.
1.2 Well-articulated priorities and measurable targets: The inspectorate acts on the basis of clear priorities for compliance assurance, formally established compliance targets per policy area, and measurable indicators of performance.	The set of priorities and targets at least include: – Clear priorities, taking into account the problem analysis (1.1) and the evaluations (4.3); – Identification and description of the inspection and enforcement target(s) per policy area, preferably reflected in policy documents; – Measurable indicators for all targets and arrangements on monitoring of those indicators. **Furthermore (amongst other things) managers could consider:** – To make transparent the used methodology for prioritisation; – To formulate targets (and indicators), where possible, in terms of compliance behaviour (rates of compliance) and environmental outcomes (*e.g.* a reduction target for certain polluters).
1.3 Guaranteeing human and financial resources: The inspectorate correlates its human and financial resources with politically agreed targets, and acts based on a budget that guarantees sufficient means to achieve the targets.	**Guaranteeing human and financial resources at least includes:** – Thorough assessment of the human, material, and financial resources required to carry out their functions and achieve policy targets; – A transparent and robust system to correlate inputs (in particular, staff requirements) with outputs and outcomes (policy targets); this helps justify the financing needs and shows effectiveness in using public funds; – Well-developed and applied budget management rules, in particular as concerns procurement of external services and out-sourcing some compliance assurance functions (if applicable).
1.4 Organisational conditions: The inspectorate makes necessary organisational arrangements and defines its structure according to compliance assurance targets.	**The organisational arrangements at least include:** – A structure that matches the priority areas and available resources; – Conditions to motivate integrity, including a separation of licensing and inspection and enforcement activities at staff level; – A modern corporate culture, management style, and leadership; – Proper human resource management, including rewarding and training; – A staff rotation system for companies that are frequently visited to avoid building too strong ties between an inspector and a company; – Legally defined and documented powers, tasks, and responsibilities; **Furthermore (amongst other things) managers could consider:** – A separation of licensing activities and inspection and enforcement activities at organisation level.

Quality standard	Minimum and optional elements
GROUP 2. STRATEGY AND WORKING METHODS	
2.1 Compliance strategy: The inspectorate acts on the basis of a compliance strategy, containing the instruments with which compliance should be reached and the role of inspection and enforcement within that.	**The compliance strategy at least includes:** an inspection and enforcement strategy, consisting of: – An inspection strategy; – A sanction strategy; – A condoning strategy; – A voluntary compliance promotion strategy and a communication strategy with the general public.
2.2 Inspection strategy: The inspectorate develops and implements an inspection strategy, based on various types of inspection and respective procedural arrangements for each of them.	**The inspection strategy at least includes:** – Clear requirement and procedures to prepare and conduct routine (planned) inspections; – Solidly justified minimum frequency of inspection; – Conditions and procedures for carrying out announced or unannounced site visits in response to accidents, complaints, or changes in the permits; – The inspection of administrations and documents and the on-site inspection to check compliance with environmental requirements; – Investigation and verification of self-monitoring arrangements; – Feedback to the inspected company and reporting of inspection results. **Furthermore (amongst other things) managers could consider:** – Carrying out in-depth investigation in the form of audits.
2.3 Sanction strategy: The inspectorate acts on the basis of a sanction strategy, containing the basic approach for administrative and criminal follow-up in case of non-compliance.	**The sanction strategy at least includes:** – A coherent administrative approach towards offenders of environmental legislation, including co-ordination of actions between executive and judicial branches of the government; – Adequate remedies to sanction non-compliance and an adequate path of enforcement (administrative or criminal), proportionate to the violation; – Escalation of sanction and severe reaction in case of continued non-compliance; – Provisions for appeal. **Furthermore (amongst other things) managers could consider:** – A transparent prosecution policy.
2.4 Condoning strategy: The inspectorate acts on the basis of a strategy, which describes in which situation non-compliance is (temporally) tolerated and sanctions are not imposed.	**The condoning strategy at least includes:** – An explicit description of the terminology, contents, and procedure of the condoning policy.

Quality standard	Minimum and optional elements
2.5 Internal and external co-operation arrangements: In the preparation and execution of its compliance assurance tasks the inspectorate takes care of internal and external tuning.	**The internal tuning at least includes:** – Tuning with the licensing authority, including checking the enforceability of the license (permit) conditions and feedback on compliance with them; – Tuning with other relevant departments and people inside the organisation, and a proper internal communication, horizontally and vertically. **The external tuning at least includes:** – Concrete mechanism of co-operation with other relevant organisations involved in environmental inspection and enforcement; – Arrangements to avoid duplication and overlaps of functions, including formal agreements of co-operation; – Co-ordination of actions where more than one organisation are competent to inspect or enforce consecutively (chain control). **Furthermore (amongst other things) managers could consider:** – Joint execution of inspections with other authorities.
2.6 Protocols and working instructions: The inspectorate acts on the basis of protocols for internal and external tuning on the preparation and execution of its tasks.	**The protocols at least include:** – Development of concrete procedures (work instructions) for elements mentioned in standards 2.1–2.5; **Furthermore (amongst other things) managers could consider:** – Development of comprehensive inspection and enforcement handbooks, wherever meaningful; – Development of targeted inspection plans, *e.g.* per area of concern, corporation, or company.
2.7 Protocols for communication, information management, information control, and information exchange: The inspectorate acts on the basis of protocols for communication, information management, and information exchange on inspection results, announced or imposed sanctions and condoning decisions.	**The protocols at least include:** – Public disclosure of inspection results, sanctions, and condoning decisions; – Information systems to manage data about regulatees, inspection results, sanctions, and condoning decisions; – The operational information exchange internally and with other inspection and enforcement organisations of inspection results, sanctions, and condoning decisions.
GROUP 3. EXECUTION	
3.1 Inspection and enforcement programmes: The inspectorate acts on the basis of an inspection and enforcement programme, in which it determines for a certain period of time how it will execute its mandate to which the internal organisation is or has been adjusted.	**Inspection and enforcement programmes at least include:** – A strict coherence/connection with priorities and targets, as well as minimum frequency of inspection ; – Specification of geographic areas covered, time frame, and identification of the regulated community; – Description of the actual potential and resources to be used for the execution of the compliance assurance programme; – Procedures to adjust the work programme, if needed; – The elaboration of the inspection and enforcement programme in work plans for all departments of the organisation. **Furthermore (amongst other things) managers could consider:** – The elaboration of the inspection and enforcement programme in annual work plans at the level of individual staff members.

Quality standard	Minimum and optional elements
3.2 Adjustment of the size of inspectorate: The inspectorate has sufficient human resources, and/or financial resources to hire staff specifically for the execution of inspection and enforcement tasks.	**Sufficient inspection and enforcement capacity at least includes:** – Insight into the human capacity that is actually available; – Sufficient staff number to carry out the inspection and enforcement programme mentioned under standard 3.1
3.3 Quality of inspection and enforcement capacity: The inspectorate has sufficient expertise, and/or financial resources to hire expertise, for the execution of inspection and enforcement tasks and stimulates the development of knowledge and skills.	**Sufficient expertise at least includes:** – Insight into the necessary expertise in terms of knowledge, skills, and attitude; – A training plan, including the determination of time and financial resources needed to execute the plan. **Furthermore (amongst other things) managers could consider:** – Determination of and commitment to the necessary expertise in job descriptions and/or in a staff training plan; – Periodical checks of the desired level of expertise.
3.4 Facilities supporting execution: The inspectorate has sufficient quantitative and qualitative resources that make it possible to execute its tasks.	**Facilities supporting execution at least include:** – An automated system for planning, programming and progress monitoring of the inspection, and enforcement task; – Facilities and materials that are needed for the execution of the inspection and enforcement task, from the point of view of information, environment, legal provisions, and administration; – A good level of maintenance and calibration of the equipment and instruments being used.
GROUP 4. EVALUATION	
4.1 Quality assurance: The inspectorate establishes an internal quality control and assurance system.	**The system of quality assurance at least includes:** – A process description of the way in which inspectors have to carry out their work, at a minimum as specified in standards 2.6 and 2.7; – A transparent system to check internally whether the work has been executed in conformity with targets and procedures, at periodic intervals; – An evaluation and feedback system to facilitate the adjustment of targets and procedures (process descriptions). **Furthermore (amongst other things) managers could consider:** – Designating a quality assurance co-ordinator/applying official quality care system; – An external audit and certification of the procedures and management system.
4.2 Performance monitoring: The inspectorate acts on the basis of systematic monitoring of the inspection and enforcement process and its results and effects.	**Monitoring at least includes:** – Personal indicators belonging to targets and/or priorities; – The monitoring of the results of the inspection and enforcement activities. **Furthermore (amongst other things) managers could consider:** – Linking the monitoring to the quality assurance process.

Quality standard	Minimum and optional elements
4.3 Accountability of efforts, performance, and results: The inspectorate has a system of internal and external accountability about the inspection and enforcement process and its results and effects.	**The accountability at least includes:** – A report on the results of compliance assurance activities; – A report on the agreements made with other inspecting organisations; – An evaluation of the inspection and enforcement results leading to improvements in the policy process, the regulatory cycle, and the inspection and enforcement policy; – Feedback on the results and recommendations. **Furthermore (amongst other things) managers could consider:** – A (special) version of the accountability report for the public.
4.4 Comparison and auditing: The inspectorate develops a system to externally compare, test, and judge its efforts, its organisation, and the results of its inspection and enforcement.	**(Amongst other things) managers could consider:** – The inspectorate compares itself with similar organisations; – Benchmarking as a specific task for one of the staff members inside the inspectorate.

Source: VROM (2002), *Minimum Quality Standards for Environmental Inspectorates in the Netherlands*, VROM, The Hague.

As one can notice, the above-described quality standards are mostly focussed on input (effort) or throughput (process) as applied to inspectorates' activity. The reason for this is twofold:

1. The standards must be applicable for all kinds of environmental inspection and enforcement tasks and organisations. Basically, the processes and steps concerning inspection and enforcement are equal for all inspection organisations;
2. The quality of inspection and enforcement in terms of output (*e.g.* changes in the state of environment due to inspectorates' activity) is more difficult to be made operational and therefore measurable.

However, it should be realised that a good quality of the organisation and of the execution of the inspection and enforcement process does not automatically guarantee the quality of the inspection and enforcement activities as such. It is therefore important that output criteria are also described. Internationally, research is being conducted to define such criteria.

ANNEX 1-1. SHORT OVERVIEW OF THE ORGANISATION OF INSPECTIONS IN THE EU MEMBER STATES, NORWAY, AND ACCEDING AND CANDIDATE COUNTRIES[10]

Austria

Austria has no central inspection system. The licensing authorities in the Länder are also responsible for inspection activities. At a national level ultimate responsibility for co-ordinating inspection and enforcement rests with the Federal Ministry of Agriculture, Forestry, Environment and Water, while responsibility for implementation rests primarily with the Provinces (except in the case of waste). In relation to the implementation of inspection, different agencies are involved at national, regional, sub-regional, and local levels and responsibilities are different for different sectors and laws. Responsibilities differ between regions. There are changes planned that will result in more responsibilities being devolved to local authorities.

Belgium

Belgium is a federal state based on three regions defined by economic considerations: the Flemish Region, the Brussels Capital Region, and the Walloon Region. The regional governments are each responsible for passing and implementing their own environmental legislation with the exception of legislation for transit of waste through Belgium, for setting of product norms, and for matters concerning ionising radiation and nuclear waste management. The role of the regions, provinces, and municipalities in compliance checking and enforcement varies between the regions.

Brussels Capital Region

The Brussels Institute for Management of the Environment (BIME) plays a key role for inspections in the Brussels Capital Region. It is responsible for the control of air, water and soil pollution, noise nuisance, and disposal of all types of waste (except nuclear waste). The BIME and the 19 local authorities of the Brussels region each have responsibility for inspection of all classes of installation: the BIME throughout the region, and local authorities – within their own jurisdiction. The BIME is responsible for issuing permits for Class Ia and Ib installations (*i.e.* installations included in Annex 1 of the EU Directive on Integrated Pollution Prevention and Control[11]). Local authorities are separately responsible for permitting installations in Class II. These are installations that require neither environmental impact assessment nor environmental report. They are also responsible for issuing "declarations" for Class III installations, which are the smaller installations.

Flanders

In Flanders the Environment Inspection Section (EIS) is the enforcement agency for environmental hygiene legislation in the Flemish Region and is part of the Environment, Nature, Land, and Water Management Administration. The Environment Inspection Section has a conventional vertical structure: the Chief Inspectorate in Brussels and five local services based in the main towns of the Flemish provinces. Each service is managed by a head of service who is appointed as hierarchical superior in accordance with civil service status. The Head of Section is responsible for the overall organisation of each service. The Chief Inspectorate initiates and supervises the management of the inspections and investigation activities. Furthermore, it is responsible for the preparation, formulation, and evaluation of policy and for ensuring logistical support for the service. The local services are responsible for carrying out specific inspection tasks, implementing measures, keeping company files up-to-date, and providing policy-makers with feedback on experience gathered in the field.

[10] Annex 1-1 is based on materials presented by the IMPEL members at the conference "IMPEL at Work" (2003).

[11] Commonly referred to as "IPPC installations".

In addition to the vertical structure, a horizontal structure has also been set up in the form of working groups for each environmental compartment. Each working group is composed of five members (one representative from each local service) and a representative from the Chief Inspectorate who acts as the working group moderator (project leader).

Walloon Region

In the Walloon Region, environmental inspection is carried out by the Division of the Environmental Police (DPE) of the General Directorate for Natural Resources and Environment of the Ministry of the Walloon Region. The DPE is organised as a central service providing logistic, administrative, and legal support and co-ordinating four external directorates. Other organisations involved in inspections are the Judicial Police as well as the Water Division and Division of Nature and Forests.

Bulgaria

The Ministry of Environment and Water (MoEW) is the main ministry responsible for inspection, although the Ministry of Health supervises bathing and drinking water inspection. MoEW has a number of regional bodies, including:

- The 15 regional inspectorates of environment (RIE) with a considerable degree of operational autonomy,
- Four recently-established river basin directorates which will be gradually taking over some of the water pollution control responsibilities from the 15 regions;
- A new department within the Executive Environment Agency, which is to have permit responsibilities for IPPC installations;
- Three national park directorates with nature protection responsibilities.

The RIE must give their consent to any permit drafted for an operation in their region, whether by the Ministry, a basin directorate, or the new department in the Executive Environment Agency.

RIE have laboratories all of which are equipped for air and water analyses and some of which can also undertake soil or radiological analyses.

Cyprus

Inspection responsibilities are shared by the Ministry of Agriculture, Natural resources, and Environment (MANRE) and the Ministry of Labour and Social Insurance (MLSI) as follows:

- Environment Service of MANRE with responsibilities in water and waste,
- Department of Labour Inspectorate (previously factories inspectorate) of MLSI with responsibilities for air.

Both ministries are also responsible for permitting and monitoring; MANRE additionally evaluates EIA reports. For permitting, a technical advisory committee holds hearings where all stakeholders participate. They advise the relevant issuing ministry on operating conditions and emission limits.

Other bodies also play an important environmental management role:

- The Ministry of Health deals with all aspects of ground, drinking, and bathing water quality,
- The Ministry of the Interior (in its role as town planning ministry) has responsibilities for landfill management;
- The Ministry of Commerce, Tourism and Industry has industry and energy efficiency as well as some waste responsibilities (batteries, packaging).
- Additionally, local authorities have broad management and implementation powers.

Czech Republic

The Ministry of Environment is responsible for the implementation of EC environmental law. It directs the tasks of the inspectorates, responsible for control and enforcement. A headquarters inspectorate provides methodological direction and supervision of regional inspectorates

Several other institutions also play a role, including an IPPC Agency, the inspections of other ministries (Agriculture), local government, etc. Co-operation among the institutions exists, some of it required by law, other on an ad hoc basis.

Denmark

Environmental regulation in Denmark is decentralised. At the policy level, the Ministry of Environment and Energy is responsible for environmental policy and for establishing the legal framework in Acts. The Danish Environmental Protection Agency issues orders and provides guidelines on how to implement the Acts at an operational level. The counties (14) and the municipalities (274) are the main players and are responsible for issuing licenses, and undertaking inspections and environmental enforcement.

Enforcement in Denmark is undertaken by the provinces (counties) and municipalities. In the legislation it is clearly defined which installations fall under whose responsibility. Principally installations which may have an environmental impact on water systems situated in more than one municipality fall under the responsibility of a county. The same principle holds for air emissions. Also, installations that are owned by municipalities are under the responsibility of a county.

Total compliance checking and enforcement of about one sixth of the installations is done by the counties. The other installations are taken care of by the municipalities. Municipalities and counties are not subordinate to each other, but have the same level of authority.

The state (the Danish Environment Protection Agency) does not have an inspectorate.

Estonia

In Estonia the Environment Inspectorate is concerned with inspection and enforcement. It employs approximately 210 staff at national level and in seven regional units, who are involved in controlled installation work and in forest and nature protection. Laboratories are independent businesses. Permitting is the responsibility of the county (15) authorities. The inspectorates provide positions and opinions on permits.

Finland

The Ministry of Environment is responsible for preparing laws and regulations on environmental protection, the development of environmental policy, and supervising actions taken by authorities at the regional and local levels. Environmental permitting and the compliance monitoring of permits is decentralized: environmental permits are issued by the Environmental Permitting Authorities (3), the Regional Environmental Centres (13), and the Municipal Environment Authorities (414); compliance monitoring takes place through the Regional Environmental Centres (13) and the Municipal Environment Authorities (414).

As part of the environmental permits, the authorities stipulate how an operator is to monitor emissions and report the results. In large installations, compliance monitoring focuses heavily on the quality and operation of self-monitoring and reporting systems as well as on the assessment report produced by the operator. In the case of medium-sized and small installation sites, inspections concentrate more on assessing the overall compliance of the operation. The compliance monitoring authorities may take coercive measures such as imposing a fine or even suspending an installation's operations. If such actions do not result in rectification of an unlawful situation, the authorities report the offence to the police for preliminary investigation. The public prosecutor may take the case to court. The Finnish Environment Institute supervises transboundary transportation of waste.

France

The Ministry of Ecology and Sustainable Development (MEDD) has overall responsibility for inspection and enforcement, which is exercised at National level through its Directorate for Risk and Pollution Prevention (DPPR). At regional level, the main executive responsibility for inspection rests with the Regional Department of Industry, Research and Environment (DRIRE), although the Department of Veterinary Services (DDSV) is responsible for inspection of agro-food establishments and the Technical Department of the Police Prefecture of Paris (STIIIC) for inspection in Paris. At "département" (sub-regional) level, some inspection responsibilities (primarily relating to landfill sites) are discharged by three département directorates, while the département Water Police Service covers the Urban Waste Water Directive.

Responsibility for permitting rests with the departmental prefects supported by the services of the inspection of classified installations (DRIRE, DDSV, STIIIC).

Germany

In Germany responsibilities for inspections are devolved to the 16 states known as "Länder". The administrative structures and responsibilities for compliance checking and enforcement varies among the Länder. Most commonly within the Länder there is a Ministry of Environment at the top level, a Bezirksregierung at the middle level and Kreise and Staatliche Umweltämter at the lower level. The Bezirksregierung is responsible for the quality control of lower governments. The Staatlichen Umweltämter are responsible for compliance checking and enforcement of large, medium and small size installations whereas the Kreise are often only responsible for the small size installations in the fields of waste and waste water.

Greece

Overall inspection responsibility rests with the Ministry for the Environment, Physical Planning, and Public Works (YPEHODE), but many other ministries are also involved as central authorities at national level. Bodies involved at a regional level include Special Body of Environmental Protection Controllers (SBEPC), Bodies for the Control of Environmental Quality (BCQE), YPEHODE Regional Environmental and Physical Planning Unit, regional services of YPEHODE and other ministries, regional prefecture authorities, and prefectural units for environment and for health.

A new legislation has been introduced to set up the Special Environmental Inspection Service (SENVIS). This will take over the responsibilities of a number of the existing agencies (*e.g.* SBEPC) and work with others.

Hungary

The national inspectorate is described as a ministerial office working under the authority of the minister. Its main functions include appeals on decisions of Regional Environment Inspectorates (REI) data and reports on activities, evaluation of the effectiveness of implementation procedures, and co-operation with other relevant organisations.

The bodies responsible for most activities in the environment field are the 12 REI (covering groups of counties), whose responsibilities will include all major environment sectors once the merger of environmental pollution and water management is complete (except Seveso). REI each have a laboratory responsible for all sample testing in their region which also provide expert opinions on the evolution of environmental conditions. Both national and regional levels are in turn supervised and co-ordinated by the MoEW.

The annual work programmes of the 12 REI are more than inspection and enforcement plans, since their responsibilities are much wider but include EIA (taken as a permitting process in Hungary), permitting, participation in monitoring, work on pollution sites, support of local authorities, co-operation with other relevant authorities. However, inspection plans set the number of visits to be undertaken and controlled installations to be checked. Each REI knows the figure of controlled installations inside their region. But the meaning of "controlled installations" may differ from inspectorate to inspectorate.

Procedures and responsibilities are extensively described in regulation, for example setting intervals for routine inspections by authority, or purpose, or leaving them free to determine their own. (The extent and strictness of regulation was identified as a bottleneck in both assessments.)

Ireland

The key inspecting authority is the Environmental Protection Agency (EPA). As well as having specific responsibilities in relation to IPPC, waste management, volatile organic compounds (petroleum) and groundwater protection, the EPA oversees the activities of local authorities at a sub-regional level (counties and cities) in other areas (covering most non-IPPC installations). Responsibilities of the EPA include licensing and permitting as well as inspection and enforcement.

The local authorities issue single-medium licenses to smaller industries involving emissions to air, wastewater discharges, and waste disposal. The local authorities are also largely responsible for compliance checking and enforcement.

The Occupational Health and Safety Authority checks installations that constitute a potential risk for major accidents.

Italy

Several administrations cover an inspection role in Italy. Depending on the regional laws of each environmental sector (air, water, waste, soil, Seveso and IPPC), either the regional or provincial administrations issue permits and are, in most of the cases, responsible for the planning of ordinary inspections together with the Regional Agencies for the Protection of the Environment (ARPA).

Generally the routing site visits are fulfilled by the ARPAs, while the non-routing site visits due to either serious environmental complaints, environmental accidents, incidents, and occurrences of non-compliance are carried out by the Carabinieri Corps for Environmental Protection, the Provincial Police (on request of the provincial authorities), the Financial Guards, and the State Forestry Corps, together with the ARPAs who provide technical support.

But in most of the cases the Police Authorities (Provincial Police, Carabinieri Corps, Forestry Corps and Financial Guards) are in charge of investigating and/or identifying environmental crimes such as for example illegal waste business, illegal water discharges, etc.

APAT, the Agency for Environmental Protection and Technical Services (former ANPA) executes inspections, controls, and monitoring for Seveso (together with the Ministry of Environment, the National Body of Firemen, ISPESL, ARPAs), for nuclear matters and for the competencies assigned to the Agency. In some regions, due to institutional competencies, the State Forestry Corps realises routine site visits while the ARPA provides technical support on sampling and analysis.

Latvia

The national Environment State Inspectorate and eight regional environment boards are responsible for inspection and enforcement under the supervision of the Ministry of Environment and Regional Development. The Environment State Inspectorate and regional environment boards are separate entities; they are nevertheless jointly responsible for environmental inspection. The national body may also undertake inspections and participate in decisions in non-compliance cases. Finally, the State Inspectorate takes particular responsibility for Seveso-related inspection.

Regional Boards are generally responsible for permitting. Appeals on permit conditions are heard by the State EIA Bureau, which also has BAT responsibilities under IPPC. Other bodies involved in environmental management include the Occupational Health Inspection, State Label Inspection, Fire Service, and municipalities.

Lithuania

There are eight regional departments for environmental protection, which in turn operate through 56 more local environmental protection city/district agencies under the Ministry of Environment. The State Environmental Protection Inspectorate conducts methodological support. Appeal against punishment procedures can only be done through the courts. Both national and regional organizations report to the Ministry of the Environment whilst the local agencies report to their regional department.

The regional departments cover most but not all environmental sectors. Nature protection is within their mandate, but certain water issues (drinking and bathing waters) are not. Some aspects of waste management are the responsibility of 10 counties or 60 municipal authorities.

Regional departments have permitting, monitoring, and laboratory services. Local agencies are responsible for inspection and enforcement. Monitoring is conducted both by regional departments and the National Agency for Environmental Protection, and coordinated by the National Agency for Environmental Protection.

Luxembourg

Inspection responsibilities in Luxembourg are focused at national level, with the Administration for the Environment (AfE) that has primary responsibility reporting to the Ministry of the Environment. Routine monitoring and inspection is carried out by accredited contractors on behalf of the AfE, and Customs and Excise is also involved in some aspects (particularly transboundary movements of waste). Officials from the Administration of Environment will only perform on-site visits occasionally and in order to respond to complaints, sometimes in order to verify the work of the external accredited experts.

Malta

In Malta, three authorities respond to the major number of inspections and enforcement requirements of the environment and nature related directives or national legislation. MEPA is the competent authority responsible for the implementation of the majority of environmental laws. Co-ordination between the other two competent authorities - Occupational Health and Safety Authority (responsible for Seveso) and the Malta Resources Authority (responsible for water pollution and resource management) - is achieved through bilateral or multilateral ministerial committees, and formal memoranda of understanding (being finalized).

In addition, several other bodies are described as playing a technical role, with the Malta Police Force playing a very important role in offering support on access and enforcement. Local Councils are also involved through their Warden service.

There are currently 22 staff members within the Environment Protection Directorate –MEPA, dealing with the policymaking, permitting, implementation and enforcement of environmental related legislation in regards to pollution control, waste and mineral issues. Regular monitoring is being carried out in the following fields: marine, air, mineral extraction and land filling.

Inspections are carried out according to a work plan devised on a yearly basis. Both announced and unannounced inspections are performed. The inspectorate possesses prosecutorial powers but the system is still not in place. A database of inspections and permits has been established. This enables the inspector to fill in a report after every inspection and provide this information to the other inspectors instantly. Other branches within MEPA are responsible for other areas, *e.g.* nature protection.

The Netherlands

In the Netherlands more than 500 organisations have roles and responsibilities for inspections. Co-ordination of inspection activities is ensured by the National Conference on Environmental Enforcement (ALOM/BLOM) and the National Information Service for Environmental Enforcement (LIM) at national level and 35 service points of the Regional Service for Environmental Law Enforcement (SEPH) at sub-regional level.

Provinces, municipalities, and water boards are largely responsible for permitting and inspection. However, for certain sectors, *e.g.* nuclear installations and transfrontier shipment of waste, these activities are performed by central organisations like the Inspectorate for the Environment (part of the Ministry of Housing, Spatial Planning, and Environment and the Directorate General of Public Works and Water Management (Rijkswaterstaat). The Inspectorate General carries out a supervisory role over provinces, municipalities and water boards, including first and second line compliance checking and enforcement actions.

Norway

The Ministry of the Environment is responsible for all subordinate agencies with responsibility for environmental protection. The Norwegian Pollution Control Authority (SFT) is one of the subordinate agencies to the Ministry of the Environment. SFT's Department of Control and Emergency Response carries out enforcement and monitoring of compliance in industry at the national level.

The 18 county departments of environmental affairs are also subordinate to the Ministry of the Environment and administer parts of the Pollution Control Act. They are responsible for enforcement and monitoring of compliance of municipal functions and some types of industries at the regional level. SFT is authorised to issue instructions to the county departments of environmental affairs concerning e.g. pollution, and waste. Local authorities are also involved in inspections.

Poland

The environmental inspection authority is a single structure with the Chief Inspectorate for Environmental Protection setting out the direction of work for 16 voivodship inspectorates for environmental protection included in so-called joint-voivod administration.

Its responsibilities focus on inspection, with permitting limited to transfrontier movement of waste (exclusive competence of the chief inspector for environmental protection). The field of action of the inspectorate encompasses the whole environment chapter including the rational use of natural resources, genetically-modified organisms, packaging, Seveso. The inspection is also responsible for state of environment monitoring and for reporting. The chief inspector hears appeals from the voivodship inspectorates' decisions and can also undertake all activities belonging to the competencies of the voivodship inspectorates when considered justified with regard to the importance and complexity of those activities.

There are also other authorities responsible for undertaking inspections, such as: self-government bodies (on the level of voivod, poviat and gmina) which are competent to control the compliance to the administrative decisions issued by them in the scope of environmental protection, State Sanitary Inspection (as regard of drinking water and bathing water), Veterinary Inspection, State Labour Inspection, Trade Inspection, Construction Supervision.

Portugal

The Ministry of Towns, Territorial Planning and Environment (MCOTA) plays a key role for inspections at national level (through the Inspectorate General for the Environment (IGA)) as well as for co-ordinating inspection and enforcement.

The IGA is the competent authority for implementation and enforcement of environmental law with an integrated approach for inspections dealing with different types of pollution – air, noise, water, solid wastes, and also other aspects related to environmental legislation *e.g.* industrial safety.

IGA deals also with checking compliance with environmental contract and water supply systems, discharges from municipal wastewater plants and collective industrial wastewater plants and accidents. In all cases inspections are often carried out by unannounced on-site visits.

Permitting for wastewater discharges is the responsibility of the five regional departments of the Ministry for Environment as well as to checking the compliance for this license by low educated trained personnel in drive by visits.

Romania

The Ministry of Waters and Environmental Protection includes a General Commissioner's Office with eight commissioners leading an environmental guard in the 44 Regional Inspectorates (42 judets, Bucharest, and the Danube Delta biosphere reserve). Since 1998, a water inspectorate with a ministry supervising team plus inspectors in 11 river basin areas exists in parallel.

The inspectors function as advisers in the permitting procedure undertaken by a separate unit of the environment body within each judet. At present, a single permit is issued with annexes relating to each medium according to a standard format. The system is in the process of transformation, with the creation of a national environment agency and eight regional inspectorates taking over some responsibilities currently divided between the Ministry and judet inspectorates.

Slovakia

In Slovakia the inspection authority structure combines national, regional, sectoral, and local responsibilities. The national headquarters includes the five sectoral departments, each providing methodological support and appeal functions for groups of three to five regional sectoral inspectorates. Seventy six district offices under the aegis of the Minister of the Interior are responsible for all permits at present and also have powers of inspection and enforcement to ensure permit conditions are met.

Permitting responsibilities are to be transferred to 36 new districts under the responsibility of the Minister of Environment. Further, a new national IPPC department is being created, with three regional groups combining permitting and inspection.

Slovenia

In Slovenia the national inspection authority combines a number of functions including mining, energy and spatial planning, as well as environment. At the regional level, eight inspectorates cover environment and spatial planning. In addition, there are local environmental inspections with limited competence based on local ordinances. Other authorities with related responsibilities include health, agriculture, forests, hunting and fishing, and trade. An environment agency is responsible for permitting activities that are independent and isolated from inspections.

Spain

The organisation of the inspection system in Spain is largely comparable to the situation in Germany. The inspection system is organised within the individual states at a regional level. There is no national inspecting body.

The main focus of inspection and enforcement in Spain is at regional level (autonomous communities are different than regions). The 17 Autonomous Communities and the two autonomous cities of Ceuta and Melilla have prime responsibility for inspection through their environment ministries. At national level the Ministry of Home Affairs is responsible for the implementation of Seveso II, while the nature protection services of the Civil Guard (SEPRONA) provide technical support to autonomous communities. At waterbasin level, the nine water management boards are responsible for inspection and enforcement relating to discharges to inland waters. At local levels some other officials are also involved.

Sweden

In Sweden environmental inspection takes place at three levels (national, regional and local). The Swedish Environmental Protection Agency (SEPA) is the central authority on supervision concerning all the directives listed by the European Commission as connected to the Recommendation on Minimum Criteria for Inspection except for the Seveso II Directive. The Swedish Rescue Services Agency is the central authority on supervision concerning the Seveso II directive. Both these authorities have a role concerning guidance, evaluation, and co-ordination as well as giving advice and support to the regional and local authorities carrying out inspection and enforcement.

Swedish environmental inspection and enforcement concerning installations and other activeties, among which the controlled installations according to the Recommendation 2001/331/EC are only a minor part, is mostly planned and carried out at regional and local level. There are 21 regional authorities responsible for inspection and enforcement concerning all the listed directives. For all the listed directives except the Seveso II Directive, such inspection responsibility may be delegated to the local environmental authorities (290) having other environment and health protection inspection responsibilities. The Surgeon General (National) is responsible for inspecting military installations.

Operators are required to self-monitor (there is a separate Operator Self Monitoring Ordinance) and demonstrate compliance with their permits. Permitting is carried out by four environmental courts and the above-mentioned 21 regional environmental authorities. At regional level, permitting and inspection are delegated to the same authority. Special governmental instructions keep the licensing task separated from the inspection task. The Enforcement and Regulations Council has been established for exchange of experiences between the central, regional, and local authorities under the Swedish Environmental Code.

United Kingdom

In the UK, there are three separate but similar systems for the regulation of the environment in: (1) England and Wales; (2) Scotland; and (3) Northern Ireland. Environmental laws and policies are generally made at the sub-UK level, and these are then fully implemented (including permits, inspection and enforcement) by the Environment Agency (England and Wales), the Scottish Environmental Protection Agency, or the Northern Ireland Environment and Heritage Service for each area. Local authorities also have a role in inspections, although in Scotland it is fairly limited. Environmental negotiations in Europe are however dealt with at the UK level, which means that all three areas work together. The Department of Trade and Industry covers offshore installations at a national level.

ANNEX 1-2. FIVE ELEMENTS OF ENVIRONMENTAL FEDERALISM IN THE UNITED STATES[12]

The subject of this Annex is the national-state relationship in the United States. While the national government is supreme and above the States in functions or fields of competence such as interstate commerce and pollution control, in many fields State governments have traditional, inherent, and retained powers and are sovereign in these areas. U.S. States operate with the same three branches of government, as does the national government. Therefore rather than to picture the national government as placed above the States, it is more accurate to show the governments operating side-by-side or in parallel under the Constitution (the EPA national pollution-control laws since 1970 have all been written and applied subject to the Constitution's framework of 1789).

A national government can do many things that a state or local government may not do well. National functions include expensive scientific research and development, standard-setting based on scientific findings, information management, planning and tracking of performance, and control of interjurisdictional or transboundary issues. Some of these national functions cannot be shared or devolved. Yet national government is distant. It is a fact of life that there will always be tension between the goal of national consistency or harmonisation of sub-national approaches, on the one hand, and on the other hand the goal of assuring sub-national flexibility to address specific problems and local preferences.

Some decentralisation is desirable and politically necessary – this is universally recognised. Local people closest to an environmental problem often bring greater concern, insight, and energy to solving it. However, there is the natural human tendency to want to save local jobs and to shelter employers who provide the jobs – sometimes even though they are bad polluters. This is especially true where the pollution flows downstream to another town or State. At any level of government, enterprises that chose to pollute to cut production costs may be politically and financially powerful, and they may obtain government protection that is not deserved.

From the viewpoint of the national government, to operate a well-planned decentralisation presents a number of issues or elements including the following five:

- National legal authority clarifying what level of sub-national authority is allowed or required for standard setting and enforcement and prosecution;
- National approval procedures for the qualification of sub-national programmes as having the legal authority and programme resources including trained staff able to implement national requirements;
- National supportive mechanisms to encourage sub-national units, including: (a) capacity building or training; and (b) grants of funding to help implement sub-national programmes;
- National operational, continuous oversight mechanisms including: (a) performance standards; (b) reporting requirements; and (c) consequences for sub-national failures to perform;
- Dispute-resolution mechanisms for resolving tensions inherent in federalism.

[12] Annex 1-2 is based on the article prepared by Mr. Richard Emory in the framework of the EAP Task Force activities. The article was published in the Proceedings of the Saint Petersburg Meeting of the New Independent States' Environmental Compliance and Enforcement Network (2001).

1. Sharing legal authority between the national and sub-national levels

In any country, the constitutional relationship between national and sub-national units of government determines the sharing of legal authority, and everything that follows depends on that. This includes clarifying what level of sub-national legal authority is: (a) required, (b) allowed, and (c) not allowed.

First, when different state standards are not allowed. Where Congress clearly states its intent, and there is a legitimate national purpose such as uniformity, then national standards "preempt" and preclude different (even more protective) state standards. Some examples of this are the standards for motor-vehicle fuels, and for allowed production and use of pesticides and other toxic chemicals. Especially for such products traded widely in interstate (and international) commerce, national enterprises often prefer the uniformity and simplicity of one set of EPA national standards to the confusion of fifty different state standards. Where national standards are "preemptory", often EPA programmes are nationally managed and not delegated to States.

The usual rule in the U.S. is that higher state standards are allowed. "Higher" means more stringent or more environmentally protective. States have great freedom to implement higher standards. For pollution-control, there are two types of standards – ambient and source-based. Ambient standards are allowed by Congress where local conditions allow flexibility in choosing the means to the desired end or goal. Ambient standards are set nationally for air, and by States for bodies of water, based on receiving capacity considering health and environmental effects. Congress then allows great State independence and flexibility in planning and choosing the means of overall attainment. For example, when applying the national ambient air standards, State Implementation Plans can be implemented in almost any fashion and with minimal EPA oversight provided national goals are met. State ambient "water-quality" standards, while required by national law, are mostly written, applied, and enforced by State agencies, with little national involvement provided the goal of "fishable, swimmable" water is met.

The most widely used U.S. pollution-control standards are source-based limitations on discharges, releases, and emissions. The U.S. has relied mainly on source-control standards because they can be enforced without proving environmental harm to an entire ecosystem and without proving the environmental harm caused by one of many sources affecting an ecosystem – both often impossible for the government to prove. In the U.S., state source-control standards usually may be above the EPA national standards, and States also may enforce more strictly that EPA requires. The most well-known example is that the State of California has long had stricter standards of automobile air pollution control than does the national government. States also may regulate more broadly to cover other problems that the national government does not address, such as noise pollution and many problems of non-hazardous municipal waste.

But while States may reach for a higher level of pollution control, of course the bigger problem historically has been that until 1970 they generally failed to control pollution. In 1970, when Congress gave EPA parallel powers (that until then were dormant), the States did not lose any powers – except for the few areas in which national standards are unitary and preemptory. Usually, States may apply state laws, States may adopt national law as state law, or States may chose to do nothing. The U.S. government cannot command a state legislature to make particular environmental laws, to command state officials to regulate polluters in the State in any particular way, or to enforce any national regulatory programme.

What exactly if anything can the EPA require of a State? Really, only that the State be accountable to EPA if the State wants EPA to authorise and defer to the state pollution source-control programme. If a State does not co-operate, the national government is not powerless. Even though a state government is independent and with impunity may fail to protect the environment, what the national government can do is bypass the state government and directly apply national source-control

standards to the people, enterprises, and polluters residing within the State. EPA does this both in: (a) setting national source-control standards; and (b) directly enforcing within States that fail to meet national expectations for state enforcement.

A. National source-based, pollution standards

Most of EPA source-control laws set a nation-wide floor of allowable limits on discharges, releases, and emissions of pollutants from facilities to the environment. Even though States may chose not to implement these standards, for 70-80% of EPA programmes, States have chosen voluntarily and agreed to operate at the national level. The State source-control standards – to be nationally acceptable – must be at least as strict as national standards, which are minimum ones. State standards cannot be negotiated. As to permits, EPA must approve state permits and may disapprove or veto them if they are not adequate. In this way, the burden of controlling pollution is applied by a State to its people in a way that is fair and nationally consistent. In co-operating States, the national government greatly reduces its direct intervention. Where a State is less stringent than the required national approaches, the national government does not regard the State as a fully co-operating regulator. In these States, the EPA regulates directly.

B. Sub-national (state) enforcement and prosecution authority

In addition to the level of the source-control standards themselves, their enforcement also is to be at a level that is fair and reasonably consistent throughout the U.S. As a matter of national policy or law, EPA has expectations that state enforcement will be no less stringent than, or at least substantially similar to, national enforcement. Statistically, today States do more than half, up to about 80% of all inspections, enforcement responses, actions, and prosecutions. The result in the U.S. today is that implementation today is mostly by the States. Usually EPA acts as a reserve or back-up to assist co-operating States.

However, some States do not receive EPA approval of a state programme and so do not receive national authority; in these States, EPA must directly implement and enforce the entire national programme. Some States receive national authority but fail to implement it; here EPA watches (by exercising oversight) to identify state enforcement cases that are not "timely and appropriate". If necessary – and usually it is not necessary – the national government will take direct action within an approved but lagging State to directly enforce national law.

The national standards and EPA presence helps the States to maintain their performance. Many States are actually relieved by the national back up and use it as a weapon in reserve. For example, if an enterprise polluting within a State threatens to move to another State that is more lax, the first State may tell the enterprise that it will inform the national government to come to enforce wherever the enterprise is located, so there is no reason to leave the State: All 50 States in this way compete fairly to attract and keep jobs and investment.

2. Qualification procedures for approving sub-national programmes

There are established EPA national qualification procedures for approving sub-national programmes as having both the legal authority and the programme resources, including trained staff able to implement national requirements. In a programme-by-programme, formal application process, state officials must certify and EPA, by study and review, must verify that all the ingredients of an effective, operational state programme are in place. There is public notice and opportunity for private citizens and groups, including NGOs and enterprises, to comment on the proposed national approval of the state programme. All of these procedures and requirements are established in national laws and regulations.

Once a state programme is approved, theoretically it can be retracted by EPA for state failure to implement effectively. But this is an ad hoc event caused only by extraordinary circumstances, and

in fact EPA has never taken back a state programme without its consent. On a very few occasions, States have voluntarily given back programmes to EPA. EPA probably would have to take funds from its other programmes or obtain additional congressional funding to find the resources to operate state programmes were EPA to take them back for direct national management.

3. National support to sub-national units

National mechanisms to encourage sub-national units include: (a) capacity building; and (b) grants of funding to help implement sub-national programmes. Capacity building may be formal education or training, and more informal mentoring and technical assistance. EPA operates a National Environmental Enforcement Training Institute (NETI) that officials of State and also foreign governments are invited to attend without charge for tuition or materials. Increasingly NETI is using distance-learning techniques such as satellite and Internet based courses, and compact disk (CD) interactive courses are available[13].

Also, EPA field officials often co-operate with their state counterparts in joint inspections and other collaborations. These team-building, co-operative activities serve to informally transfer technical assistance in both directions, and EPA has learned much from state techniques. As the States have become stronger, national technical assistance has become less necessary.

Grants of national funding to States are important too. In the 1970s, the national government funded up to about 80% of many state programmes to get them started. Since then, States have greatly expanded the funding of their own programmes, and most have created state EPAs that are effective and powerful. Now EPA grants provide funding averaging about only 10-20% of total state money for environmental programmes. States pay most of the cost to implement their programmes as equivalent to the national, EPA programmes. This increased state financial responsibility is consistent with the level of state operational responsibility that is much greater than that of the national government in most States. Over time, because of both the decline in national funding and the increase in States' capacity, quite naturally with the States there also has been an increased expectation of greater flexibility and freedom from national control and oversight.

The national grants are not altogether "free" but are agreements that carry certain obligations. They are awarded yearly or for multiple years in advance, and States must apply describing how they will use each grant to implement aspects of the national and state programmes. Today EPA and many States chose to combine all grants in one overall "Performance-Partnership Agreement"[14] that agrees to all national expectations and state flexibility in the implementation of state programmes including enforcement accomplishments. Should a State fail to perform, EPA may withhold its grant funds as a sanction. But this will only make the state programme worse, so the emphasis is on constructive assistance to improve state programmes. A greater sanction is another provision of law (in the Clean Air Act) that allows EPA to stop the much larger transportation grants for interstate highway construction if a State fails to implement some pollution-control laws.

EPA also provides grants to associations of state and local organisations that are active in environmental protection including enforcement. EPA also supports the National Association of (State) Attorneys General in its publication of a "National Environmental Enforcement Journal" (not available on a public web site).

[13] To see NETI's many offerings, visit its web site: http://www.epa.gov/oeca/neti

[14] For copies of Performance Partnership Agreements, visit:http://www.epa.gov/ocir/nepps/agreements.htm

4. National oversight and state accountability

National oversight mechanisms or tools include: (a) performance standards; (b) data requirements; and (c) consequences for sub-national failures to perform. These tools apply to all important aspects of a state programme, including the exercise of state enforcement authority. Performance standards and measures cover both outputs (activities) and outcomes (results). The Performance Partnership Agreements also contain requirements for state data collection and State-to-EPA reporting of the numbers of inspections and enforcement actions taken. EPA is working with States to obtain information also on the environmental results and health effects achieved from state programme implementation.

Even on a case-by-case basis, a controversial state enforcement case may receive national scrutiny. The criteria for case review are set by EPA's national programme offices and expressed in policy guidance documents that establish clear expectations for satisfactory state enforcement, especially the timeliness and appropriateness of state enforcement response to significant violations. While subject to some negotiation, these national enforcement policies are incorporated in agreements for state programme grants or in the overall Performance Partnership Agreements.

Where EPA believes that there must be a national enforcement action, it will seek first to include the State in one co-operative, joint EPA-State case against the violator. Where the State does not agree, EPA can begin an enforcement case at the national level. This may even be on top of a state case in what is called an "overfiling". EPA will only do this if the state case was clearly inadequate or there is a compelling national interest to take separate action. On rare occasions, there has even been EPA versus State litigation in court in cases where the correct government response is highly contested. A much preferred and less litigious approach is being tried in frequent cases of disagreement over clean-up of abandoned waste sites, where mediation now is regularly used to try to bring together governments, citizens, and entities responsible for the contamination.

5. Dispute resolution

In the U.S., inter-governmental disagreements arise regularly. The national government may see a State as protecting favoured local polluting industries and damaging the goal of national consistency. On the other hand, a State may see the national EPA as heavy-handed, too enforcement-minded, and not respectful of the local goal of tailored and flexible response. States also object to the steady stream of new national pollution-control requirements, often without new national money, that States call "unfunded mandates". While there are consultations between the environmental authorities of the national government and of the States, there is no truly effective dispute-resolution mechanism of an administrative or bureaucratic nature. There is one very effective dispute resolution mechanism – this is a national or State election.

ANNEX 1-3. RECOMMENDATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 4 APRIL 2001 PROVIDING FOR MINIMUM CRITERIA FOR ENVIRONMENTAL INSPECTIONS IN THE MEMBER STATES (2001/331/EC)[15]

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee(1),

Having regard to the opinion of the Committee of the Regions(2),

Acting in accordance with the procedure laid down in Article 251 of the Treaty(3), and in the light of the joint text approved by the Conciliation Committee on 8 January 2001,

Whereas:

(1) The resolution of the Council and of the Representatives of the Governments of the Member States, meeting within the Council, of 1 February 1993 on a Community programme of policy and action in relation to the environment and sustainable development(4) and the Decision of the European Parliament and the Council on its review(5) emphasised the importance of implementation of Community environmental law through the concept of shared responsibility.

(2) The Commission Communication of 5 November 1996 to the Council of the European Union and the European Parliament on implementing Community environmental law, in particular paragraph 29 thereof, proposed the establishment of guidelines at Community level in order to assist Member States in carrying out inspection tasks, thereby reducing the currently-existing wide disparity among Member States' inspections.

(3) The Council in its resolution of 7 October 1997 on the drafting, implementation and enforcement of Community environmental law(6) invited the Commission to propose, for further consideration by the Council, in particular on the basis of the work of the European Union network for the implementation and enforcement of environmental law (IMPEL), minimum criteria and/or guidelines for inspection tasks carried out at Member State level and the possible ways in which their application in practice could be monitored by Member States, in order to ensure an even practical application and enforcement of environmental legislation, and the Commission's proposal has taken into account a paper produced by IMPEL in November 1997 and entitled "Minimum Criteria for Inspections".

(4) The European Parliament by its resolution of 14 May 1997 on the Commission's Communication called for Community legislation on environmental inspections, and the Economic and Social Committee and the Committee of the Regions gave favourable opinions on the Commission's Communication and stressed the importance of environmental inspections.

(5) Different systems and practices of inspection already exist in Member States and should not be replaced by a system of inspection at Community level, as was considered in the Council resolution of 7 October 1997, and Member States should retain responsibility for environmental inspection tasks.

[15] Original spelling and formatting of this document are kept intact. Source: Official Journal L 118 , 27/04/2001 P. 0041 – 0046. http://europa.eu.int/eur-lex/pri/en/oj/dat/2001/l_118/l_11820010427en00410046.pdf

(6) The European Environment Agency can advise the Member States on developing, setting up and extending their systems for monitoring environmental provisions and can assist the Commission and the Member States in monitoring environmental provisions by giving support in respect of the reporting process, so that reporting is coordinated.

(7) The existence of inspection systems and the effective carrying out of inspections is a deterrent to environmental violations since it enables authorities to identify breaches and enforce environmental laws through sanctions or other means; thus inspections are an indispensable link in the regulatory chain and an efficient instrument to contribute to a more consistent implementation and enforcement of Community environmental legislation across the Community and to avoid distortions of competition.

(8) There is currently a wide disparity in the inspection systems and mechanisms among Member States in terms not only of their capacities for carrying out inspection tasks but also of the scope and contents of the inspection tasks undertaken and even in the very existence of inspection tasks in a few Member States, and this is a situation which cannot be considered satisfactory with reference to the objective of an effective and more consistent implementation, practical application and enforcement of Community legislation on environmental protection.

(9) It is necessary, therefore, to provide, at this stage, guidelines in the form of minimum criteria to be applied as a common basis for the performance of environmental inspection tasks within the Member States.

(10) Community environmental legislation obliges Member States to apply requirements in relation to certain emissions, discharges and activities; minimum criteria on the organisation and carrying out of inspections should be met in the Member States, as a first stage, for all industrial installations and other enterprises and facilities whose air emissions and/or water discharges and/or waste disposal or recovery activities are subject to authorisation, permit or licensing requirements under Community law.

(11) Inspections should take place taking into account the division of responsibilities in the Member States between authorisation and inspection services.

(12) In order to make this system of inspections efficient, Member States should ensure that environmental inspections activities are planned in advance.

(13) Site visits form an important part of environmental inspection activities.

(14) The data and documentation provided by industrial operators registered under the Community eco-management and audit scheme could be a useful source of information in the context of environmental inspections.

(15) In order to draw conclusions from site visits, regular reports should be established.

(16) Reporting on inspection activities, and public access to information thereon, are important means to ensure through transparency the involvement of citizens, non-governmental organisations and other interested actors in the implementation of Community environmental legislation; access to such information should be in line with the provisions of Council Directive 90/313/EEC of 7 June 1990 on the freedom of access to information on the environment[7].

(17) Member States should assist each other administratively in operating this recommendation. The establishment by Member States in cooperation with IMPEL of reporting and advice schemes relating to inspectorates and inspection procedures would help to promote best practice across the Community.

(18) Member States should report to the Council and the Commission on their experience in operating this recommendation and the Commission should regularly inform the European Parliament.

(19) The Commission should keep the operation and effectiveness of this recommendation under review and report thereon to the European Parliament and the Council as soon as possible after the receipt of the Member States' reports.

(20) Further work by IMPEL and Member States, in cooperation with the Commission, should be encouraged in respect of best practices concerning the qualifications and training of environmental inspectors.

(21) In accordance with the principles of subsidiarity and proportionality as set out in Article 5 of the Treaty, and given the differences in inspection systems and mechanisms in the Member States, the objectives of the proposed action can best be achieved by guidance set out at Community level.

(22) In the light of the experience gained in the operation of this recommendation and taking account of IMPEL's further work, as well as of the results of any schemes provided for in this recommendation, the Commission should, upon receipt of Member States' reports, give consideration to developing the minimum criteria in terms of their scope and substance and to making further proposals which might include a proposal for a directive, if appropriate,

HEREBY RECOMMEND:

I Purpose

Environmental inspection tasks should be carried out in the Member States, according to minimum criteria to be applied in the organising, carrying out, following up and publicising of the results of such tasks, thereby strengthening compliance with, and contributing to a more consistent implementation and enforcement of Community environmental law in all Member States.

II Scope and definitions

1. (a) This recommendation applies to environmental inspections of all industrial installations and other enterprises and facilities, whose air emissions and/or water discharges and/or waste disposal or recovery activities are subject to authorisation, permit or licensing requirements under Community law, without prejudice to specific inspection provisions in existing Community legislation.

(b) For the purposes of this recommendation, all the installations and other enterprises and facilities referred to in point (a) are "controlled installations".

2. For the purposes of this recommendation, "environmental inspection" is an activity which entails, as appropriate:

(a) checking and promoting the compliance of controlled installations with relevant environmental requirements set out in Community legislation as transposed into national legislation or applied in the national legal order (referred to hereinafter as "EC legal requirements");

(b) monitoring the impact of controlled installations on the environment to determine whether further inspection or enforcement action (including issuing, modification or revocation of any authorisation, permit or license) is required to secure compliance with EC legal requirements;

(c) 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.

3. Environmental inspections, including site visits, may be:

(a) routine, that is, carried out as part of a planned inspections programme; or

(b) non-routine, that is, carried out in such cases in response to complaints, in connection with the issuing, renewal or modification of an authorisation, permit or license, or in the investigation of accidents, incidents and occurrences of non-compliance.

4. (a) Environmental inspections may be carried out by any public authority at either national, regional or local level, which is established or designated by the Member State and responsible for the matters covered by this recommendation.

(b) The bodies referred to in point (a) may, in accordance with their national legislation, delegate the tasks provided for in this recommendation to be accomplished, under their authority and supervision, to any legal person whether governed by public or private law provided such person has no personal interest in the outcome of the inspections it undertakes.

(c) The bodies referred to in points (a) and (b) are defined as "inspecting authorities".

5. For the purposes of this recommendation, an "operator of a controlled installation" is any natural or legal person who operates or controls the controlled installation or, where this is provided for in national legislation, to whom decisive economic power over the technical functioning of the controlled installation has been delegated.

III Organisation and carrying out of environmental inspections

1. Member States should ensure that environmental inspections aim to achieve a high level of environmental protection and to this end should take the necessary measures to ensure that environmental inspections of controlled installations are organised and carried out in accordance with points IV to VIII of this recommendation.

2. Member States should assist each other administratively in carrying out the guidelines of this recommendation by the exchange of relevant information and, where appropriate, inspecting officials.

3. To prevent illegal cross-border environmental practices, Member States should encourage, in cooperation with IMPEL, the coordination of inspections with regard to installations and activities which might have significant transboundary impact.

4. In order to promote best practice across the Community, Member States may, in cooperation with IMPEL, consider the establishment of a scheme, under which Member States report and offer advice on inspectorates and inspection procedures in Member States, paying due regard to the different systems and contexts in which they operate, and report to the Member States concerned on their findings.

IV Plans for environmental inspections

1. Member States should ensure that environmental inspection activities are planned in advance, by having at all times a plan or plans for environmental inspections providing coverage of all the territory of the Member State and of the controlled installations within it. Such a plan or plans should be available to the public according to Directive 90/313/EEC.

2. Such plan or plans may be established at national, regional or local levels, but Member States should ensure that the plan or plans apply to all environmental inspections of controlled installations within their territory and that the authorities mentioned in point II(4) are designated to carry out such inspections.

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

(a) the EC legal requirements to be complied with;

(b) a register of controlled installations within the plan area;

(c) 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 EC legal requirements;

(d) data on and from previous inspection activities, if any.

4. Plans for environmental inspections should:

(a) 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;

(b) 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, in particular those produced by controlled installations registered according to the Community eco-management and audit scheme (EMAS), results of previous inspections and reports of environmental quality monitoring.

5. Each plan for environmental inspections should as a minimum:

(a) define the geographical area which it covers, which may be for all or part of the territory of a Member State;

(b) cover a defined time period, for example one year;

(c) include specific provisions for its revision;

(d) identify the specific sites or types of controlled installations covered;

(e) 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;

VI Reports and conclusions following site visits

1. Member States should ensure that after every site visit the inspecting authorities process or store, in identifiable form and in data files, the inspection data and their findings as to compliance with EC legal requirements, an evaluation thereof and a conclusion on whether any further action should follow, such as enforcement proceedings, including sanctions, the issuing of a new or revised authorisation, permit or license or follow-up inspection activities, including further site visits. Reports should be finalised as soon as possible.

2. Member States should ensure that such reports are properly recorded in writing and maintained in a readily accessible database. The full reports, and wherever this is not practicable the conclusions of such reports, should be communicated to the operator of the controlled installation in question according to Directive 90/313/EEC; these reports should be publicly available within two months of the inspection taking place.

VII Investigations of serious accidents, incidents and occurrences of non-compliance

Member States should ensure that the investigation of serious accidents, incidents and occurrences of non-compliance with EC legislation, whether these come to the attention of the authorities through a complaint or otherwise, is carried out by the relevant authority in order to:

(a) clarify the causes of the event and its impact on the environment, and as appropriate, the responsibilities and possible liabilities for the event and its consequences, and to forward conclusions to the authority responsible for enforcement, if different from the inspecting authority;

(b) mitigate and, where possible, remedy the environmental impacts of the event through a determination of the appropriate actions to be taken by the operator(s) and the authorities;

(c) determine action to be taken to prevent further accidents, incidents and occurrences of non-compliance;

(d) enable enforcement action or sanctions to proceed, if appropriate; and

(e) ensure that the operator takes appropriate follow-up actions.

VIII Reporting on environmental inspection activities in general

1. Member States should report to the Commission on their experience of the operation of this recommendation two years after the date of its publication in the Official Journal of the European Communities, using, to the extent possible, any data available from regional and local inspecting authorities.

2. Such reports should be available to the public and should include in particular the following information:

(a) data about the staffing and other resources of the inspecting authorities;

(b) details of the inspecting authority's role and performance in the establishment and implementation of relevant plan(s) for inspections;

(c) summary details of the environmental inspections carried out, including the number of site visits made, the proportion of controlled installations inspected (by type) and estimated length of time before all controlled installations of that type have been inspected;

(d) brief data on the degree of compliance by controlled installations with EC legal requirements as appears from inspections carried out;

(e) a summary, including numbers, of the actions taken as a result of serious complaints, accidents, incidents and occurrences of non-compliance;

(f) an evaluation of the success or failure of the plans for inspections as applicable to the inspecting body, with any recommendations for future plans.

IX Review and development of the recommendation

1. The Commission should review the operation and effectiveness of this recommendation, as soon as possible after receipt of the Member States' reports mentioned in point VIII above, with the intention of developing the minimum criteria further in terms of their scope in the light of the experience gained from their application, and taking into account any further contributions from interested parties,

including IMPEL and the European Environment Agency. The Commission should then submit to the European Parliament and the Council a report accompanied, if appropriate, by a proposal for a directive. The European Parliament and the Council will consider such a proposal without delay.

2. The Commission is invited to draw up, as quickly as possible, in cooperation with IMPEL and other interested parties, minimum criteria concerning the qualifications of environmental inspectors who are authorised to carry out inspections for or under the authority or supervision of inspecting authorities.

3. Member States should, as quickly as possible, in cooperation with IMPEL, the Commission and other interested parties, develop training programmes in order to meet the demand for qualified environmental inspectors.

X Implementation

Member States should inform the Commission of the implementation of this recommendation together with details of environmental inspection mechanisms already existing or foreseen not later than twelve months after its publication in the Official Journal of the European Communities.

Done at Luxembourg, 4 April 2001.

For the European Parliament
The President
N. Fontaine

For the Council
The President
B. Rosengren

(1) OJ C 169, 16.6.1999, p. 12.
(2) OJ C 374, 23.12.1999, p. 48.
(3) Opinion of the European Parliament of 16 September 1999 (OJ C 54, 25.2.2000, p. 92), Council Common Position of 30 March 2000 (OJ C 137, 16.5.2000, p. 1) and Decision of the European Parliament of 6 July 2000 (not yet published in the Official Journal). Decision of the European Parliament of 1 February 2001 and Council Decision of 26 February 2001.
(4) OJ C 138, 17.5.1993, p. 1.
(5) OJ L 275, 10.10.1998, p. 1.
(6) OJ C 321, 22.10.1997, p. 1.
(7) OJ L 158, 23.6.1990, p. 56.

PART 2
MANAGING STRATEGICALLY

PART 2
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CHAPTER 2.1
STRATEGIC PLANNING

The functioning of any institution, including environmental inspectorates, requires policy makers and managers to consider a number of issues. Among them, organisation and management are of utmost importance to enable inspectorate personnel to work together for achieving strategic goals and providing effective and efficient public service.

The preceding part of the toolkit dealt with fundamental aspects of environmental compliance assurance. It described the evolving role of inspection as part of environmental regulation, the functions of inspectors in mature regulatory systems, root factors influencing compliance, and some institutional aspects of compliance assurance.

Also minimum quality standards (criteria) for environmental inspectorates were identified in Part 1. This part and those following address the implementation of these criteria. In particular, Part 2 focuses on Group 1 of criteria. The way these are discussed is closely linked to the concept of **strategic management**. This concept is introduced and insights are provided to understand better its elements, such as problem analysis, strategy formulation, strategy implementation, and strategic control. In its broadest sense, strategic management consists of managerial decisions and actions that help to ensure that the organisations define and maintain a beneficial rapport with its environment, where organisations' strengths and weaknesses are matched with the opportunities and threats of the overall socio-economic situation. It is a continuous process in the framework of which modifications are introduced in the strategy as a response to new challenges or changing circumstances.

Besides external environment, the strategic management is closely linked to other contextual dimensions of organisations, such as:

- **Culture**: values and beliefs shared by all members of an organisation;
- **Size**: number of people and resources and their span in the organisation;
- **Technology**: often unique know-how needed to reach organisational goals, including nature of activities, specialisation, type of equipment/facilities needed, etc.

The toolkit aims at bringing to and establishing in environmental inspectorates the consideration of these contextual dimensions, in addition to the traditional consideration of structural dimensions[16]. In particular, a culture should be established that enhances inspectorates' effectiveness. Furthermore, the human resource management should tend to exhibit an incentive-based approach, which attracts highly competitive staff and rewards merit rather than the number of "years with organisation".

Because of financial and political constraints, some changes may be difficult to pursue. Barriers will need to be overcome, both internal and external, and a lot of effort devoted to the training of managers and staff. However, effectiveness brought by strategic management, is indispensable to the very survival of environmental inspectorates.

[16] Structural dimensions are: centralisation, formalisation (level of development of internal policies and procedures), hierarchy, standardisation of processes, specialisation, and training.

2.1.1 Strategic thinking – a feature of successful organisations

Successful and long-lasting organisations, either private or public, are those with a strategy that sets clear objectives. In this respect, strategic planning is a management tool used to help an organisation to focus its energy, to ensure that staff members are working towards the same goals, to assess and adjust the organisation's direction. It is a disciplined effort to produce fundamental decisions and actions that shape and guide what an organisation is, what it does, and why it does it, with a focus on the future. Strategic planning implies that some goals and actions are more important than others: much of the strategy lies in making tough decisions about what is most important to achieving success.

Planning strategically means being clear about the organisation's objectives and available resources, and relating both to a dynamic environment. The process of planning should be disciplined and call for a certain order and pattern to keep it focussed and productive; it addresses a sequence of questions that helps planners examine experience, test assumptions, gather and incorporate information about the present, and anticipate the environment in which the organisation will be working in the future.

It is also important to know what strategic planning is not: it does not attempt to make future decisions (Steiner, 1979). Over time, the organisation must stay abreast of changes in order to make the best decisions it can at any given point – it must manage strategically.

2.1.2 Major phases of strategic planning

Strategic planning activities include strategic analysis, setting strategic direction and action planning. These phases are described below.

Strategic analysis

This activity can include some sort of scan, or review, of the organisation's environment (*e.g.* of the political, economic and technical environment). Planners carefully consider various driving forces in the environment. They also look at the various strengths, weaknesses, opportunities and threats (SWOT-analysis) regarding the organisation.

Setting strategic direction

In the planning process, conclusions should be drawn about what the organisation must do as a result of the major issues and opportunities facing the organisation. These conclusions include what overall accomplishments (or "strategic goals") the organisation should achieve, and the overall methods (or "strategies") to achieve the accomplishments. Goals should be designed and worded as much as possible to be **Specific, Measurable, Achievable, Realistic and Timely, Extending** the capabilities of those working to achieve the goals, and **Rewarding** to them ("SMARTER").

At some point in the strategic planning process, the strategic "philosophy" should be identified. This includes identifying or updating the organisation's mission, vision and/or values statements.

Mission statements are brief written descriptions of the purpose of the organisation (why the organisation exists, and what it seeks to accomplish), its business (the main method or activity through which the organisation tries to fulfil this purpose), its values (the principles or beliefs that guide an organisation's members as they pursue the organisation's purpose). Mission statements vary in nature from very brief to quite comprehensive.

Vision and values statements are increasingly used. Whereas the mission statement summarises the what, how, and why of an organisation's work, a **vision statement** presents an image of success. Vision statements are usually a compelling description of how the organisation will or should operate at some point in the future and of how an inspectorate's customers (the public, the politicians, but also the "environment" and the "economy") benefit from the organisation's products and services. **Values statements** list the overall priorities of how the organisation will operate. Some people focus the values statement on moral values. Moral values are values that suggest overall priorities in how people ought to act in the world *e.g.* integrity, honesty, respect, etc. Other people include operational values which suggest overall priorities for the organisations *e.g.* to expand the inspectorate's influence, increase efficiency, etc. The vision statement and values statement are sometimes considered to be part of the mission statement.

Action planning

Action planning is to carefully lay out how the strategic goals will be accomplished. Action planning often includes specifying **objectives**, or specific results, relating to each strategic goal. Often, each objective is associated with a **tactic**, which is one of the methods needed to reach the objective.

Action planning also includes specifying **responsibilities** and **timelines** with each objective, or who needs to do what and by when. It should also include methods to **monitor** and **evaluate** the plan, which includes knowing how the organisation will know who has done what and by when.

It is common to develop a regular annual **plan** (sometimes called the **operational plan** or **management plan**), which includes the strategic goals, strategies, objectives, responsibilities and timelines that should be done in the coming year. **Budgets** are included in the strategic and annual plan, and with work plans.

2.1.3 How to develop a strategic plan

While drafting a strategic plan two key elements should be remembered: the strategic planning process is at least as important as the planning document itself and it is never "finished". It is a continuous cycle as a part of the management process itself. Strategic planning influences numerous aspects of the organisation, including:

- Programmes and activities that will be carried out and how these will be designed;
- Organisational design and roles that are needed by the organisation;
- Performance goals that are to be established;
- Resources that are needed to reach the goals, and consequently, how much money is needed to procure those resources – ultimately, the goals determine the content of various budgets;
- Amounts that are needed for inclusion in the fundraising plan.

Also it includes:

- Determining what is happening **outside the organisation** and how it might effect the organisation (an environmental scan);
- Determining what is happening **inside the organisation**, including its strengths, weaknesses, opportunities and threats (SWOT analysis);

- Establishing statements of **mission, vision** and **values**;
- Establishing **goals** to accomplish over the next (usually) three years, as a result of what is happening inside and outside the organisation;
- Identifying how those goals will be reached (strategies, objectives, responsibilities and timelines).

More specifically, strategic planning consists of five steps, which are presented below:

Step 1: Getting ready

This step paves the way for an organised process, including the identification of specific issues or choices that the planning process should address, clarification of roles (who does what in the process), the creation of a Planning Committee, the development of an organisation profile, and the identification of the information that must be collected to help make sound decisions. Typically, a brief work plan will be developed to guide the rest of the strategic planning process.

Step 2: Articulating mission and vision

This step will end with a draft mission statement and draft vision statement. A mission statement needs to communicate in a few sentences the essence of the organisation to the stakeholders and the public. Mission statements should contain the "purpose statement" (clearly stating what your organisation wants to accomplish), the "business statement" (what activities your organisation will use to pursue its purpose), and values (basic beliefs of your organisation). For instance:

«The inspectorate ensures compliance with environmental legal requirements through communication, inspection and enforcement action. While imposing pressure on offenders in a consequent, consistent and fair manner, economical, social and ethical aspects are taken into account and self-monitoring and voluntary compliance mechanisms are stimulated. The inspectorate attaches high importance to integrity and treats equal situations in an equal way, no matter which of its staff members deals with it. To realise our mission, we follow five guiding principles…»

Mission statements can be short or long. There is no formula for finding the wording that best expresses the collective intention of your organisation. There is no single approach. What is important is that a guiding set of ideas is articulated - a set that your stakeholders and staff will support. Keep refining the mission statement until you have a version that people can actively support bearing in mind that the success of the mission relies on the willingness of the people involved.

The vision statement is a guiding image of success formed in terms of a contribution to society. It is a description in words that conjures up a similar picture, for each member of the group, of the purpose of the group's work together.

Step 3: Assessing the situation

The product of this step is a database of **quality information** to be used in the decision making process, as well as a list of **critical issues** that demand the organisation's response (the most important issues that the organisation has to deal with). Part of strategic planning, thinking and management is awareness of resources and the future environment, so that the organisation can successfully respond to changes. Assessing the situation includes obtaining current information about the strengths, weaknesses and performance that will highlight the critical issues to be addressed in the strategic plan. This could include issues like funding, new programme opportunities, changing legal requirements, changing the attitude of the public, etc. The main point is to choose the most important subjects to address. A maximum of five to ten critical issues should be selected and agreed upon by the Planning Committee.

Step 4: Developing strategies, goals and objectives

The product of this step will be an **outline** of the organisation's **strategic directions**: the general strategies, long-range goals, and specific objectives of its response to critical issues. Once the mission is affirmed and the critical issues identified, it should be decided how to tackle them: the broad approaches to be taken (strategies), and the general and specific results to be sought (goals and objectives). Strategies, goals, and objectives may come from individual inspiration, group discussion, formal decision-making techniques, etc. This process takes time and flexibility and will possibly frequently need additional information or re-evaluation of former conclusions. New insights may even emerge changing the mission statement. It is important not to be afraid to go back to an earlier step and take advantage of the new insights. However, in the end, the **leadership agrees** on how to address the critical issues.

Step 5: Writing the strategic plan

The product of this last step is the **strategic plan**. This has to be written after agreement on the strategy. The final text of the document will be submitted for review to all key decision makers in the process (usually management and senior staff). This is also the moment to discuss with senior staff the possibilities of translating the plan into operating plans (the subsequent detailed action plans for accomplishing the goals mentioned in the strategic plan), and to ensure that the plan answers key questions about priorities and direction in sufficient detail to serve as a guide. If any important questions are raised revision should be accomplished in a limited period of time. However do not neglect conflicts just to wrap up the process more quickly. Serious conflicts will inevitably undermine the potency of the strategy.

2.1.4 Framework to guide strategic planning

The framework presented in Annex 2-1 will act as a guide to completion of the basic strategic plan document. Users are encouraged to work with a planning team in their organisation to fill out this framework. The framework follows the chapters of a strategic action plan, including title page, table of contents, executive summary, political authorisation of the strategic plan, organisational description, mission statement, vision statement, values statement, and goals and strategies. Under each chapter heading is an explanation of the data that should be filled in at that place, as well as some hints on the topic.

The framework also mentions a number of appendices that should be attached to the strategic action plan in order to make it a coherent document. These appendices are action planning, description of the strategic planning process used, strategic analysis data, goals for inspectorate subdivisions and chief inspector, staffing plans, operating budgets, financial reports, monitoring and evaluation of the plan, and communicating the plan. Limited examples are used to further support the explanation.

2.1.5 Practical example of strategic planning

To help toolkit readers to picture a strategic plan, this sub-section brings an example from the Department of Fisheries and Oceans Canada (DFO), which plays the role of a specialised inspectorate within the Canadian Ministry of Fisheries and Oceans. The DFO strategic planning process was launched in 1998 by the Departmental Management Committee (DMC) to address the Department's "need for future direction". The process included consultations with all sectors and regions within the Department and the resulting plan reflected the policy objectives formulated by the Minister of Fisheries and Oceans. The intention was to reflect the Strategic Plan in all major

departmental planning frameworks including business, capital, human resources and sustainable development planning, accountability accords, and corporate performance measurement.

The Strategic Plan was developed in three phases:

- An Environmental Scan highlighted drivers of change, and opportunities and threats;
- A review of Strategic Issues identified the long-term strategic issues;
- The Strategic Plans outlined the long-term vision, priorities and directions of the DFO.

Box 2-1 reproduces the **Executive Summary of the Strategic Plan**. Interested readers can download the full text from the Ministry's Internet site[17].

Box 2-1. Executive Summary of the Strategic Plan adopted in March 2000 by the Department of Fisheries and Oceans Canada (DFO)

Introduction

The DFO Strategic Plan provides a roadmap that will guide the department over the next three to five years. It responds to the internal and external challenges facing the Department and its business lines and incorporates the variety of regional/sectoral issues we face. It reflects the priorities and objectives established by the Minister. The Plan provides the framework for moving beyond a crisis-oriented planning environment to one based on a stable set of objectives and priorities, which respond to the broader government agenda and the priorities of Canadians.

The Plan outlines a vision which can only be achieved if we all work together. If we are to be successful in implementing the Plan, we must all become familiar with where we fit in and how we can each contribute. With your help, this Department will move ahead to the 21st century with confidence and credibility.

Vision and values

DFO's vision and values provide the fundamental building blocks for the Strategic Plan.

DFO vision:

Safe, healthy, productive waters and aquatic ecosystems, for the benefit of present and future generations, by maintaining the highest possible standards of:

Service to Canadians

– Marine Safety and Environmental Protection

– Scientific Excellence

– Conservation and Sustainable Resource Use

DFO Values:

– Accountability to the people of Canada

– Commitment to shared stewardship and responsibility

– Respect, trust and teamwork in our relations among ourselves and with others

– A work environment that values people, diversity, openness and continuous learning

[17] http://www.dfo-mpo.gc.ca/publication_e.htm

The Strategic Plan Framework

The framework consists of three corporate objectives and five strategic priorities:

Objective 1 "Restoring Confidence and Credibility"

Restoring Confidence and Credibility is the overarching objective of the Strategic Plan. It encompasses the other two corporate objectives of Mandate Renewal and Organisational Effectiveness. It reflects the need to promote a common sense of purpose and cooperation among DFO employees and stakeholders in order to achieve public respect and support for DFO roles and responsibilities.

Objective 2 "Mandate Renewal"

The second corporate objective is Mandate Renewal. This objective is aimed at providing basic services to Canadians and developing new ways to govern. To this end, the objective of Mandate renewal is comprised of three priorities, namely Program Integrity, Financial Stability and Policy Renewal.

Priority A "Program Integrity" : Program Integrity involves building capacity to deliver basic services to Canadians and making strategic investment in support of DFO's critical mandate and programs. This means building capacity in the areas of marine safety, conservation and protection, scientific research and habitat protection. It also means making strategic investment in the fleet, infrastructure and technology.

Priority B "Financial Stability" : In response to financial pressures, DFO must find ways to meet its responsibilities within its existing budget. We need to examine opportunities for savings in less critical program and service areas; develop a capital plan which will lead to a more affordable capital asset base which supports delivery of our mandate; and develop a revenue management framework (although revenue generation by itself will not offset the significant fiscal pressures faced by the Department).

Priority C "Policy Renewal" : Policy Renewal will require new models of governance that promote share stewardship and responsibility. Before new governance structures can be established, there is a need to ensure that clear policy frameworks are in place in key areas. These include: the Oceans Management Strategy for Canada; Fishery of the Future including Aboriginal Fisheries; Aquaculture; and marine Services Governance. In addition, work will continue on a number of other important policy issues for the Department.

Objective 3 "Organisational Effectiveness"

The final corporate objective is Organisational Effectiveness. This objective aims at creating a more integrated and forward looking organisation, one that emphases teamwork, planning, learning, accountability and results. This means placing emphasis on Continued Management Improvements and Workforce Rejuvenation which comprise the two priorities for this objective.

Priority D "Continued Management Improvements" : DFO is focusing on management initiatives which will improve accountability, financial discipline, direction setting and human resource management. Key management improvements include: an integrated planning approach and performance management framework; strategic investments and an improved governance framework for information technology and management; and finally, a focus on service delivery at the local level and citizen engagement.

Priority E "Workforce Rejuvenation" : In rejuvenating its workforce, the DFO must focus on short-term fundamental issues such as morale, workload and an aging workforce as well as longer term challenge of building an adaptive, high performing workforce positioned to meet the challenges of 21st century. To this end, DFO is focusing its Human Resources Strategy around three key initiatives, namely, continuous learning, organisational health, and recruitment and retention.

Conclusion

The vision and direction of the DFO Strategic Plan promotes federal government priorities related to improving the quality of life of Canadians, sustainable development and environmental stewardship. The Plan provides an opportunity for DFO to play a leadership role in revitalising the public service within the federal government.

Sources: Reproduced integrally from "Moving Forward with Confidence and Credibility: A Strategic Plan", DFO 2000.

2.1.6 Annual plans of environmental inspectorates

The development and implementation of an annual plan gives shapes to strategic objectives set by individual inspectorates. It constitutes a tangible expression of programming in the field of compliance assurance. The core component of such an annual plan is a detailed description of inspection and other types of activities over a defined time period. It will be desirable that inspectorates apply principles of professional project management to develop these plans, including adoption of matrix organisational structures, as described in Part 2, to assure their implementation.

At a minimum, each plan will need to:

- Define the geographical area which it covers. This can be the whole territory of a country, its administrative-territorial units, water basins, or ecosystems;
- Identify the scope of compliance assurance activities: both "green" and "brown" issues will need attention where compliance assurance for nature protection and pollution prevention and control are concentrated in one agency;
- Prescribe the plan for routine environmental inspections. This plan will be based on well-defined frequency of site visits for different types of controlled installations;
- Provide for and outline procedures for non-routine environmental inspections in response to complaints, accidents, incidents, etc.;
- Provide for co-ordination between different inspecting authorities, where relevant;
- Indicate time and resource requirements;
- Highlight priorities;
- Include specific provisions for plan revision.

Case Study: Annual Plan of the Environment Inspection Section of the Flemish Government[18]

The 2001 Annual Plan of the Environment Inspection Section of the Flemish Government is a document in which its developers made the attempt to follow the above-described requirements of effective compliance assurance programming. It mapped out all the enforcement activities of the Environment Inspection Section (EIS) and set very precise personnel requirements and budgets.

The traditional vertical structure of the EIS with a local service for each Flemish province and a Chief Inspectorate located in Brussels was not enough to meet the demand for specialisation and increasing complexity of regulations. Therefore, to facilitate implementation of the plan, a horizontal organisation was superposed on the vertical structure in the form of working groups for each component of the environment: Water, Safety, Noise, Soil and Groundwater Water, and Air. A working group consisted of representatives of the local services and a representative of the Chief Inspectorate. The working group operation had to guarantee a co-ordinated and uniform approach to the whole Flemish Region.

The EIS tasks were grouped according to their type and origin in specific enforcement programmes, which were further divided into projects, actions, and research assignments. The relevant chapters of the plan explained exactly what falls under these categories. The plan aimed at harmonising the activities in the different environmental sectors in order to follow an integrated approach to inspection. A distinction was made in the plan between routine and reactive assignments. The plan was summarised in a table, which gave the time input and budget for each project/activity (see Table 2-1).

[18] Based on the Environment Inspection Plan 2001 (Environment Inspection Section of the Flemish government).

Table 2-1. Selected items from the summary table of the enforcement activities of the Environment Inspection Section of the Flemish government in 2001

Type		Subject	Title	No.	Personnel requirement	
					Days	FTU[19]
Specific enforcement programmes	Projects	Water	Integrated inspection of laundries	P212	300	1.50
		Safety	External risk investigation methodology	P315	165	0.83
		Waste	Illegal practices construction and demolition rubble	P615	340	1.70
		Air	Refineries 2001	P724	91	0.46
	Activities	Water	Inspection of sewage treatment plants	A108	80	0.40
		Safety	Storage of biocides	A317	115	0.58
		Noise	Airfields	A406	100	0.50
		Waste	Inspection of secondary raw materials	A619	145	0.73
		Air	Asphalt producers	A728	88	0.44
		Manure	Inspection of agricultural companies	A903	460	2.30
	Research	Water	Production of a quality manual for measurements and sampling on site	S214	100	0.50
		Safety	Safety examinations	S318	115	0.58
		Noise	Noise and vibrations studies	S407	15	0.08
	Sum of the specific enforcement programmes					
Routine activities		Water	Sewer camera inspections		18	0.09
		Safety	Inspection of petrol stations		155	0.78
		Noise	Ad hoc noise measurements		74	0.37
		Waste	Sampling animal waste end products		23	0.12
		Air	Ad hoc emission measurements		74	0.37
		Operation	Rejection decisions		316	1.58
			Special conditions		802	4.01
	Sum of the routine activities					
Reactive actions			Complaints		1352	6.76
			Incidents		45	0.23
			Evaluation report trial licence		29	0.15
			Referrals		405	2.03
			Give advice		158	0.79
			Parliamentary questions		47	0.24
	Sum of the reactive activities					
Follow-up (enforcement instruments)					1802	9.01
TOTAL PLANNED						

Source: Environment Inspection Plan 2001, Environment Inspection Section of the Flemish government.

In the context of this plan, to be considered as a "project", an activity had to satisfy several criteria: being unique, producing measurable changes, having a well-defined content, and a precise start and end date. A project sheet and a milestones plan were produced for each project. The project sheet stated the need or environmental relevance of the project, its description and objectives, budget and personnel requirements, as well as a start and target date. Success criteria and external preconditions were also identified for each project (Box 2-2).

[19] Full-time units.

Box 2-2. Example of a project sheet

Project P724 "Scanning of oil refineries"

Project manager: **Core team:**

Necessity/Environmental relevance:

The oil refineries of the port of Antwerp are among the largest air pollution sources in Flanders and have a significant impact on other components of the environment. The multitude of environmental issues that may arise in relation to the functioning of refineries requires an integrated approach to be used. Furthermore, specifics of their production processes have to be taken into account.

Description/Objectives:

– Integrated inspection of the largest oil refineries (air, waste and water);

– Preparation of a status report and action plan for Nynas and Petroplus refineries;

– Examination of the air pollution self-monitoring methodology;

– Implementation of two programmes with (comparative) emission measurements of selected sources at one refinery for the traditional emission parameters (inspection of self-monitoring);

– Assessment of the compliance with emission limit values;

– Preparation of a similar approach for other refineries.

Success criteria:

– Status reports and action plans for Nynas and Petroplus (air, waste, water) prepared;

– Methodology of self-monitoring at all refineries examined.

Start date: 1 January 2001 **Target date**: March 2002

Personnel requirement: 91 days **Budget**: 109 thousand Euros

Not included in the project:

– Further follow up of the cases;

– Inspection with regard to Seveso II (safety);

– Assessment of fugitive emissions of volatile organic compounds, determination of dioxin emissions.

Source: Environment Inspection Plan 2001, Environment Inspection Section of the Flemish government.

Success criteria had to answer the question: "What must EIS staff achieve and when to say that the project has succeeded?" The external preconditions were defined as circumstances that EIS personnel had no control over but which were determinant for the success of the project. The most important stages and events of a project were specified with the date when they should be reached. This milestone plan also specified who was involved in achieving the milestones as the implementer, manager, or decision maker. Both new and on-going projects from previous years found their place in the plan. "Actions" meant co-ordinated assignments in a given sector. In a number of cases, the enforcement work of the EIS required support from applied scientific research. These assignments were described in a form similar to projects, but also specified the principal and the steering group. There was also a sheet for routine assignments.

It was particularly difficult to plan effectively reactive inspections. Using the data from the previous years, an attempt was made to estimate the necessary time. Several groups were distinguished: handling complaints, acting in the event of incidents, referrals from prosecutors, assessment of trial licences, and giving advice (for example, on environmental management and audit schemes or private wastewater treatment works). The reactive inspections plan did not mean responding to every call: the list of priorities played an important role and, during implementation, priority had to be weighted for each case.

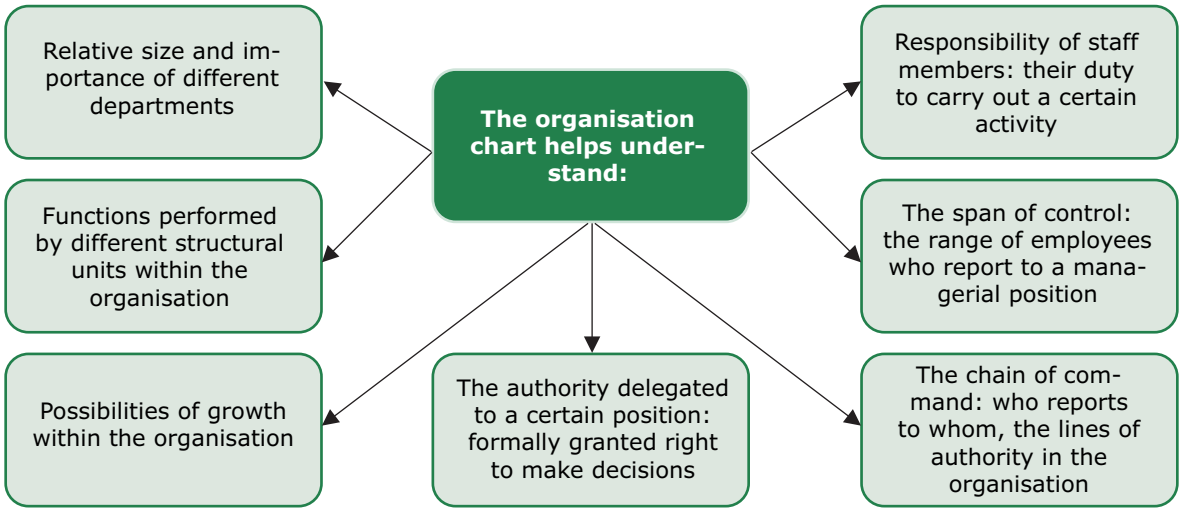
In producing the plan, it was decided to consider the following sub-processes when estimating the time needed for an enforcement activity: case preparation, travel and findings on site, inspection report and assessment of findings, report to Public Prosecutor and issue of first warning notice, and reporting (internal/external). A certain time was reserved for the case follow-up and presented in the summary table under “own initiatives and follow-up” section.

CHAPTER 2.2
DESIGNING ORGANISATIONAL STRUCTURES

2.2.1 Typology and assessment of organisational structures

Implementing strategy requires management to consider how the organisation should be structured. By definition, organisational structure refers to the ways the tasks and responsibilities are allocated to individuals and the ways that individuals are grouped together into directorates, departments, divisions, etc. The structure designates formal reporting relationships and defines the number of levels in the hierarchy.

Organisational structure can be illustrated through organisational charts. These charts usually show the departments, the title of each management position and, using connecting lines, show who is accountable to whom and who has responsibility for which department. While charts are useful tools for understanding structural dimensions, they have their limits in describing an organisation, for instance they do not reflect communication channels and information flows between departments.



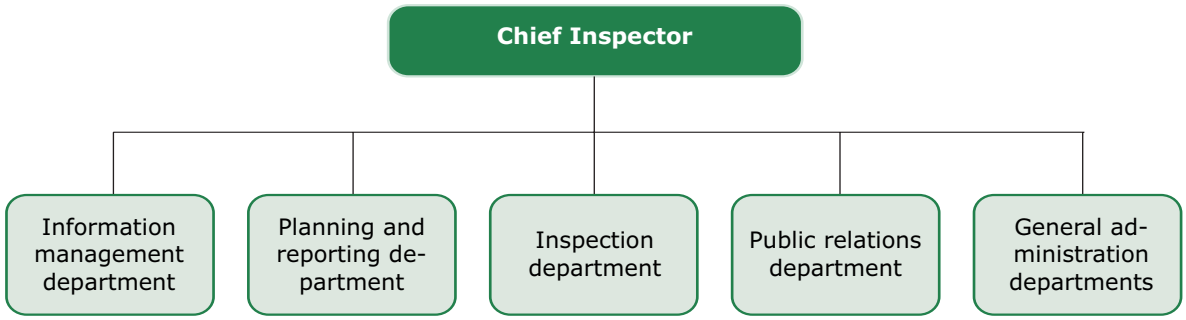
Source: Adapted from Darbelet, M. et al. (1995), Economie d'entreprise, Hatier, Paris.

Many **types of structure** can be adopted by an organisation; the major ones are as follows:

Functional structure

A very popular type that is constructed around the division of labour according to several criteria and **based on the belief that specialisation brings greater efficiency and higher output per person**. Several advantages and disadvantages of functional structuring can be identified. The positive characteristics are: focus on organisation's responsibilities (mandate); effectiveness, improvements and innovation within a department due to synergies in the interaction of its members; lower turnover of personnel rooted in the unity of professional interests; easier management and more efficient staff development that is centred around standard types of functional skills.

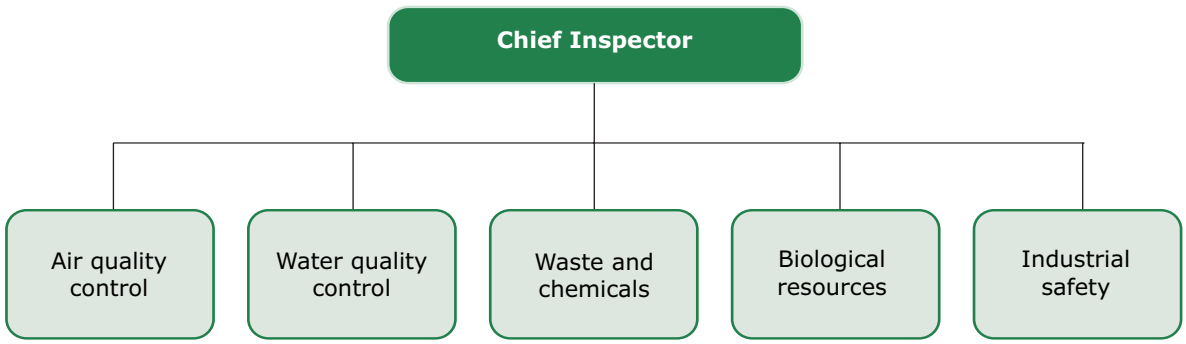
On the minus side, the functional structure creates a narrow perspective of the organisation among its members where common objectives are not perceived in their integrity and where communication among departments becomes difficult or even distorted by group interests. Thus in functional structures the managers will need to coordinate activities so that the common goal is achieved and each department is able to contribute to this in the most effective way. Any inspectorate will possess a functional structure, though with different grades of elaboration. This structure may be quite usual for higher levels of the organisation's pyramid.



Product divisional structure

In enterprises, this structure is used when several product categories are manufactured. In environmental inspectorates, "products" would be equal to "issues", "industry sector", or "media controlled". The product divisional structure can find its place at any level of the organisational pyramid, depending upon the size of organisation: in large organisations product divisional structure may be followed by functional structure; in smaller organisations these two, most often, will function in parallel. The option where product divisional structure follows the functional structure should not be excluded either. For instance, inspection departments can be organised according to media controlled.

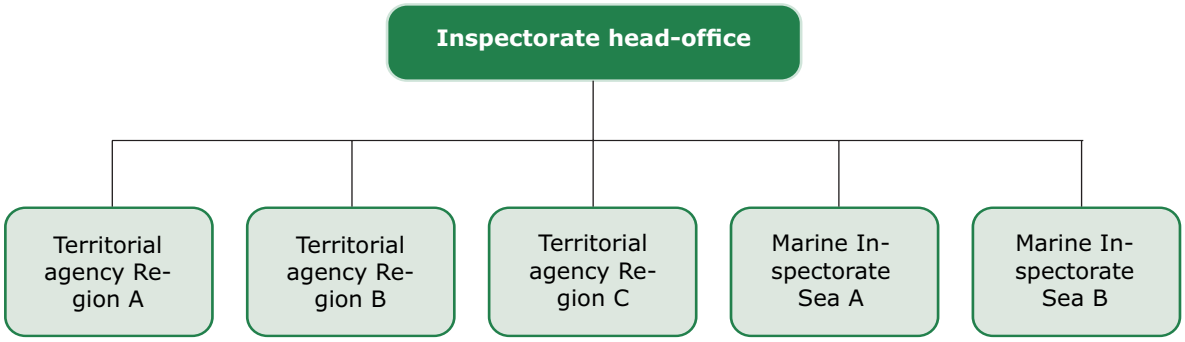
This type of structure brings the advantage of focusing on results (*e.g.* state of certain media) and greater orientation towards customer (public) service and satisfaction, as well as easily identifiable accountability for results achieved. Furthermore, it encourages the development of management skills within the organisation. However, structuring based on product (issue) criterion, especially at the first level of organisation, can be more expensive because more "functional" personnel may be needed, can bring dissonance in application of procedures and policies across the organisation, and cause dissatisfaction of customers when they are asked to deal with too many departments. In fact, converting product divisional structure into functional structure may bring impressive savings in administrative costs.



Geographical divisional structure

This type reflects the need to set up regional or local offices. Inspectorates may wish to allow their regional offices to work as autonomous units where decision making is independent but guided by the policy decisions made at the head office. The head office would provide services and support without being closely involved in the day-to-day management of the regional office. While managers of regional offices may take decisions, this is limited as compared to a completely separate organisation.

This structure brings the benefit of "proximity" – to environmental problems, their causes, and the general public to whom service is delivered. But, similarly to the previous type, it involves higher administrative costs. In addition, a narrow geographical perspective and focus on local problems may hinder the solution of problems having a wider coverage/origin that one specific area.



Matrix structure

A type constructed around projects where people work in a team to achieve projects' goals. A project may cover selected or all departmental areas in the organisation. Often, people working on a project have dual subordination to the manager of their permanent department and to the leader or manager of the project. For instance, a waste sector inspector will be assigned to the project on enforceable licensing, then on inspection prioritisation, and so on.

The matrix organisation is advantageous for sharing information and enabling people to coordinate their efforts with larger organisational goals and strategies; it increases the cost-efficiency and flexibility within the organisation. However, dual subordination of staff can be confusing. Conflicts over personnel and budgets may appear. More time is spent on meetings to share information. Finally, working in a matrix structure can put too much pressure on functional employees and lower their motivation/capacity to deliver high quality service.

Projects	Air Dept.	Chemicals Dept.	Water Dept.	Noise Dept.
(1) Development of integrated inspection procedure	Specialist A1	Specialist C1	Specialist W1	Specialist N1
(2) Fuel stations control	Specialist A2	Specialist C2	Specialist W2	Specialist N2
(3) Chemicals control	Specialist A3	Specialist C3	Specialist W3	Specialist N3

Horizontal structure and downsizing

This type appeared as response to inefficiencies that organisations accrue after growing in size and multiplying their organisational layers. The horizontal structure is a structure with fewer hierarchical layers. Restructuring that leads to this type is usually called "downsizing" and is accompanied by two major and inter-related changes: (a) eliminating one or more hierarchies, often at the level of middle managers, and (b) delegation of decision making to a lower level who is closer to customers. The goal is to reduce costs and bureaucracy, but warning should be made against continuing to refer most decisions to higher level that can overload top managers.

It is hard to find two inspectorates with identical structures. Adoption of differing structures by organisations with a similar mandate is not contradictory: a number of determinant factors can limit the choice in each case, due to some of their peculiar combinations.

Several factors may influence the choice of one structure over another				
Scope of activity: *e.g.* pollution control or nature protection	Complexity of the regulatory framework and instruments utilised	Size of organisation and increasing specialisation	External environment: political, economic, social	Strategy: preventative versus punitive approaches

Since these factors are in a constant evolution, adjustment of the structure will be necessary. For instance, in a complex and very uncertain environment, the best choice might be the matrix structure; if the complexity remains but uncertainty diminishes, many organisations may prefer the functional structure. In any case, successful organisations are those who take account of their environment and other determinants.

Assessing the current organisational structure

Assessing the current organisational structure will be generally useful, although standard rules do not exist to determine how appropriate the structure is as compared to strategic goals. A simple checklist, however, can help managers to form a general understanding of effectiveness of their organisation:

- Is the structure compatible with policy objectives, legal mandate and the strategy of the inspectorate?
- Are there too few or too many hierarchical levels?
- Does the structure promote coordination among its parts?
- Does the structure allow for appropriate centralisation or decentralisation of authority?
- Does the structure permit the appropriate grouping of activities?

2.2.2 Organisational growth and size of inspectorates

Organisations, as any other systems, go through various stages of development. "Embryonic" organisations are often characterised by impulsive, highly reactive decisions in response to changes in the internal or external environment and are mostly driven by the willingness to «stay in business», as opposed to more mature organisations where a better sense of perspective exists and decisions are well grounded.

The development of inspectorates can be divided in three major phases that will highly depend upon the sophistication of inspection approaches and inspectors' skills. In Figure 2-1, some features

present at different phases of development are listed. Inspectorate managers may use this framework to understand the degree of maturity attained by their organisations and needs for further development.

Figure 2-1. Key features of inspectorates and inspection systems at different phases of development

	INSPECTIONS	INSPECTORS	INSPECTORATES
PHASE 1 ⇩	■ Clarifying compliance on visible and relatively simple elements ■ Single media inspection ■ Inspection is often part of an overall task	■ Limited technical skills ■ Limited cooperation with colleagues of other 'inspecting' bodies	■ Not necessary to have an inspectorate ■ Personnel can be hired from consultancy firms ■ Single skills needed
PHASE 2 ⇩	■ Influencing behaviour by the use of legal instruments to achieve full compliance on all 'non-hidden' offences	■ Medium/high level technical, legal and communicational skills ■ Cooperation with other 'inspecting' bodies grows ■ Start of diversification of inspector's roles (development of specialisation)	■ Diversification of skills under development ■ Training programme for inspectors and managers ■ Managed system, including monitoring of inspection results ■ Drafting of inspection and enforcement policy ■ Start of networking
PHASE 3 ⇩	■ Investigating in depth; searching for 'hidden' offences, including criminal behaviour ■ Using administrative inspections ■ Inspecting self-monitoring systems	■ High level skills: technical, legal, communicational, tactical and managerial ■ Knowledge/skills in administrative inspections ■ Cooperation is essential	■ Autonomy is essential ■ Advanced monitoring system and communication policy ■ Communication lines with judicial authorities are open (information flow) ■ Role in (inter)national networks

Source: Bakx, R. (1996), Preparatory meeting IMPEL working group "Minimum criteria for environmental inspections"

The development and maturity of organisation leads also to growth in size. The **optimal size of the inspectorate** depends upon many factors:

- The actual involvement of the inspectorate in all elements of the inspection system;
- The scope and extent of environmental requirements that have to be met, the complexity of the environmental regulations, and the type of inspection that is asked for;
- Desired ratio of inspectors to number of facilities that require inspection;
- Expected level of non- compliance;
- Administrative and management resources needed to support inspection and permitting activities (where applicable);
- Complementary responsibilities with other governmental agencies.

The ratio of inspectors to the number of facilities to be inspected is the most critical factor affecting the optimal size of the inspectorate. It is related to the above factors as well as the level of experience of inspectors, the complexity of the facilities to be inspected, and the inspectorate's strategy. Given the specificity of each context, other countries' figures have minimum relevance.

CHAPTER 2.3
ORGANISATIONAL CULTURE AND LEADERSHIP

2.3.1 Establishing a modern organisational culture

Organisational culture is the sum of shared values, symbols, meanings, beliefs, assumptions, and expectations that organise and integrate a group of people who work together.

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The way in which people behave and deal with their colleagues, especially the style of management, are very important for the fulfilment of the organisation's objectives. A proper organisational culture and sharp objectives can stimulate staff to work more effectively and efficiently. An organisation's climate where people know what to do, feeling appreciated, supported and stimulated, has proven – all over the world – to create success.

An adequate organisational culture lies at the foundation of any successful organisation, including an environmental inspectorate. Organisational culture is the sum of shared values, symbols, meanings, beliefs, assumptions, and expectations that organise and integrate a group of people who work together. Organisational culture is basically an organisation's personality. It comprises assumptions, values, norms, and tangible signs of staff members and their behaviour. Organisational culture can be looked upon as a system. It can be sensed (atmosphere), it can be heard (jargon), it can be seen (dress-code).

There are generally two types of extremes in culture: participative and authoritarian.

- **Participative cultures** have the following characteristics: teamwork, cooperative departments, decisions made by consensus, openness to new ideas, two-way symmetrical communication.
- **Authoritarian cultures** have the following characteristics: rigid management control, advancement based on contacts rather than performance, being closed to ideas other than from the top managers, decisions based on tradition, one-way communication, or two-way asymmetrical communication.

Another way to divide communication styles is as follows[20]:

- **Centralisation** is a characteristic of organisations that keep decision-making power at the top management level. Centralisation is associated with communication that is primarily one-way, downward, from superiors to their subordinates.
- **Stratification** is implicit in the levels of income and prestige in an organisation, and the ease of mobility between low and high-ranking positions. Stratification is also associated with one-way, downward communication.
- **Formalisation**, the third variable, indicates the stricture of organisational rules and their enforcement. Formalisation controls workers, rather than co-ordinates workers, as communication does.

[20] Robbins, S. (1997), Essentials of Organisational Behavior, Fifth Edition. Prentice-Hall, Int. London.

– **Complexity** includes the number of occupational specialities found in an organisation, the level of training required for these specialities, and the number of departments and job titles. Complexity helps to clarify the variety of communication styles that might help or hinder messages.

Every company, every government organisation, every ministry, even every single department has its own (sub)culture. Sometimes very different, sometimes very close to others. Culture generally has a long period of development and it can take quite some time to adjust it. Culture can stand in the way of the achievement of an organisation's targets.

2.3.2 Internal communication

Internal communication is the management function that helps identify, establish and maintain relationships between the organisation and its employees. The internal communication in environmental inspectorates is an important aspect in their proper functioning. Well-designed internal communication can help employees understand organisation objectives then adapt behaviour and workplace processes to achieve these objectives. Sociological research quite often finds that employees want to understand why and how decisions are taken and learn management strategies from their immediate superior.

The days of internal communication being a matter of 'just tell them' are over, at least in the democratic world. The authoritarian approach will have little positive impact on employee motivation and behaviour change. Certainly, it requires courage to ask an entire organisation to change their methods but trying a participatory, face-to-face communications approach will be worth it.

Successful organisations are those that use information dissemination and practice leadership to support strategic goals, issues, and operational changes that are necessary for the growth and the survival of the organisation. The lay out of the information and the way in which it has been built up and presented, are very important. It should be easy for employees to absorb it. Managers should also tell the employees why the information is important and how to use it. Accountability along the management lines will help in sending messages up, down and across the organisation.

In most organisations there will be internal communication barriers that originate from managerial behaviour or from the organisation's culture or structure (Box 2-3). This kind of barrier often leads to a loss of efficiency and effectiveness, to higher costs to fulfil the organisation's targets, to poor morale, and to needless frustration.

Box 2-3. A list of internal communication barriers

Job insecurity

This barrier harms good morale, which in turn affects good communication. Some managers appeal to fear as a motivator and a way of controlling their staff. And while it may appear to serve a purpose to these managers, they are unwittingly impeding their staff's performance by negatively affecting concentration, judgement, and other cognitive skills that are affected by job insecurity. Creating a positive environment can greatly improve communications.

Isolationism

While team spirit and a sense of department identity can be a positive force, some managers create an "us and them" mentality among their staff. Not only is this a negative attitude, but it stifles individuals from learning more about the company's operations. Also, it precludes staff from developing a whole team image and diminishes job satisfaction.

Lack of cooperation

This barrier does not always appear in the form of outright refusal. Instead, it can appear as forgetfulness ("I'm so sorry, it just slipped my mind"), lack of understanding ("I don't know what you mean"), misunderstanding ("Oh, I thought you meant ..."), or a difference in priorities ("I'm sorry, but I won't have time to get to it"). Either way, it blocks the proper flow of information and production.

Process slowdown

This barrier is manifested by long gaps between completion of one phase and commencement of the next phase. While one might expect it to be rather obvious, it is often undetected until the resultant damage is too great to endure financially or politically. If your inspectorate is experiencing productivity decreases, quality problems, and lowered staff morale, the chances are that you have this problem.

Lengthy meetings

Endless and aimless meetings serve to demotivate and tune out the participants. Consequently, potentially valuable and necessary information can be filtered out or overlooked. This barrier to effective communication is probably one of the most frequent.

Good guys/bad guys

Whereas isolationism pertains more to entire departments, good guys/bad guys is a form of political war games. This barrier seeks to pit members against each other - the good guys against the bad guys. This may happen between members of the inspections department and members of the licensing department, or between members of the inspectorate and policy makers at the ministry. Either way, it creates a combative mentality between individuals mostly for the purpose of gaining or exercising control.

Silence

This barrier can be camouflaged to look like harmony. Yet, it results in the blockage of valuable information between people and/or departments. It is not necessarily the deliberate destruction or discarding of information, but rather the selective filtering or complete transfer of information. For example, the licensing department head might become aware of something that adversely affects the inspection department (e.g. a change in the technology used by a company). Yet, he fails to communicate that information to the inspectorate manager. Such silence can be contraproductive.

"Walls"

When operating departments create barriers so that attempts to provide incoming communication are thwarted (e.g. "Those guys do not know what they're talking about. Do not rely on what they say."), valuable information is lost.

On/off meeting schedules

Because people's schedules don't always conform, a frequently changing meeting schedule can increase the likelihood that one or more people will not be able to attend a given meeting. This obviously thwarts good communication.

Source: Based on *Leadership - How are you doing?*, http://www.management-advisory-group.com

Internal communication in environmental inspectorates is not very different from that in other organisations. The better people are informed, the better they will be able to do their work, to develop their skills and to take responsibility, increasing the organisation's effectiveness and efficiency. Information can be transferred (and discussed) by, for instance, a weekly team meeting by the team manager and all other team members, on items like:

- Inspection results from the past week;
- The fulfilment of the inspectorate's targets and programme;
- Bottle-necks in the execution of the inspectorate's work (*e.g.* legal aspects, public information supply, integrity, use of the inspection and enforcement strategy);
- Management decisions and foreseen management decisions in the field of strategy, with regard to human resources;
- Developments in the inspectorate's surroundings with a possible influence on the inspectorate's work and success;
- Briefing on the activities for the week to come, etc.

By stimulating an open culture with mutual discussions and cooperation, managers can support the flow of information between workers. This helps to prevent gaps in the information level of

employees. On the other hand there should of course be a balance. The inspectorate should not turn into a sort of "chat-box". Meetings should be managed efficiently and effectively and not exceed the time set for them.

Management decisions that have an influence on the way in which the work is carried out or on the legal position of the employees (e.g. working times, holifays, labour safety aspects, etc.) should be traceable for the employees – not only by mentioning these points in the weekly meeting, but also in a structured way on, for instance, an Intranet site or in hard copy files in the office that are open and accessible to all employees.

2.3.3 Management styles as a function of task-maturity within organisations

A manager, who is **task-oriente**d, focuses only on structuring the task(s), planning activities and setting their following order, and providing the right equipment. The **relation-oriented** style of management covers all behaviour aspects and focuses on realising and supporting the needs of the employees and the group, for instance, appreciating contributions, solving differences of opinion between team members, and giving social support. The balance between the task- and relation-oriented approaches is determined by the so-called '**task-maturity' of the staff members**. Task-maturity is the extent to which staff members are capable of taking personal responsibility for the execution of a certain task, based on the will to do so and on knowledge, skills and experience. Task-mature employees are willing and capable to carry out tasks appropriately and autonomously.

In the case where the task-maturity of the employees or the group as a whole is low, the manager has to put more emphasis on the task-oriented approach and less on the relation-oriented in order to let the group achieve results and thus to learn the task. This management style is called **directing**. The manager pre-structures the task and indicates how it has to be carried out.

In a situation where there is increased task-maturity, the manager has to decrease his task-oriented and increase his relation-oriented behaviour in order to let the team-members grow further in task-maturity. This means a shift towards a more supporting and **coaching style** of management. In a coaching style the group is involved in issues like allocation of tasks and other matters of execution. In a **supporting** style the task is left to the group or the employee, and the manager limits him/herself to giving support.

After a further increase of task-maturity, the manager can limit himself to pre-conditional aspects, since the group has sufficient self-discipline and skills to carry out the task(s) autonomously. This management style is called the **delegating style**. The task is fully left to the group or the individual employee.

Table 2-2. The behaviour of a manager depending upon the task-maturity of employees

Management style	Task-maturity of employee	Needed behaviour of the manager
Directing	Is not aware of "what and how"	Exactly indicate what has to be done and how that result can be achieved
Supporting	Partly meets the requirements, but misses specific capabilities	Offer room for participation to see where exactly the need for support exists and supply that support
Coaching	Rather independent, but needs tuning and adjustment	Involve staff members and the group in the decision-making process and strive for consensus
Delegating	Can solve problems completely independently	Describe the task and ask for accountability afterwards

Source : Robert Heller (1999)

An increase in task-maturity of staff members causes a shift of the task-oriented towards the relation-oriented management style (participation and support), until finally – in the delegating style – the group takes the full responsibility. In this situation the role of the manager is limited to creating conditions for the team, such as:

- Coming to a result-oriented approach;
- Creating and preserving external conditions, like support by staff units, availability of budgets and other resources;
- Enabling further team development;
- Participating in further improvement of process, product and organisation development.

This means that an increase of task-maturity will not lead to the disappearance of the management task. Instead of being internally focussed, the manager can focus externally, for instance, on other departments in the organisation, other authorities, the public, the industry, etc.

The four styles discussed take into account task-maturity. Other management styles exist where this element is not a matter of specific consideration. Examples are the 'command-and-control' or the 'order-and-obey' styles. It will be obvious that these two styles are less suitable for the support of staff with a high degree of self-discipline. People with this qualification generally enjoy taking responsibility. The higher educated and skilled employees are (and for many of the inspectorate staff this is the case), the more the manager can rely on this self-discipline. To allow a delegating approach to work well it is important to provide people with clear targets. A properly balanced combination of styles (depending on the task-maturity of each individual and group), supplemented with clear targets, will provide for the best results.

2.3.4 Understanding staff behaviour

People's behaviour is an important element of organisational culture. The way in which people are managed has a deep impact on their behaviour at work. In order to let people behave in the proper way, to do the right things in the right way, it is useful to direct management methods to suit different people and different situations. A manager's aim is always to **encourage people to motivate and manage themselves** in order to achieve the organisation's targets. Managers, their style of management, their own behaviour, have great influence on corporate culture. A manager who shows more interest in his personal enrichment than in his organisation's interests will not be able to motivate people to have a strong corporate feeling. They may even start showing similar behaviour to the manager's.

Staff's behaviour expresses culture to an important extent. Natural, instinctive behaviour is not always appropriate in the workplace. By influencing behavioural patterns, managers can bend them towards productive and effective teamwork.

By nature, people at work tend to adopt instinctive modes of behaviour that are self-protective rather than open and collaborative. This explains why emotion can be a strong force in the workplace and why management may react fiercely to criticism and usually seeks to control rather than to take risks. Also people tend to leap to conclusions and may fragment into small, sometimes hostile, groups. Organisations exhibiting "natural" behaviour in this way are highly political and emphasise status and hierarchy. They are less pleasant to work for and generally not in line with the needs of people.

Natural behaviour is based on subjective responses that can often lead to negative feelings (such as insecurity), or to mistaken perceptions concerning the intentions of other staff members.

Co-operation can be encouraged by more constructive behavioural attributes, by openness and by self-confidence. According to management guru Robert Heller, some readily recognisable traits of people with appropriate behavioural skills include:

- A proven facility to communicate positively and confidently with colleagues at all levels;
- The swift and generous recognition of the achievement of others;
- The ability to learn from mistakes and failures;
- A general approach that is based on collaboration with fellow workers rather than competition.

The following table shows how Heller thinks negative characteristics in behaviour can be replaced by changing natural behaviour towards appropriate behaviour.

Table 2-3. Replacing negative characteristics in behaviour.

Natural behaviour	***Appropriate behaviour***
Reacting emotionally when information is received	Establishing the facts using a pragmatic approach
Avoiding risks through fear or insecurity	Taking risks in an entrepreneurial fashion
Fighting fiercely and defensively when under threat	Forming collegiate, collaborative, non-combative relationships
Making snap judgements about people and events	Insisting on detailed analysis before judgement
Spreading group gossip throughout the organisation	Practising totally open communication
Competing for status and its symbols	Recognising achievement, not status
Dwelling on past successes	Learning from mistakes
Feeling more comfortable in small factions	Choosing to work in co-operative groups
Always seeking hierarchical superiority	Operating within flat, non-hierarchical structures

Source : Heller, R. (1999) Essential Managers: *Learning To Lead,* DK Publishing.

Understanding staff's behaviour is half the solution to a manager being able to change that behaviour. In Annex 2-2 a list of reactions that contain a form of obstruction and that commonly occur are shown. Annex 2-3 provides managers with hints on how to influence the culture of the organisation. Together, they give a good number of indicators and hints to start changes in organisational culture.

2.3.5 Ensuring staff commitment

Committed employees are very valuable. Managers can gain the commitment of employees by meeting their key needs. They should pay attention to people at all levels. It is important to accept individuality and to create and maintain a blame-free, "can-do" culture, giving trust and receiving trust. Altogether this is crucial for the development of the organisation through its staff.

People need to feel that their contribution is valued and unique. Pride in work can have an individual and a collective form. Collective pride can be part of the organisation's culture. Managers seek to exploit this pride in their staff members. Both management and staff should feel proud to belong to an admired organisation.

Table 2-4. Sources of work satisfaction of staff members.

Lower-level needs	Higher-level needs
Conditions Reasonable hours, a pleasant environment and adequate equipment ("I approve the physical working conditions")	**Job interest** Satisfaction derived from the actual job contents and its execution ("I like the kind of work that I do")
Supervision Empowerment and encouragement given by immediate managers ("I like the way I am treated by those who supervise me")	**Achievement** Motivation to hit targets and to perform tasks at high levels of effectiveness ("My work gives me a sense of accomplishment")
Security Confidence in the organisation's outlook and a feeling of belonging ("I feel good about the future of the organisation")	**Commitment** Pleasure through belonging to the organisation and identifying with it ("I am proud to say I work for the organisation")
Management An understanding of management methods ("I think the organisation is making the changes necessary to be competitive")	**Responsibility** Work requirements that stretch the individual but are fair and rewarding ("I welcome the amount of work I am expected to do")
Communication Full awareness of the organisation's plans and involvement in the planning ("I understand and identify with the organisation's strategy")	**Identification** People understand how they fit into the overall plan ("I see how my work connects with the organisation's strategies")

Source : Heller, R. (1999) *Essential Managers: Learning* To Lead, DK Publishing.

The "can-do" atmosphere should be built on mutual trust, in which people, whatever their self-doubts, are sure that the organisation can achieve whatever it is asked to do. Actual achievement is essential to foster this confidence. For instance this could be done by starting projects at every opportunity, choosing tasks that have a clear purpose and a positive measurable outcome. Also seek to create "heroes" – well respected and productive employees that other staff members admire. Be sure to celebrate each hero's successes. This not only bolsters the hero's self-belief, but also encourages others to trust in the can-do culture and to commit to the organisation's targets.

Openness and responsiveness to people's spontaneity and originality will generate a positive atmosphere in which creative ideas can flourish and demotivating boredom is reduced. Informality and a reasonably tolerant acceptance of inevitable mistakes by staff will generate an environment in which recognition for success, rather than blame for failure, is the dominant culture. Managers should take every opportunity to generate excitement over the achievements of the organisation and its individual staff members. This is also applicable to future challenges.

In some organisations there is a sphere of "thinking in problems", instead of "thinking in solutions". This generally blocks progress. People tend to be passive and do not really believe that things can or will change. Result is a self-fulfilling prophecy.

Managers are crucial in creating a sphere where people (start to) believe in possibilities to improve their personal situation and the position of their work and organisation. This requires a pro-active approach. Reactive approaches and especially being part of the 'problem-oriented' approach by managers themselves will not create solutions and progress. A manager's attitude therefore is to be pro-active and solution-minded (of course after a good analysis of the problems and future difficulties).

2.3.6 Building trust

Before people open up to their managers, there must be trust. It is important for managers to build on that. This takes time. The period of time can differ considerably between staff members. People are not the same and do not feel confident equally (fast). Trust can be built by giving recognition, high-level tasks and full information. Major factors in gaining employees' trust and commitment are quality and style of leadership. Decision making should be clear and coupled with a collaborative, collegiate approach. Taking people into confidence and explicitly and openly valuing their contributions are essential elements. Furthermore managers should make themselves as visible as possible. They must show themselves to be approachable and willing to listen to others. Collective ambitions help people to identify themselves with the organisation. Managers must (learn to) trust those who work for them, in order to earn trust.

By nature many people experience all kinds of fear in their jobs. Fear of personal failure, fear that the organisation will fail, that jobs will disappear, fear of the possible adverse consequences of change. These fears are rational and can only be eased, though never completely eliminated, by full, frank and open communication. Anxieties can be increased by secretive management, using fear as a means to control people. Managers that drive out fear will find that trust, optimism, and kindness are much more effective.

Trust and commitment from employees can be promoted by the use of some important managerial qualities:

- Pride in telling others about the organisation;
- Sense of ownership in the organisation;
- Willingness to work long hours;
- Holding personal values consistent with those of the organisation;
- Creating a strong sense of team spirit;
- Feeling personally involved in the work;
- Commitment to the organisation.

Do you exhibit trust?

- Are you always truthful, keeping your promises, thus building up trust in others?
- Is your level of trust in others such that you can delegate effectively?
- Do you show your trust towards your people so that they will not let you down?
- Will you fully leave the task to your employee (without interference) after briefing?

Research has shown that most management activities are directed toward intellectual needs, some attention is paid to the expression of individuality, but even less attention is paid to emotional needs. By giving equal weight to all three areas, a manager is more likely to win the minds, spirits, and hearts of his employees. The means to achieve this include: allowing people some autonomy in creating their work environment, making them feel valued by openly recognising their achievements, and empowering them by handling over as much control as possible. But also listen to unhappy employees, they may reveal important problems.

People tend to learn by example. This is also the case in organisations. A manager is likely to be a prime role model in his team, the person setting the tone. Employees expect their manager to set a positive example. It is therefore very important for a manager neither to fall below the high standards that he sets himself nor to behave disparagingly to members of staff who do fall short of them. Above all a manager should behave consistently at all times.

According to research there are ten personal qualities that are the most admired characteristics of respected managers. These qualities have less to do with making the right or wrong decisions and more to do with integrity and straightforward behaviour. These qualities are in at random order: competence, supportiveness, charisma, honesty, intelligence, courage, broad-mindedness, directness, vision, and fair-mindedness.

For managers it is of utmost importance to keep their staff committed. A very effective way to do so and to raise retention, is to enrich jobs and increase motivation, for instance by raising interest levels, ensuring that each employee has a stimulating variety of tasks to perform, and providing the resources and training through which new skills can be developed. Motivation can be further improved by permanently encouraging staff to make suggestions for improvements in efficiency.

In order to maintain a staff member's commitment and job satisfaction it is vital to show acknowledgement of excellence. Furthermore the recognition of a popular leader encourages others to show commitment. The same goes for the public celebration of successes.

Managers need to motivate their people. It is far less motivating for staff members to receive orders than to take part in planning and decision making. Staff should be enabled by their managers to achieve their ambitions and to manage themselves towards the desired results. Robert Heller distinguishes a number of motivating factors. Except for a decent income these factors are for instance (in random order):

- Expertise (encourage development of special knowledge);
- Competence (provide training to develop key skills);
- Self-confidence (make sure that allocated tasks can be done well);
- Self-respect (increase the individual's regard for self);
- Achievement (agree on targets that are achievable);
- Membership (ensure employees enter "club" of co-workers);
- Self-fulfilment (enable employees to take on challenges);
- Recognition (tell employees how well they are doing);
- Peer respect (celebrate the individual's success publicly);
- Autonomy (allow employees to plan and design own work).

Delegating powers to staff reduces pressure on the manager. Besides that, it motivates people on the lower levels because of the feeling of confidence it creates, but also because decisions are taken nearer to the point of action. These decisions are therefore more likely to be correct. Managers should only take decisions that can be taken only by them. Even then however, they could (and should) make use of all possible and useful input from others.

CHAPTER 2.4
HUMAN RESOURCES MANAGEMENT

2.4.1 General considerations of staff recruitment

Is it sufficient to hire inspectors who have a medium level of vocational training, or should they always have a university degree? Or could we differentiate depending on the sort of inspection work? Should inspectors always be technicians or is it possible for them to have a background in accountancy or law? What kind of skills do we need from an inspector, or can this differ as well? What kind of attitude do we expect? What level of moral standards do we expect from an inspector?

The managers of environmental inspectorates will always look for answers to these questions, since they shape one of the most important elements in the successful operation of an inspectorate – the quality of its human resources. The current section describes inspector's qualification in the context of a competence management system and provides the basic information for staff selection.

Over the past few years many environmental inspectorates targeted quality improvements. Minimum quality criteria (standards) for inspection were developed and commonly accepted in many countries, for example in the member states of the European Union. Although criteria for environmental inspectorates (inspection) are still quite new, discussions on quality criteria for inspectors have been launched nationally and internationally. These criteria aim to reflect the **qualifications of an inspector**. The notion of "qualification" is defined as the set of knowledge, skills and attitude. The type of inspectors needed determines the mix of these elements.

Rarely can the same person incarnate all qualifications required, but managers should try to get as close as possible to the mix of qualifications they need during the selection procedure. A mandatory step in this process is determining a minimum level for entrance into the organisation.

Developing **job descriptions** is instrumental for better understanding and communicating to others what kind of personnel the inspectorate needs. Indeed, in order to select the proper staff it is of importance to describe the qualifications you want the staff member(s) to have. People applying for the job, whether they be internal or external, must know what the organisation needs from them. A description of the qualifications forms the frame of reference during interviews with candidates and the rest of the selection procedure. The system of competence management (see next section for details) can be of great help to this, since it focuses on realising the organisation's objectives through staff that is qualified in all its aspects to do the work.

The job description can tell in a brief form, or with abundance of details, what qualifications are needed per function. The level of details will be a managerial decision. The toolkit gives some guidance for both cases. No matter how detailed the job descriptions are, the **key criterion in developing a job description and hiring staff** will be the relevancy of staff member's qualifications to the achievement of the inspectorate's objectives. In Annex 2-4 a number of job descriptions can be found that have been used for recruitment and selection of staff of an environmental inspectorate. These descriptions were not directly linked to a system of competence management. They were, however, used as a frame of reference for the assessment of the functioning of the relevant staff members and as a basis for the training program of the inspectorate.

2.4.2 Staff selection method

Hiring the right staff is one of the toughest management elements, determining what talent the inspectorate needs to be successful, then finding the time and know-how to recruit these people. Successful hiring may be expensive and time consuming but brings benefits in long-term. Unsuccessful hiring can seriously damage to the inspectorate.

What makes hiring even more challenging than bookkeeping, inspection planning, or many other challenges, is that help with the hiring process is difficult to find. The key to helping yourself through the process of finding the right person is to develop a clear idea of what you are looking for. This description must include both the duties the job entails and the competencies of the person who is best suited to those tasks. Once you have a description, success hinges on asking the right questions during the interview process. Throughout the entire hiring process, you also need to evaluate candidates to determine how they will mesh with your inspectorate's culture and the team members you have in place. They need to be in synchronisation with your inspectorate's personality, standards, and vision.

The "hiring tool" described below[21] provides inspectorate managers with the elements needed to conduct successful recruitment. This tool will:

- Help to develop an accurate job description;
- Lead the user through a series of work-related and personal character traits to help determine what is wanted in an employee;
- Generate a customised worksheet that can be used to evaluate various candidates for the vacancy;
- Provide sample interview questions that can assist in determining whether a candidate is suitable for the job.

Consecutively, the tool will discuss: (i) job title; (ii) job description; (iii) experience/education; (iv) work style; (v) temperament; (vi) work skills; and (vii) job description worksheet.

Job title and job description

Choose a job title that reflects the responsibilities of the person you are looking to hire. Write it down on the job description worksheet. Examples of job titles include:

- Technical inspector;
- Senior technical inspector;
- Waste substances inspector;
- Administrative inspector;
- Administrative assistant;
- Head of inspection office;
- Enforcement policy-maker;
- Enforcement information analyst, etc.

[21] Based on the methodology used by the Regional Environmental Inspectorate of North Holland, Netherlands, 1993.

Job description

Take some time to think about what the employee will be doing for the inspectorate. Think of all the duties this person will perform on a regular basis, then prioritise their importance. The responses will be collected and included in the worksheet at the end of this process. This worksheet will then be used to help focus on the exact needs.

Next, briefly summarise the key responsibilities of the person to be hired (no more than 25 words, for example: "Will inspect medium sized industrial companies on compliance with environmental legislation.").

List the top five duties this person will perform for the inspectorate, for example:

- Inspect technical aspects in medium size companies;
- Draft notices and enforcement reports;
- Provide feed-back to policy level on enforceability of legal provisions;
- Contribute to the development and drafting of inspection programs;
- Contribute to the development of inspection tools.

Also a number of questions describing the job characteristics can be drafted in advance to contribute to a focussed selection process. Examples are:

Will this person be managing others?	☐ Yes	☐ No
Will this person meet with companies and the public?	☐ Yes	☐ No
Will this person be promoted as your inspectorate grows?	☐ Yes	☐ No
Are you willing to train this person?	☐ Yes	☐ No
Does this position require industry contacts?	☐ Yes	☐ No
Does this position require any special skills?	☐ Yes	☐ No
Other		

Experience/Education

It is essential to clarify what kind of industry or job experience recruits should have. Is it necessary for this person to have knowledge of environmental inspections? Are the skills required to perform the job unique to environmental inspection or are they transferable from other lines of work, with or without certain similarities to environmental inspection? Is the investment in time and resources in training someone to work in the inspectorate or in this position? Will the candidate's education level have a bearing on their ability to execute the job responsibilities?

A. What level of job experience will be required for this position? (Select all that apply)	**B. What level of education is necessary for this position? (Select one)**
☐ No previous experience necessary	☐ High school graduate
☐ Experience working in environmental inspectorate	☐ Some college
☐ Experience working in a similar position	☐ College graduate
☐ Experience working in a position with related skills	☐ Graduate degree
☐ Has job-specific resources/contacts	☐ Industry or job-specific certification
☐ Has industry specific knowledge	Other details
Other details	

Work style

Every person has a unique work style, so the type of employee suitable to the inspectorate needs to be clear. The way this person works needs to correspond with the way the inspectorate conducts the work. For example, a person who thrives off the energy of others will not work well in an organisation where everyone works alone. Analyse how successful people in the inspectorate work, then answer the following question.

Which of the following traits best describe the work style of the person to be hired? (Select up to 5)	
☐ Works best in a team	☐ Takes risks
☐ Works best alone	☐ Puts self before others
☐ Generates solutions independently	☐ Puts others before self
☐ Works without needing direction	☐ Is highly organised
☐ Accepts direction to get job done	☐ Is intuitive
☐ Generates creative solutions to problems	☐ Feels secure with his/her skills
☐ Tackles problems head on	☐ Has a good sense of humour
☐ Thinks problems through before tackling	Etc.

Temperament

A successful team consists of a mix of different people whose attitudes and manners complement each other. Look at the make-up of key members of the organisation: What kind of personality would have the greatest impact on the group? What type of person is most productive in the work environment? What kind of character traits are most valuable to the business?

Which of the following terms describe the type of person you are looking for to fill this opening? (Select up to 5)	
☐ Low key	☐ Impulsive
☐ Talkative	☐ Patient
☐ High energy	☐ Thinker
☐ Reserved	☐ Doer
☐ Enthusiastic	☐ Open to help
☐ Cynical	☐ Makes decisions quickly
☐ Worrier	☐ Creative
☐ Relaxed	☐ Tolerant
☐ Believes in convictions	☐ Tenacious
☐ Assertive	☐ Thick skinned
☐ Passive	☐ Persistent
☐ Tactful	☐ Ambitious
☐ Persuasive	☐ Loyal
☐ Confident	☐ Emotional
	Other

Work skills

Work skills are those that are necessary for the day-to-day execution of a person's job – how they perform their duties, solve problems, interact with others, etc. Matching skills to the job is critical, since it will impact everything from a person's productivity to how much they need to be managed. Look at the duties that a person will perform, then analyse what skills are necessary to implement those tasks.

Which of the following work skills are necessary for the position you are hiring for? (Select up to 3)	
☐ Good writer	☐ Pays attention to detail
☐ Good speaker	☐ Accepts responsibility
☐ Good listener	☐ Follows direction
☐ Good communication skills	☐ Meets deadlines
☐ Good phone manner	☐ Strong brainstormer
☐ Good project management skills	☐ Comes up with fresh ideas
☐ Makes a strong professional impression	☐ Can motivate others
☐ Proven leader	☐ Turns around a project quickly
☐ Proven manager	☐ Follows through on own ideas
☐ Can close a deal	Other skills

Now that the personality analysis has been completed, the job description worksheet is also finished, and will help in evaluating the appropriateness of the candidate *vis-à-vis* the job criteria.

Job description worksheet

This worksheet is designed to help determine how well job candidates meet the criteria that have been established for this job vacancy. It summarises the job description, work skills and character traits determined as crucial for this position. In the worksheet below some previously-use examples have been filled in.

Immediately after each interview, notes should be examined and candidate suitability ranked per each of the key areas. In the annex on "Hints for successful interviewing", sample interview questions are listed that can help reveal necessary traits. After the interviews are completed different worksheets should be compared to identify the best candidate.

Successful hiring is often a matter of trade-offs. It is unlikely that one candidate will succeed in every chosen category. Compromise could be necessary in some areas, while the candidate thrives in others.

Box 2-4. An example of a job description worksheet

CANDIDATE'S NAME:

JOB TITLE: Environmental inspector

JOB DESCRIPTION:

Will inspect medium-sized industrial companies.

KEY DUTIES:

- Inspects technical aspects in medium-sized companies;
- Drafts notifications and enforcement reports;
- Provides feedback to policy-level on enforceability of legal provisions;
- Contributes to the development and drafting of inspection programming;
- Contributes to the development of inspection tools.

JOB CHARACTERISTICS:

- Will meet with regulatees and the general public;
- May be promoted;
- Will be trained;
- Requires special skills.

Experience/Education				
Experience working in a similar position	Excellent	Good	Fair	Poor
Has job-specific resources/contacts	Excellent	Good	Fair	Poor
College graduate	Yes		No	
Work style				
Works best in a team	Excellent	Good	Fair	Poor
Generates creative solutions to problems	Excellent	Good	Fair	Poor
Thinks problems through before tackling	Excellent	Good	Fair	Poor
Is highly organised	Excellent	Good	Fair	Poor
Is intuitive	Excellent	Good	Fair	Poor
Temperament				
Enthusiastic	Excellent	Good	Fair	Poor
Tactful	Excellent	Good	Fair	Poor
Doer	Excellent	Good	Fair	Poor
Open to help	Excellent	Good	Fair	Poor
Persistent	Excellent	Good	Fair	Poor
Work skills				
Good communication skills	Excellent	Good	Fair	Poor
Makes a strong professional impression	Excellent	Good	Fair	Poor
Pays attention to detail	Excellent	Good	Fair	Poor
Comments				
Include any other comments about the candidate				

Source: Based on the methodology used by the Regional Environmental Inspectorate of North Holland, Netherlands, 1993.

2.4.3 Successful interviewing

It is vital to understand the interviewing process and use it to identify the most qualified candidates for your inspectorate. Successful interviewing is similar to many other "communications" skills – it is a matter of asking the right questions, listening to the answers, and leading candidates to talk honestly about their abilities and attitudes. Candidates are generally predisposed to being open about themselves, therefore the challenge is to ask questions that guide them and abstract the information needed to make a hiring decision (see Annex 2-5). Following are some hints:

- **Pace the interview**: Use the first few questions to put the candidate at ease and set the tone for the rest of the interview. Questions that deal with a person's work experience can often help in this regard.
- **Listen more than speak**: If the interviewer spends more than 20 percent of the interview talking, then the candidates do not have a chance to talk about themselves. The purpose of an interview is to help make a decision based on how a person responds to questions. It is important to listen to those responses.
- **Set a schedule**: Interview dates should be marked in a dairy and treated as any other business appointment. Ensure the candidate is given your undivided attention – the interview should be undisturbed by colleagues, telephones or unnecessary clutter.
- **Ask open-ended questions**: Avoid any question that can be answered with a simple yes or no. Instead, use open-ended questions to encourage candidates to talk about themselves. Listen to responses, and ask plenty of follow-up questions such as "Why do you think that is the case?" or "How did you do that?" If more information is necessary, ask the candidate for it.
- **Ask questions before describing the job**: Decide whether or not to provide a detailed job description at the beginning of the interview. A smart person will pick up on the description, and start phrasing all responses around what he or she perceives the interviewer wants to hear. More honest answers will be encouraged by asking as many questions as possible before you review the job. On the other hand, the candidate may be less focussed and require more precise questioning from your side than if you provided detailed information in advance.
- **Add to standard questions**: Everyone knows some of the typical interview questions - Where do you want to be five years from now? What are your strengths and weaknesses? Tell me about yourself? The problem with these questions is that many candidates will have spent time preparing their responses, and if candidates did so the answers may be 'artificial', although the 'truth' can be found by more in-depth questioning. Additional to the typical questions, include challenging questions that force interviewees to find on-the-spot answers and give an honest appraisal of their strengths and limits. For example, scenario-based questions, where you ask the candidate to react to a typical on-the-job situation, can paint a more accurate picture.
- **Consider a two-phase interview process**: Use a first interview to pare down candidates to the top two or three. Then use a second round of interviews to select the best. The second interview might be conducted by people who will interact with the candidate most closely. Their input is important.

– **Know what cannot be asked**: There can be legal limitations to what you can ask during a job interview. In general, the answers to these forbidden questions could be used to discriminate against a potential employee. They usually focus on non-job-related information such as age, race, marital status, or disability. Asking questions without the intent of using the answer to discriminate against potential employees is no defense. Furthermore, even if someone volunteers information during the interview that could lead to discrimination, state that the volunteered information is not relevant to the interview and move on. Most of the "forbidden" questions are non-job related and will not in general be overstepped if interview topics remain professional.

Questions that, in some legal systems, may not be allowed, include:

– How old are you?
– Are you married?
– Are you planning on having children soon?
– May I have your maiden name?
– What is your sexual preference?
– What religion do you have?
– Which is your political preference?
– What does your social life look like?
– Are you disabled? Do you have any medical problems?
– Have you ever filed for worker's compensation?

It is rare that a job applicant's resume or application paints an accurate portrait of how he or she will fit in at the inspectorate. Successful hiring is often highly subjective, since you will need to judge more than a person's skills, but also attitude, work habits, and motivation. These are things that can only become evident in an interview.

2.4.4 Managing competencies

Competence management is a tool to improve skills of employees within an organisation. This tool can help the management to achieve the organisation's objectives. First, it makes it possible to clarify the strong points of the organisation's staff members, at all levels. Then through competence management people's strongest qualifications (personal and professional skills) are enhanced, and – where appropriate for the work being done presently or in future – less developed competencies are worked out for the benefit of the organisation.

Competence management can be equally interesting for staff members: increasing skills can facilitate a better and more pleasant fulfilment of their daily work, staff members can better show their value for the employer, which can increase their chance to be promoted to another (and/or higher) function in the organisation. Besides, staff member's value on the labour market will rise due to higher professionalism.

This should lead to a situation in which a person's skills on the one hand and the needs of the organisation on the other. This will make staff members feel comfortable since they are appreciated for the things they are best at and that suit their personality. Staff members will generally not be in a position to introduce competence management in their organisation. This is a management task, which of course may be stimulated by staff members' wishes.

Competence management will achieve best results where people are willing to understand themselves and to open up towards others. They should not fear any negative consequences by showing their colleagues and managers their strong points as well as the points that need improvement. In general, managers will have to take the lead in using competence management as a tool to improve their own skills: they are the first to open up towards their colleagues and staff members. They set the good example.

Another approach could be to ask volunteers throughout the organisation to start a pilot project to test out competence management. In this way the system can gain trust and credibility amongst all people working in the organisation, although we must be aware that in the end a few percent of staff members may not like the system.

In a limited number of situations it may turn out that the organisation needs skills the staff member is not and may never be able to deliver. This situation will in the long run neither be beneficial for the staff member nor his organisation. This may *e.g.* lead to the conclusion that a transfer to other work that better fits his competencies, would be the best solution for both parties.

Competence profiles

In the system of competence management, competence profiles are used to describe the competencies required in each job in the organisation. The profiles follow the mission and the objectives of the organisation. Together all the different jobs in the organisation (written down in job descriptions) should cover the needed competencies, both in a qualitative and in a quantitative sense. Without a proper fit, it will be more difficult, if not impossible, to fulfil the organisation's objectives.

After competence profiles have been created they are not only used for the proper fulfilment of competence management. They also form a basis for recruitment and selection of new staff members and for training programs in general. But also as a tool for performance assessments of staff members, including decisions on promotion and payment.

Competence profiles offer many possibilities. They indicate in concrete terms what the organisation expects from each of its staff members fulfilling a specific function. Besides that it is a tool for personal development. Staff members can compare their own skills with that of the profile: "At which points do I not yet meet the profile", and "At which points do I go beyond the profile?".

Sets of competencies are specific to the objectives and mandate of a concrete organisation. As an example, an overview of competencies of a hypothetic organisation is presented below. This organisation uses the following competencies:

- Human interaction and management

1. Communicating
2. Co-operating
3. Motivating
4. Learning to learn
5. Convincing
6. Decision-making
7. Delegating

- Presentation and professional environment

  8. Customer-oriented acting
  9. Taking initiatives
  10. Networking
  11. Showing sensitivity
  12. Focussing on results
  13. Acting carefully

- Personal effectiveness

  14. Analysing
  15. Acting flexibly
  16. Handling stress
  17. Vision
  18. Solving problems
  19. Planning and organising

In Annex 2-6 these nineteen competencies have been annotated. Of course, every inspectorate should very cautiously consider the description of its own description of competencies. It will be clear that each of the staff members in the organisation, including the managers, will have a competence profile, containing a number of (core) competencies that are necessary for a contribution to the achievement of the objectives of the organisation.

Judging competencies

To determine whether a staff member meets his function's profile of competencies and whether improvements can be made, it is necessary to form a judgement. In organisations judgements are often very subjective and it is usual the managers that judge their assistants. In a way subjectivity is inevitable but unavoidable.

Judgements can be made more objective by using the concept of inter-subjectivity. This means that several people individually judge a situation or, in the case of competence management, the way in which a staff member fulfils the competencies that belong to his competence profile. The people who judge can be the manager(s), colleagues, secretary, but also the judged staff member himself. The different judgements can be scheduled and will, as a whole, only be in the hands of the judged staff member. He can compare the judgements and find common conclusions. Such a survey, although not being purely scientific, will provide the judged staff member with information on his level of skills and directions for professional growth. An example of a set of forms that can be used to make the judgement can be found in Annex 2-7.

Information acquired while judging a person's competencies does not say anything about these competencies being good or wrong in general. Competence management is purely related to the (present) specific function that a staff member fulfils. A staff member may have very strong competencies that are absolutely useless for his present function. He may *e.g.* be a good debater, but if he has to do accurate analysis work in a laboratory, this competence is probably of little use.

On the other hand, staff members may show a level of competencies that blocks present functioning, although this level would be an absolute advantage in another function. He or she may *e.g.* be a person that works extremely accurately and meticulously. This can be a very useful competency for a scientist or an analyst working in a laboratory, but it may be a hindrance to *e.g.* a policy-maker or high-level manager who primarily have to focus on main lines of development.

The practice of competence management has shown that, in general, the results of this exercise are not unknown to the judged staff members. Very often they know or recognise their own strong points and points for improvement in certain situations. On the basis of the information and conclusions the staff member can set up a **personal plan of development**. He will make a proposal and discuss this with his manager. Such a plan can (or will) include many things, like a timeframe, skills to be trained, and of course the results to be achieved.

The organisation should be prepared for this and have the possibility to meet these personal plans as much as possible. This includes sufficient funds for training. Prioritisation can and will in most cases be part of this. This may influence the timeframes of individual development plans. In case, however, training is needed to help a staff member improve his skills, it will remain the organisation's responsibility to provide it and thus make improvement of skills possible. Personal development plans will generally be made part of the overall training programme of the organisation, which includes the total funding available and prioritisation.

2.4.5 A structured approach towards staff training in environmental inspectorates

Training of inspectors and their managers is essential to developing and increasing the efficiency and effectiveness of inspections. Inspectorates should provide sufficient basic and continued training to all inspectors to improve skills, knowledge and (sometimes) attitude.

Training is often given at random and inspectors follow training that is momentanly available. On a personal level, it training can be very interesting, however does it also fulfil the actual training needs of the inspectorate? What must inspectors know, what skills and competences must they have to perform their daily work on a high quality level? In this section information is presented on **how to approach training in a more structured way**, by making a training program for the inspectorate.

An efficient way to deal with inspector's time and inspectorate resources, is to draft a **training program**. The program describes the training that is needed (per person and in an aggregated form) in the inspectorate. It prioritises training needs, so that training can be linked with the inspectorate's inspection and enforcement program and its resources available. The training program has to assure that inspectors are competent for all of their duties and that a system is in place for assessing their competence and keeping it up to date.

In this context, it is important to recognise that the process around training must deliver two **functions: training new inspectors** and also **refreshing and developing the skills** of working inspectors. This section outlines such a process and discusses its six main elements as follows:

1) **Definition of competencies to be trained**: Description of inspectors' capabilities and activities that need to be of a satisfactory standard for effective conduct of his or her assigned duties.

2) **Personal development plans**: Statement of what an inspector needs to learn or become proficient in, together with a plan and programme for achieving it. This is based on assess-

ment of current status of competencies and on management plans for his or her deployment. These should be prepared for all new inspectors and kept under review as part of a regular process of staff appraisal.

3) **Training**: Formal learning opportunities, such as structured courses, probably away from his or her job.

4) **Planned experience**: Learning on the job by doing it, with coaching and support from a manager or experienced colleague.

5) **Assessment**: Evaluation of competencies to check that required learning has taken place and has been effective (see previous section on competence management). This should also be carried out routinely, as part of the regular appraisal of staff performance, and the results fed back into personal development plans.

6) **Management of training programme**: Formal arrangements by which the regulatory body ensures that all elements of the process are properly conducted.

Competencies to be trained

Section 2.4.4 describes competencies in general. Competencies in the context of the "Inspector Profile" cover:

- **Personal competencies** required of any inspector. (Many of these are inherent in the character of individuals best suited to be inspectors and are often closely related to the general competencies needed.)

- **Role-related, technical competencies**. The technical competencies are those associated with the duties of "inspection and enforcement" in a typical environmental inspectorate. They can be sub-divided into:

  - **Core competencies** that all environmental inspectors should have. Clusters of competencies that relate to the duties of a typical, general site inspector engaged in inspection and enforcement.
  - **Specialist competencies** likely to be confined to inspectors in defined specialist roles supporting the tasks of inspection and enforcement.

In addition to the personal attributes and competencies an inspector must have a range of relevant technical knowledge, skills and experience in order to be fully effective. The precise requirements will depend upon the range of duties he or she is required to undertake. This, in turn, will depend upon the precise remit of the regulatory body and upon the way it is organised and managed. In the context of environmental regulation, however, the inspector's main duties will normally be in the sphere of inspection and enforcement, but the knowledge, skills and experience necessary for these functions will equip him or her adequately for effective contribution to the other steps in the regulatory cycle.

The core competencies are required of all inspectors in an environmental inspectorate. They represent a basis of knowledge and understanding of the environmental regulatory role that may be used as a foundation for further development for a particular role. Clusters of role-related competencies are relevant to inspectors assigned to the related role. For the purposes of this toolkit, the relevant role is taken as "inspection and enforcement". Other roles such as assessing license applications and the writing of licenses may require a (slightly) different cluster of competencies. Specialist competencies are required of those inspectors who may have a specialist role within the regulatory organisation or who may have a need for such competencies in order to carry out a particular assignment.

The portfolio of competencies required of individual inspectors may vary, at the level of detail, depending upon how the inspectorate is organised and upon the extent to which it relies on inspectors working in teams. In team-based organisations, the key requirement is for the team as a whole to have the full range of competencies and to be managed accordingly.

Core competencies

The core competencies include areas of knowledge that underpin, at a general level, most of the activities associated with environmental regulation. These include:

- **Environmental law**: This includes a general knowledge of the legislation relevant to the role of the inspectorate and of the statutory basis for its regulatory duties and powers;
- **Pollution control and regulatory principles**: This includes an understanding of the regulatory policies adopted by the inspectorate for pollution prevention and control, and for exercise of sanctions in cases of breach of the law;
- **Legal procedures**: This covers understanding of the legal process that applies in cases of non-compliance or legal breach. Where prosecution is a relevant sanction, it should include matters concerned with the proper collection of evidence and its production before a court of law;
- **Scientific and engineering principles**: This includes a basic knowledge of the behaviour of pollutants in the environment and of how to detect and measure them. It may also include some understanding of the chemical engineering of potentially polluting processes, together with relevant abatement techniques, and may extend to the principles of electrical or electronic engineering associated with process instrumentation, control and monitoring systems;
- **Risk assessment**: This aspect borders on a specialist area but it is desirable for an inspector to have some understanding of the relationships between sources of hazard, pathways in the environment, receptors or potential targets for impact, probability and consequent risk, including personal safety and occupational health;
- **Environmental management**: The general principles and logic of environmental management systems should be understood, from assessment of environmental effects, through development of environmental policies and targets, and organising and managing their delivery (*e.g.* through planning and prioritisation of inspections, inspection and enforcement strategy), to reporting on achievements and progress and identifying areas for further improvement;
- **Inspection techniques:** Inspectors will have to use a number of techniques to procure the information and to promote compliance. Training in communication and negotiating techniques, information collection methods, and observation techniques can provide this;
- **Team management**: This is relevant for inspectors destined to be managers of teams and should include knowledge or experience of organisation and management of multi-disciplinary teams, of finance and other resources, and of related performance statistics. It also includes roles and responsibilities of the inspection team in different inspection stages.

Competencies related to inspection and enforcement (role-related competencies)

This cluster of competencies is relevant to the main duties of an inspector under any form of environmental regulatory regime. The detailed specification of the cluster needs to be tailored to the particular remit, policies and objectives of the individual inspectorate but the essential elements are largely generic. The key competencies, described here in terms of activities, are as follows:

- **Site assessment and advice to operators regarding permission to operate in compliance with specific legislation:** This involves assessing sites covered by environmental legislation, regulations or agreements, establishing appropriate contact with the site operator and informing him of the relevant legal requirements and of how to prepare and submit the necessary application for a license;
- **Assessment of applications and issue of licenses (where appropriate to inspector role):** This requires checking and validating the content of an application for a license, specifying conditions and limits which apply to the license, specifying programmes for process improvement or modification, and determining the programme for monitoring of the process by the operator. It also involves all the administrative steps, including public consultation etc. associated with preparation and issue of the license;
- **Securing compliance with statutory and environmental objectives:** This involves keeping up-to-date with developments in technology, business operations and the economy of an industry sector, guiding operators towards continuous improvement and reviewing/revising regularly the terms and conditions of existing licenses. It also involves inspecting sites and assessing process releases for compliance with the requirements of relevant licenses, and investigating any breaches or complaints against the site operator. This includes inspection of the company's registers and documents, environmental registers, and hazardous waste register;
- **Instigating formal enforcement action:** Discovered non-compliance may involve the issue of various kinds of formal enforcement notices ranging from a simple notice requiring some specified improvement, through to a prohibition notice requiring shutdown of a process in the event of imminent risk of serious harm to the environment. In cases where prosecution is intended, gathering and recording evidence of breach and eventual presentation of evidence in court may be needed;
- **Emergency response:** Where it is within the inspector's remit, this means ensuring that the necessary action is taken to recover control of the source of emergency, to protect people and the environment and to keep the public informed. It then involves ensuring that any necessary remediation is undertaken, that all possible lessons are learnt and action taken to avoid repetition, and that any appropriate enforcement action is taken;
- **Monitoring releases and assessing their environmental impact:** This involves planning an environmental and release monitoring programme, reviewing the results of it and assessing the impact on the environment. It then means considering whether environmental objectives are being achieved by way of existing licenses and seeking their modification if necessary;

- **Representing the regulatory body at meetings with the public, local authorities and other bodies**: In situations where others need to be involved, consulted or informed about developments or incidents on sites under the inspector's control, this generally requires explanation of the inspectorate, of the events or developments of concern, of actions proposed by the inspectorate and of how others may make representations, and how they will be dealt with;
- **Contributing to the development and continuous improvement of regulatory policy and operations:** In the light of experience of the above activities, this involves feedback of information to those responsible for developing legislation, regulations and regulatory policies and procedures, with a view to improvement if necessary. It also involves sharing of experience and accumulated knowledge with fellow inspectors and specialist staff.

Specialist competencies

These competencies cover areas of specialist knowledge or skills required by the inspectorate for effective discharge of its duties. The acquisition and maintenance of such competencies is generally such that inspectors skilled in these areas are likely to provide an internal specialist advisory or consultancy service to more generally qualified colleagues who have the broader compliance and enforcement role. The range of specialities required will depend upon the remit of the inspectorate but typical specialist competences include the following:

- Sampling and analysis of particular pollutants in the environment (*e.g.* dioxines);
- Characterisation and modelling of groundwater movement;
- Modelling of pollutant dispersion in the atmosphere and aquatic/marine environments;
- Risk assessment;
- Detection of causes of ecological damage;
- Knowledge of major industrial processes and associated abatement techniques;
- Knowledge of contemporary continuous monitoring techniques and their application;
- Remediation of contaminated land;
- Drafting and issue of integrated permits;
- Presenting cases for prosecution in court;
- Management of research and development (R&D).

Accreditation of inspectors

Individual inspectorates will also have to decide, on the basis of their legal or constitutional situation, whether or not inspectors need to be formally accredited to carry out inspections. If accreditation is necessary, they will also have to decide what level of competence must be reached for this purpose, and by what means it should be tested and maintained.

Precise details of the competencies described above depend on the remit of the inspectorate and on the regulatory approach adopted. In the context of regulatory approach, the required range of competencies will be influenced, at the level of detail, by the policy choice between a traditional policing ("process") approach and a more goal-based or educative ("outcome") approach. In the case of the latter

goal-based approach, inspectors are likely to have to be more knowledgeable about the effect of releases into the environment, about setting environmental objectives and targets, and about environmental management systems. In the traditional approach, the emphasis is more likely to be on knowledge of particular processes, plant operation and process control, treatment and management of waste, etc. In either case, however, training programmes for the staff of environmental inspectorates with a typical range of responsibilities are likely to have to include the subjects presented in Box 2-5. These are set out on a sector basis although, in practice, they may be applied in an integrated or cross-sectoral basis.

Box 2-5. Subjects to be included in training programmes

Air Quality

- Development and implementation of air quality management strategy;
- Securing of any statutory ambient air quality standards;
- Establishing conditions and limits for permitting of discharges into atmosphere;
- Ambient air quality monitoring and assessment;
- Preparing plans for dealing with exceeding air quality limit values;
- Establishing a system for public notification when alert thresholds are exceeded;
- Compilation of national inventory of emissions to atmosphere;
- Implementing phase-out of ozone depleting substances;
- Maintaining inventory of greenhouse gas emissions and preparing national programme for limiting emissions under Convention on Climate Change.

Water Quality

- Developing methodology for establishing water quality objectives;
- Establishing programmes for water quality protection and risk management;
- Establishing programmes for reduction of emissions to aquatic environment;
- Establishing and enforcing technical standards and codes of practice in relation to the achievement of water quality objectives (surface waters, ground water, bathing waters);
- Reducing and mitigating marine pollution;
- Deciding and establishing emission limit values;
- Establishing conditions for licensing of direct and indirect wastewater discharges;
- Maintenance of a discharge register;
- Notifying wastewater treatment plant about potential pollution incidents;
- Enforcing measures for emission control of priority substances.

Waste Management

- Assessing and verifying qualifications and suitability of license applicants and holders;
- Preparation of technical standards and codes of practice for waste management;
- Establishing conditions for licensing of waste management activities and establishments;
- Establishing producer responsibility and compliance schemes for recovery and recycling/treatment of certain waste categories;
- Controlling transboundary movements of waste;
- In-depth knowledge of waste streams management and recording.

Pollution control and risk management on major industrial installations

- Awareness of best available techniques for major processes;
- Identifying establishments with increased risk of major accident hazard;

– Reviewing emergency plans;
– Implementing a system of inspection relating to major accident hazards;
– Arrangements for response to major accidents.

Nature Protection

– Establishing policies and guidelines;
– Designating sites and species for enhanced protection;
– Establishing protection measures and plans;
– Implementation of plans and policies;
– Issuing licenses for import and export of listed species of plants and animals;
– Control of development on, or affecting, protected sites;
– Establishing management practices for protecting sites and species;
– Data collection and reporting.

Cross-sectoral matters

– Licensing and inspection of installations/sites;
– Monitoring, sampling and analysis;
– Negotiating self-monitoring arrangements;
– Initiating and pursuing enforcement actions in cases of non-compliance;
– Licensing, inspection, monitoring, data collection and reporting on activities involving genetically modified organisms;
– Providing for public access to environmental information;
– Evaluation of EIAs;
– Principles and auditing of Environmental Management Systems.

Source: UNEP (2004), Reference Handbook on Environmental Compliance and Enforcement in the Mediterranean Region, UNEP.

Inspector's personal development plans

The allocation of time for training depends upon the relevant knowledge and experience of inspectors and upon the complexity of the processes they regulate. It also depends on the technical development of processes and upon changes to the regulations. In fact, the purpose of a personal development plan is to bridge the gap between the inspector's present competencies and the overall competencies he or she should have for satisfactory conduct of his or her assigned duties.

Against this background, and in addition to general induction training and learning on the job, a well resourced inspectorate might allow a yearly 6-7 weeks over a two year period for the technical training of a beginner engaged on inspection of basic processes, with a further 2-3 weeks for those engaged on more specialist or complex processes. For experienced inspectors, whose requirement is for training on new developments in technology and legislation, an allocation of 5-10 days per year may suffice, depending upon the extent of relevant developments.

Planned experience and training

Implementation of the training process first requires identification of the most appropriate method of developing the competencies. Planned experience, *i.e.* training on the job, will be appropriate for some, and structured education courses or seminars for others.

Planned experience means that inspectors and their managers have to look for opportunities for the inspectors to work on issues that have been identified in Personal Development Plans. Also, managers have to be able, and have to have the time, to coach staff to a satisfactory level. Otherwise, they have to be prepared to devote the time of experienced colleagues to it. Learning on the job is generally a progressive process involving, first all, an element of demonstration, or "showing how to do it in practice", followed by an indeterminate period during which mentoring or advising is adequate. The selection of competencies for development in this way, and the progression of the coaching and mentoring process, are essentially matters of judgement by the relevant manager or "competence assessor" having regard to the abilities of the particular candidate for training and to any other relevant circumstances such as the number of staff under similar training at the same time.

Training by way of courses or seminars is likely to include foundation or induction training for groups of new inspectors. The contents of such training will include practical information about the regulatory body and its administrative, financial, and management systems, together with appropriate elements of the core technical competencies, such as relevant environmental law, pollution control and regulatory principles, and legal procedures.

Other courses or seminars will need to address specific issues for the purpose of professional development. These may be relevant for both new inspectors and established inspectors. In the first instance, new inspectors will need to attend courses and seminars in order to complete development of their core technical competencies and to build the cluster of technical competencies relevant to their assigned duties. Established inspectors may need to develop a new cluster of technical competencies upon change of assignment or may need to refresh existing skills. Therefore, the design of training programmes needs to differentiate between:

- Basic technical training for new inspectors in general;
- More advanced technical training for inspectors likely to be engaged on complex duties, such as inspection of major industrial processes;
- Specialised training for specialist inspectors;
- On-going professional development of established staff, and refreshment of existing skills and knowledge.

Such courses and seminars can be delivered in various ways. They may be organised and taught internally by staff of the regulatory body or by invited lecturers. In the case of a territorial inspectorate this may be done at a local level or at a central, national level. They may also be organised and taught externally by way of colleges, training institutions, or industrial companies or associations. A variation of the learning process, which lies between planned experience and external courses, is secondment to another inspectorate or to an industrial company for experience.

The detailed design of an overall training and development programme is, therefore, largely a matter of choice by individual inspectorates and is likely to depend heavily on the size of the inspectorate, the rate of recruitment of new staff, the availability of in-house mentors and lecturers, and upon the financial resources available for procuring external training.

Assessment

Training and development is an on-going, cyclic process, and the step of assessment applies at the beginning and end of the cycle. It is the procedure used first of all to evaluate the existing competencies of an inspector to identify any outstanding requirements and then, subsequently, to confirm that training has been successful in bringing him or her to the necessary standard.

Ideally, the procedure should be carried out by the inspector's manager, provided he or she has sufficient personal competencies to make a credible judgement. If this is not practicable for any reason, the manager may wish to delegate the task to another senior colleague. Assessment of new inspectors should be carried out upon recruitment and should be the basis of a first personal development plan. It should be carried out regularly, thereafter, as part of the routine appraisal of staff performance and updating of personal development plans.

This procedure is important for effective performance of any regulatory body, but it assumes a special significance if inspectors are warranted or accredited for their duties on the basis of having achieved defined standards of competence. Any regulatory body operating on this basis must have a policy for dealing with the possibility that an established inspector may fall below the required standard and be unable or unwilling, for whatever reason, to refresh his or her skills and to re-acquire the necessary level. Such a policy will also have to address the possibility of appeal against the results of assessment.

Management of training programmes

Depending upon the size and complexity of the inspectorate, management may wish to make special arrangements for supervision of the training and development programme. Appointment of a competent supervisor is likely to ensure that assessments are undertaken when due, that appropriate courses or "on the job" training is organised, that personal development plans and records of training are kept up to date and, particularly where accreditation depends on the acquisition and maintenance of competencies, that management is informed of any difficulties arising from the assessment process.

2.4.6 Time management

Generally, the work of inspectors and their managers is time-consuming. Plans do not always follow the desired course - partly the inspector (or his manager) causes the obstacles him/herself; partly other people or circumstances cause it. How one can have a clear picture of obstacles that can 'steal' work time? Can the "time robbers" be named? In this section, a lot of 'time robbers' derived from practice will be listed (see Table 2-5). The listed examples will distinguish neither physical/psychological factors nor yourself/your surroundings. They are not listed in order of importance. Their only purpose is to assist in identifying "time robbers".

Given a certain work situation the boxes in the column "Is it me" can be ticked every time a "time-robber" is recognised. Responsibility or possible change should not be taken into consideration when ticking the boxes. After finalising the list most t and indicating the "time-robbers", the first five most time-consuming "time-robbers" should be selected.

In the column on the right hand side a possible solutions is indicated for each specific 'time-robber'. These solutions are to be considered as suggestions. Of course, in practice it may be more difficult to take away obstacles, and the elaboration of some solutions might cover several pages or even a book. The pages following the examples contain advice on developing the recognition and eliminating "time-robbers".

Table 2-5. Causes and possible solutions to address overload

NO.	CAUSES	IS IT ME?	POSSIBLE SOLUTIONS
1. Unable to say 'no'			
1.1	Willing to help others.	❒	If you always say 'yes', others will consider your help as something that goes without saying. Break this habit.
1.2	Afraid to insult others.	❒	Learn to say no without insulting: "If it would be possible I would like to help you, but let me give you a hint."
1.3	Others consider that you usually say "yes".	❒	This is probably your own fault, since you never say "no".
2. Involved in too many issues			
2.1	Lack of priorities.	❒	Clear determination of objectives/tasks.
2.2	The need to feel important and to be involved in everything.	❒	Focus your efforts on something important and show that you achieve results in this. Do something less but good, rather than more and bad. Be selective. Spend your time and energy on the 20% of the tasks that deliver 80% of the overall results.
2.3	Lack of realistic estimation of time.	❒	Add a 20% margin to your time estimates.
2.4	Overwhelmed by the pressure on you and the big piles of paperwork.	❒	Do not confuse activity with effectiveness. Often overkill in activity proves that you are unorganised.
3. Unable to finalise things			
3.1	Lack of time limits.	❒	Make it a rule to determine time limits for every task.
3.2	No respect for your time/ interruptions by others.	❒	Determine fixed periods of time in which you do not want to be disturbed. If you really know what you have to do and what you want to do, you can defend yourself against a lack of respect for your time schedule from your colleagues and boss.
3.3	Too many things to do.	❒	Drop old responsibilities when you accept new ones.
3.4	Laziness.	❒	Set yourself time limits and communicate them to others.
4. Lack of priorities			
4.1	Lack of time to plan.	❒	In the beginning planning takes time, but in the long term it saves time.
4.2	Lack of self-discipline.	❒	Determine main areas of interest and tasks and plan activities *e.g.* per month.
4.3	Accent on doing things.	❒	Those who know what has to be done, succeed once. Those who know why, succeed time after time.
4.4	No job descriptions.	❒	Use the main areas of interest.

NO.	CAUSES	IS IT ME?	POSSIBLE SOLUTIONS
5. Bad communication			
5.1	Unconscious of the fact that colleagues also need information.	❒	Ask them what they need (not to be confused with what they may like).
5.2	"Language" problems.	❒	Take care of common expressions and terminology.
5.3	Use of the wrong media.	❒	Agree on when to have meetings, write memos, use the telephone, etc.
5.4	Bad timing for communication.	❒	The moment for relating the information must be well chosen for the communicant to be receptive.
5.5	Exaggerated communication.	❒	Determine the target of the communication. Teach yourself to express yourself clearly, unambiguously and completely.
5.6	The listener is not receptive to the message and is not motivated.	❒	Try to discover the real motives and attitudes of the receiver. Investigate this beforehand. "Would you like to talk about ...?" Learn to decipher body language.
5.7	Indecisiveness or delay in giving answers.	❒	Use the technique: "Until I hear the contrary ...."
5.8	The speaker and the listener use different norms.	❒	Use neutral wording and sentences.
6. Too much paperwork			
6.1	Poor administrative procedures.	❒	What is being done too extensively? Is there a too in-depth or too superficial check? Are administrative routines modern enough?
6.2	Weak organisation.	❒	Standardise written communications. Where possible improve the administrative work. Systemise the processing of information. Let an advisor check your administrative procedures.
7. Too much reading matter			
7.1	Unclear and poor documentation.	❒	Try to convince your assistants/boss/colleagues to supply their information systematically and be well organised. Be a good example in this.
7.2	Weak reading techniques.	❒	Learn fast reading techniques. Follow a training course in this.
7.3	Lack of priorities in what to read and how thoroughly to read it.	❒	Make a list of everything you have to read. Set priorities and choose the amount of time you want to spend on it. Learn selective reading techniques.
8. Poorly organised meetings			
8.1	The reason of the meeting is not clear.	❒	Set up an agenda.
8.2	Wrong participants.	❒	Only invite those who are absolutely necessary.
8.3	Too many meetings.	❒	Compare results with time spent.
8.4	Weak/no minutes.	❒	Make standard schedules for minutes.
8.5	Useless discussions.	❒	Ensure strong chairmanship.

NO.	CAUSES	IS IT ME?	POSSIBLE SOLUTIONS
8.6	No decision-making.	❒	Agenda has to indicate the decisions to be taken.
8.7	No follow-up.	❒	Minutes to clarify 'who?' 'what?' 'when?'.
8.8	Indecisiveness.	❒	Invite a decisive person.
8.9	Weak chairmanship.	❒	Train yourself and colleagues in chairmanship.
8.10	Delayed start.	❒	Always begin on time. If not, latecomers are awarded and the others are punished.
8.11	Too many external disturbances.	❒	Only allow interruptions in emergency situations. Inform your secretary about the ultimate end time of the meeting.
8.12	Deviations from the agenda.	❒	Be alert for hidden agendas.
8.13	No fixed end time of the meeting and/or no time limits for each of the agenda points determined in advance.	❒	Start by determining a time limit for the meeting. Attribute time to each of the issues, depending on the degree of importance.
9. Telephonic time robbers			
9.1	Time-consuming conversations.	❒	Distinguish small talk from information.
9.2	Desire/need to be available for external interruptions.	❒	Teach your secretary or operator to be selective.
9.3	No plans for privacy.	❒	Switch off the telephone and define hours when you do not want to be disturbed. Provide for time to make telephone calls – or say that you will call back.
9.4	Unstructured conversations.	❒	Plan the issues to be discussed in advance.
9.5	Not capable of ending or shortening conversations.	❒	Set a time limit: "Yes, I can talk to you for ... minutes". Announce the end: "Before hanging up...". Be polite but strict: "I must go now".
9.6	Unrealistic estimation of time.	❒	Put an egg-timer or hourglass next to your telephone.
9.7	Lack of priority rules, all calls are put through.	❒	Discuss this problem with your secretary/ operator. Make a plan.
9.8	No secretary.	❒	Ask a colleague to answer your phone during a fixed period of time. Render him/her an equal service.
10. Weak in delegating			
10.1	Uncertainty – fear of assistants' failures.	❒	Remember that you probably also learned most of your mistakes. Teach your assistants to foresee and prevent mistakes and pass on your experience to them.
10.2	Lack of confidence in others.	❒	Train your assistants and develop your trust in them.
10.3	Exaggerated control.	❒	Judge your assistants on the basis of their results, not on their activities.
10.4	Inadequate guidelines.	❒	Train yourself and your assistants. Take care that your staff repeat your guidelines before starting an assignment.

NO.	CAUSES	IS IT ME?	POSSIBLE SOLUTIONS
10.5	Delegation of formal responsibility without actual authority.	❒	Give your assistants a chance to prove their value.
10.6	Fear that an assistant may carry out the work better than I can.	❒	You should be grateful to them. Nobody is expected to be equally qualified in everything. The better your staff works, the better your chances for a promotion.
10.7	I deal with too many details.	❒	Do not do anything you can delegate.
10.8	I can better carry out the assignment.	❒	Do not try to be a perfectionist.
10.9	I prefer action to taking the lead.	❒	Train yourself in management techniques. You will feel better when you control them.
10.10	Overworked assistants.	❒	Help them in determining their priorities. Set realistic demands. Take care that you always have an overview on the workload of your assistants.
11. Unclear division of responsibilities			
11.1	Insufficient job descriptions.	❒	An organisation diagram with main areas of interest would be of much help.
11.2	Responsibilities without authority.	❒	Show, based on your results, that you can handle the job.
11.3	Indecisive boss.	❒	Try to get a real overview in words and actions.
11.4	Struggle for power/mistrust in the organisation.	❒	Main areas of interest, objectives and expectations have to be determined for the whole organisation.
11.5	Overlapping job descriptions.	❒	Trace overlapping. Eliminate these by determining the main areas of interest.
11.6	Ambiguous guidelines.	❒	Ask for written guidelines.
12. Indecisiveness and delay			
12.1	Lack of trust in the decision-making process.	❒	Systemise the gaining of information and evaluate this to acquire a greater reliability.
12.2	Too much attention to data.	❒	Think about the 80/20-rule mentioned above.
12.3	Irrational decision-making techniques.	❒	Train yourself and others in decision-making techniques.
12.4	Fear for the consequences of even the slightest mistakes.	❒	Switch off distrust and power struggles. Ask the question: "What can we learn from it? How can we avoid it from happening again in future?".
12.5	No realistic time limits.	❒	Everything takes more time than you think. Keep 20% of your time available ('free').
12.6	Ignorance about the consequences of the decisions.	❒	Determine your objectives, take the decision concerning the main areas of interest.

NO.	CAUSES	IS IT ME?	POSSIBLE SOLUTIONS
13. Management problems			
13.1	Lack of priorities.	❒	Learn to distinguish urgent matters from the most important matters. Set priorities: how to spend most of your time.
13.2	Dealing with too many cases at the same time.	❒	Learn to say "no". Only do one thing at the time. Make a schedule for the tasks to follow.
13.3	No foresight.	❒	Plan. Take care that you have alternatives for unexpected situations. It is better to prevent than to cure.
13.4	Exaggerated reactions and taking care of little problems as if they were important.	❒	Do not spend time on minor problems. Delegate problems that can be dealt with by your assistants in order to maintain the overview and the control.
13.5	Neglect of the possible negative consequences of a decision.	❒	Make an analysis of the things that may go wrong. Make alternative plans.
14. Lack of self discipline and personal organisation			
14.1	Lack of norms concerning performance.	❒	Determine your own norms.
14.2	Postponement of the unpleasant.	❒	Admit that it has to be done. It will not be easier later. If you first carry out the unpleasant tasks, the rest of the day feels a lot easier.
14.3	No focus.	❒	Learn to say "no" to unimportant tasks.
14.4	Solving the urgent matters and postponing the important ones.	❒	Neglect problems that will be solved automatically. Delegate problems that can be solved by others. Keep yourself busy with things only you can solve.
15. Interruptions by unexpected visitors			
15.1	No mechanism to prevent unexpected visitors.	❒	Create a "filter". Press for appointments.
15.2	"My door is always open."	❒	Choose an hour in which you do not want to be disturbed. If necessary, work in another place during this period of time.
15.3	"People ask me to take decisions on issues under the responsibility of my assistants."	❒	Do not take decisions in cases that you can delegate. Refer to the responsible assistants.
15.4	"My assistants disturb me continuously."	❒	Only check the exceptions (manage by exception). Only ask for deviations of plans and budgets. Decide which tasks your assistants can carry out without asking you questions. Decide for which tasks they may disturb you and which can be delayed until the next meeting.
15.5	"I cannot end visits."	❒	Go to their office yourself. Remain standing. Set time limits for meetings/visits. Make clear when the meeting/the visit is over. "Before deciding, I would like to ..."

Source: Based on Ferner, J. (1995), Successful Time Management: A Self-Teaching Guide, Second Edition; and Bestuursacademie Randstad, Netherlands, Tijdrovers, 1993.

Following this extensive list of more or less important "time-robbers", and with an idea of the bottlenecks that can arise in time management, the top five "time-robbers" can now be chosen and entered in the table that follows. It can then be decided how to eliminate them, to minimise their effect or to learn to live with them and reflect them in activity planning.

	My 5 major 'time robbers'	What can I do about it?	When?
1.			
2.			
3.			
4.			
5.			

One reason why time problems are rarely eliminated is that people are unaware of them. Determining them, therefore, is the first big step towards eliminating them.

The next step consists of becoming convinced that it is possible to eliminate them in working situations. However the success of the elimination process is still often impeded by the attitude of the person in question. They could believe time management not to be amongst their responsibilities, or they could hide behind one or more of the following excuses:

- "It is out of my hands to change the situation";
- "I have to go when my boss calls for me";
- "Problems that suddenly occur cannot be prevented";
- "We do not control the traffic or the weather";
- "I feel obliged to assist my staff immediately when they address me with their problems";
- "The telephone disturbs me continuously and I will have to live with that".

Nonetheless the origin of some problems does belong to the external environment. Time management is a very useful tool in overcoming many problems, and should be learned and applied for this purpose.

CHAPTER 2.5
FINANCING AND BUDGETING

2.5.1 Key issues of inspectorate financing

In order to function effectively, an inspectorate requires appropriate and predictable funding. The difficulty of financing environmental inspection activities is not unique for one or just a few countries; no matter what part of the world, inspectorate management will always mention the problem of insufficient budgets to carry out all the work. Of course different levels of financing problems can be recognised. In some countries the problems relate to lack of funding to cover additional burdens, and in other ones they may relate to lack of funding to fulfil most basic functions.

It should however not be forgotten that the performance of an inspectorate depends not only on the amount of money that is available. Managers have the challenging task of organising the work in such a way that, with the finances available, the work is done as efficiently and effectively as possible. This section discusses possibilities to do so, but also describes a number of possibilities of acquiring the necessary funds.

2.5.2 Costs related to inspectorate functioning and major source of financing

Available resources are the major limiting factor on the ability of inspectorates to carry out inspections. Moreover, although the inspectorate's expenditures are not limited to conducting inspections, this is normally the one item in which most of its budget is spent. Data analysis and post-inspection actions are important elements and have to be financed as well. In considering the budgets of inspectorates both operating and capital costs should be calculated and allocated (Box 2-6). The inspection plans therefore should be closely linked to the preparation of budgets for inspectorates. It is most practical that inspection plans cover the same time period as the budget year.

Box 2-6. Operating and capital costs of environmental inspectorates

Operating costs generally include:

- Personnel, including training;
- Office supplies, communication and publications;
- Laboratory material and chemicals;
- Vehicle/fleet maintenance;
- Maintenance for computers, laboratories and publication equipment;
- Field sampling material;
- Funds for contractor support.

Capital costs include significant one-time expenditures that are of use for at least one year. Examples include:

- Central and regional laboratories and sampling equipment;
- Office space;
- Communication equipment;
- Computers and other office equipment;
- Vehicles and/or fleet;
- Other items.

Source: UNEP (1996), *Industry Environmental Compliance: Training Manual*. Paris, 1996.

Inspectorates deliver public service and society at large benefits from a cleaner environment, which is a public good. Against this background, the inspectorate should primarily be financed through the general state budget. The general concepts, under which the inspectorate will perform its duties, are basically that of the "User/Beneficiary Pays Principle", the "Polluter Pays Principle", and "Cost Recovery".

Although there is a single major source of financing, inspectorates may receive revenue from a number of other sources: earmarked non-budgetary funds, contributions, and in some instances the provision of services. There are, however, certain limitations in using these other revenue sources, in particular the inversion of objectives toward revenue raising rather than protection of the environment and conflict of interests where budgets depend upon payments from regulatees.

2.5.3 Assessing the financing gap

As governments become leaner in human resources and budgets, funding to control environmental compliance and the state of environment is becoming increasingly difficult either in countries where national environmental management system has reached a rather steady state or where a major expansion of activities is still needed to improve environmental conditions. The financing gap will be, however, much larger in the latter case.

In both cases, gap assessment will be a first step to take towards proper financing level. Before financing needs for the inspectorate are actually assessed, it is only possible to consider options for closing a financing gap at an abstract level that rarely helps in pursuing governments to allocate additional financing from the general budgets.

Establishing the funding baseline

A thorough understanding of the current operations is needed to assess additional present or future needs. This will include: (i) careful review of historical data (whether in a basic form such as level of employment, wage level, in a more dynamic form such as historical trends or in an analytical form such as person days or average cost of laboratory chemicals per inspection); (ii) efficiency appraisal of the current operations and identification of possible improvements; and (iii) assessment of current assets and their expected useful lifetime (as input to define budgets for capital investment).

Projection of costs

Even if activities continue at their current level, there is a projected increase in personnel costs (as a result of salary increase, at least as an adjustment to the annual inflation level). Moreover, a periodic replacement of capital assets will be needed. A higher growth in expenditures should be well justified in terms of alternative programs considered and their cost effectiveness.

The approach to project costs is reflected in Annex 2-1 where multi-year budgeting frame is proposed as a tool inherent to strategic planning. Modern techniques, such as modelling, may be available to facilitate this process.

Constant feedback

Tracking costs and revenues should be a constant activity to indicate areas in which efficiency improvements are possible as well as areas where transfer between items are expected to balance out and improve effectiveness. It is also helpful in updating costs, rates and trends upon which future budgets are based.

2.5.4 Scenarios for closing the financing gap

Trying to increase available resources seems to be a first "reflex" action to address the lack of funds. Inspectorates should change this line of action and start by improving the actual practices of budget management so as efficiency is increased; in some cases this may be sufficient to close the financing gap. Where improving internal efficiencies will not achieve the desired result, other options should be considered: reducing demand and/or developing revenue sources. These three possible options do not exclude each other and can be applied in different combinations; raising efficiency will be the basic element of any scenario.

It should be clear to the inspectorate that whatever action it chooses to take, political support is needed for it to materialise. Budgets are allocated through other governmental agencies (*e.g.* ministries of finance) and innovative financing or funding initiatives might need regulatory actions.

The inspectorate should have a dual approach to mobilising this political support through official (bureaucratic) channels as well as through public opinion. The balance of the two components depends upon the decision-making mechanisms of specific countries. In any case, it is most likely that inspectorates should earn their political support through the perceived value of their achievements.

Option 1: Raising efficiency while preserving effectiveness

Given limited resources, the inspectorate should always strive towards a higher level of efficiency. An accurate definition, shared by all members of the inspectorate, of the nature of its output is a pre-requisite for efficiency. Inspection planning, implying an accurate identification of priorities and objectives, is also a necessary activity for higher efficiency. Field inspection activities, and accordingly time and resources spent, should be limited to those implied by the inspectorate's objectives.

Multi-media inspections are generally more efficient than single-medium inspections. A targeted investment in human capacity and technical skills can prove highly rewarding in the long term.

An accessible and constantly updated database is another necessity for increased efficiency, saving the inspector's time previously spent in reconstructing case histories, that can easily be made available through adequate information management.

The use of available limited resources should optimise the involvement of the inspectorate in the different activities. This should be well planned so as not to overwhelm the inspectorate or result in a low involvement in any of the activities. As a principle, the inspectorate should not be totally involved in one activity while not active in the others. Being dormant in one activity, such as the routine inspection, affects other activities, for example, by leading to an increase in the number of complaints. Moreover, reduce planning activities might lead to non-achievement of the required objectives. As effectiveness is closely related to the quality of human resources, training should never be, as it is often the case, the first candidate for reducing expenditure.

Option 2: Reducing demand

When making attempts to reduce demand, one could think about the following options:

Redistribute burdens

A possible line of action to counteract the scarcity of resources is to prescribe monitoring obligations to the polluters. The self-monitoring of industrial activities and sometimes regular reporting to authorities is obligatory in a number of countries. This does not eliminate the responsibility of authorities to do their own monitoring and to ensure that laws, regulations, and license conditions are complied with. However, this still transfers a major burden to the regulated community consistent with the "Polluter Pays Principle". This option, however, needs a regulatory intervention. It also requires the existence of an extensive infrastructure especially in terms of authorised laboratories as well as the standardisation of sampling and measurements methods.

Out-source services ("privatising" government functions)

Strategic alliances with private sector and non-profit citizens' organisations show considerable potential as a way to lower costs through improvement of operating effectiveness of public services and decreasing budget deficits at the national and sub-national levels. In some cases, for instance, "privatising" government functions can reduce costs and improve revenue flows.

Box 2-7. Chicago's parking enforcement programme: How can one save $5 million annually in administrative costs?

During the 1980s, $420 million of parking ticket fines went unpaid in Chicago. That was because, after a ticket was written, it took an average of two years for the ticket to be recorded. But, in 1990, Chicago turned the recording process over to Dallas-based firm Electronic Data Systems (EDS). Now the 14 000 parking tickets written by police officers each day are electronically imaged and stored by EDS personnel the very same day. Other parking tickets, written by meter monitors, are entered by the ticket writer directly into hand-held computers and are electronically transferred to EDS. The city is saving around $5 million a year in administrative expenses, ticket revenues are increasing substantially, and parking meter revenues are significantly higher.

Source: Wright, P. et al., Strategic Management: Concepts and Cases, Prentice Hall, New Jersey (1998)

In environmental inspectorates, a possibility to cope with the budget problems is to out-source monitoring of the quality of the environment. It is clear that this is possible if the total budget is not constrained but for example there is a ceiling on acquiring equipment, or if some of the potentially acquired equipment will not be frequently used, thus increasing the fixed costs per measurements. The other possibility where this approach would work is when there is a higher confidence in the efficiency of the private sector as a service provider. Another option available due to this approach will be to charge the facility for out-sourced monitoring services rather than spending the scarce resources of the inspectorate.

Increase synergies with other government authorities/programs

Existing structures and functions within the government should be utilised to assist compliance and enforcement activities. Information exchange between various government entities would avoid duplication of effort and overlapping activities and would allow for the effective utilisation of resources. Moreover, joint planning and periodic meetings are important to ensure effective co-operation. The extent to which government entities can share and leverage resources reduces the amount of revenue funding required not only for compliance and enforcement, but also for other government programs as well.

Compliance promotion

Recurrent and persistent non-compliance increases the costs to inspectorates. A higher level of compliance should, therefore, effectively contribute to the reduction of these costs. A comparative cost-effectiveness analysis should be conducted for options considered to complement the typical enforcement approach. Several factors contribute to creating a responsive climate for compliance. They include:

- Provide awareness and technical assistance to the company;
- Build public support;
- Publicise success stories;
- Provide economic incentives and create financial arrangements;
- Build environmental management capability within the companies;
- Maintain a transparent enforcement system;
- Show flexibility in implementing enforcement actions.

Option 3: Developing revenue sources

The other line of action is developing revenue sources. As mentioned earlier, the public service rendered by the inspectorate should mainly be financed by the general budget. However, additional resources to support these public funds may prove necessary. Revenue sources could be totally new or could already exist but need to be directed towards financing the inspectorate activities through a dedicated fund or an earmarked allocation in a more general fund.

Earmarking environmental charges and taxes

These include product taxes and charges, effluent taxes and charges, and administrative charges. Environmental charges and taxes (on pollutant emissions) are a more appropriate source of revenue than user charges/fees. User charges (water, solid waste, and wastewater) levied to recover the cost of public services, such as wastewater treatment, are the basis for the revenue of a specific fund aimed at financing the service (they are classified as a cost recovery based instrument). These are therefore not totally appropriate as a revenue source for a general inspection fund. Only part of this revenue could be allocated to finance inspection activities directed to the specific user. Otherwise, the use of the funds will not be consistent with its definition.

Product charges have several advantages over emission charges including ease of collection and enforcement, and are more easily incorporated into the existing tax system, avoiding the need for wholly new systems of administration and control. In general all types of environmental taxes and charge systems will work best when they are simple and transparent.

Earmarking environmental fines and non-compliance fees

In some cases, penalties and fines can be used to provide a revenue source for environmental funds. Because both are related to a state of non-compliance, they cannot assure a stable revenue base in the long-run and can even provide perverse incentives for inspectors. They should not be relied on as the main sustainable source of fund revenues for inspection.

Charges or services rendered against fees

The following revenue options could be considered:

- Administrative charge for review of environmental impact assessments, as well as the proponent's appeal fees;
- Administrative charge for permits;
- Charge for conducting laboratory analyses for third parties and rental of laboratory equipment;
- Charge for sampling analyses for repeated non-compliance;
- Charge for environmental inspection (might also be in cases of repeated non-compliance).

They need to be tailored to avoid possible conflict of interest resulting from the dual role, in some cases, as a service provider and a regulator.

Donations

Inspectorates may receive donations from external and internal sources. Donations are also not reliable in the long run, but sometimes, depending on a country's economic situation, they are more reliable that state budget sources. They could complement the role of non-compliances fees and fines in the short term.

2.5.5 Factors that influence the resource-intensity of compliance assurance

Key factors that influence the resource-intensity of compliance assurance programmes include:

Specific commitments

Domestic and international legal commitments: An inspectorate will undertake actions to protect the environment within national boundaries, as well as to prevent transboundary pollution. This will arise from domestic environmental legislation, international or regional treaties.

Inspectorate's managerial decisions related to the results of policy implementation: For reasons based on changes in the state of the environment, or on the performance of particular regulatees, an inspectorate may also commit to a campaign of inspections in a particular location, or to addressing a sector of industry that uses a certain type of equipment or releases specific pollutants.

Commitment to co-operation with other regulatory bodies: Where responsibility for inspection is shared with other government agencies, the compliance assurance programme will take account of the requirements for coordination and interaction. Some details of the programme will need to be agreed with such bodies in advance.

Profile of the regulated community

The characteristics of regulated industries will considerably influence the design of inspectorate's programmes. The inspectorate will need to study the potential impact of different facilities, the mass flow of substances emitted, the complexity of installations and the age of their infrastructure, etc. After having identified the regulated community, the inspectorate will possess a list of companies that are subject to compliance assistance and inspection. This information should allow the grouping of installations for the purpose of setting priorities, calculating the resources required and allocating duties to inspectors.

Available mix of skills and number of inspectors

The mix of inspectors' skills and personnel number will ideally be driven by the compliance assurance strategies and tactics. It is, however, more likely that the reverse happens: strategies and tactics are constrained by the pool of inspectors available or acquirable. Present and likely new resources have to be taken into account when short-term and long-term plans for inspections are prepared, since it is likely that available resources will dictate how many companies can be inspected in a certain time period and how efficiently inspections can be carried out.

The balancing of human resources and inspectorate's duties requires precise knowledge of the total amount of personnel time available. This requires a review of the number of qualified inspectors available in-house, relevant personnel from other (local, regional, national) government organisations, consultancies or certifying bodies, or otherwise available (*e.g.* by way of secondment or short-term contracts).

Some inspectorates have their quota of permanent staff fixed by the legislation. In such circumstances it is difficult to vary the number of permanent staff to match increased workloads. To address the problem of permanent staff shortage, it is common practice to employ contractors on short or medium term contracts. If so, the inspectorate must first resolve several issues, including, for instance, the authority of contractors to inspect private property and to possess confidential business and government information.

Time available for different tasks within compliance assurance programmes

Detailed calculation of effort available for compliance assurance requires analysis of all the other duties of an inspector. This will vary from country to country, and from inspectorate to inspectorate, depending upon organisational responsibility and management arrangements. The typical duties of an inspector, in addition to inspection, may include participation in licensing (permitting), administration, advising other inspectors 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, report writing, attending meetings on behalf of the organisation, and enforcement actions.

This analysis will allow estimation of the total in-house inspector time available. It may also create an opportunity to evaluate the relative effectiveness of the duties carried out by inspectors and to determine the best use of inspectors' time. For example, time spent advising policy-makers or legislators on the practicalities of new environmental legislation or regulations may seem at first glance to be an unjustified diversion of inspectors from their proper role. However, analysis of the time spent on such an activity, together with an evaluation of the benefits of having legislation which is practical and enforceable, is likely to show that time devoted to giving such advice is well spent for the longer-term effectiveness of the regulatory process and for protection of the environment.

Resources required by different types of inspections, including reactive inspections

In order to calculate the total time required for a particular compliance assurance programme and, hence, to plan the activities that are feasible to perform given available human resources, it is necessary to estimate the time taken to carry out each type of inspection. Different types of inspections require different amounts of time. This depends on the nature of activity to be undertaken (including compliance assistance during the inspection), on the number of inspectors involved, on practicalities such as the travelling distance to the individual installations, and on the time required for related, follow-up actions. The related follow-up activities may range from report writing, through analysis or survey of supplementary information, to various types of enforcement actions.

All inspectorates will have to carry out reactive inspections in response to accidents, polluting incidents or to complaints by citizens. It is difficult to calculate the time required for such events for the purpose of programme planning, but it is possible to review past experience and to extrapolate it. Based on such an estimate, a proportion of time may then be set aside for foreseeable but unplanned events. The compliance assurance programme should take into account any procedures or guidelines prepared by the inspectorate for carrying out reactive inspections. If no such guidelines exist, it may be advisable to improve the estimate of time required for such inspection by categorising incidents according to their environmental significance and allocating an amount of time to the responses in each category. Experience is likely to show, for example, that the majority of reactive inspections are in response to complaints by members of the public and that such responses, individually, need less time than investigation of a major pollution incident.

Approaches in prioritisation

Priorities will have to be assigned to the various activities and the planning process reiterated until resource requirements and available resources match. Such prioritisation will be a matter for the inspectorate and government, and will have to consider whether the final programme will deliver the necessary environmental objectives. If the process results in an inadequate level of compliance assur-

ance actions, the information and related calculations may be a valuable element of any submission for more staff or financial resources. Publication of such information may be required, in any case, if cost recovery charging is implemented and if related information has to be made available to operators and others. The process of prioritisation may also be assisted by reference to information on the risks associated with operator performance and pollution hazard.

Possible efficiency gains

Often, inspectorates consider how to achieve the highest possible effect, mostly in terms of compliance behaviour, with available compliance assurance tools. Traditional programming thus targets effectiveness, but more and more efficiency (effect against the lowest possible costs) becomes part of the considerations. For example, efficiency gains can be obtained due to:

- Experienced inspectors and other inspectorate staff;
- Targeted and well-developed strategies and tactics;
- Optimally balanced bureaucracy and rationally organised administrative systems;
- High quality legal requirements (enforceable, applicable and feasible rules).

During the set-up period of an inspectorate or during major reforms, an increase in **time requirements** is to be expected. This is due to the fact that time will have to be used not only to carry out inspections, but also to train new staff members, to develop compliance assistance tools, to participate in the development of administrative procedures in the inspectorate, and to assist in improving enforceability and practicability of (new) environmental legislation and permits. After a period of time in which the new inspectors have been trained and the inspectorate's approaches are well defined, it is rather usual that an exponential increase of results takes place, both in a quantitative and qualitative respect.

Post-inspection activities

The number of inspections ending up in court cases depends on the legislation as well as the compliance status and culture of a specific country. Knowing the rate of these cases per inspection performed is important for identifying the human resources required to cope with the judicial aspects in the inspectorate. The number of experienced lawyers or people with a degree in law will depend on this rate as well as the characteristics of the national judicial system.

Whether in court or administrative processes, inspectors will be involved in the process of providing response to serious violations found. It can be very time consuming to help to prepare explanatory documents for higher decision-makers (whether judicial or administrative), to assemble and present evidence both testimonial and documentary, and to negotiate settlement agreements. Inspectors also may calculate and present proposals for reasonable punishment for past violations. After any settlement or judgment is reached, inspectors must monitor its full performance.

Fulfilment of management and administrative tasks

Management: Supervision and quality control requires one person per approximately fifteen inspectors. For less experienced inspectors, more coaching is required from supervisors. Accordingly, the span of supervision is smaller. It is preferable that coordination with other authorities be undertaken by a limited number of people higher up in the organisation. The manager, supported by an administrative employee with experience, takes care of such duties. Other management activities include the preparation of periodic plans for inspections and plans for material base development and human capacity building.

Administrative support: Inspectors write and type their routine reports according to predefined formats. However, in some cases, administrative support is needed for special report typing. Moreover, such support is needed for filing, telephone answering and keeping up agendas. Good support in this respect saves the inspectors' time for duties they are trained and hired to do.

Evaluation and reporting: This includes all kinds of post-inspection activities, from report writing to judicial procedures and evaluation, and revision of the inspection plan. The results of the inspections are compared with the objectives of the plan. In the case of deviations, conclusions on their root causes are formulated, as well as the lessons learnt.

ANNEX 2-1. EXAMPLE FRAMEWORK OF A STRATEGIC ACTION PLAN[22]

(Based on http://www.managementhelp.org/, Carter McNamara, MBA, Ph. D)

Title Page

At a minimum, the Title Page should contain the following information:

- Name of the organisation;
- Strategic plan title;
- Period [insert dates];
- Date when the plan was approved (by board of) director(s).

Table of Contents

The Table of Contents will have the following aspect:

- Executive Summary;
- Board Authorisation of Strategic Plan;
- Organisational Description;
- Mission, Vision, and Values;
- Goals and Strategies;
- Appendices:
    - A - Action Planning (Objectives, Responsibilities and Time-lines);
    - B - Description of Strategic Planning Process Used;
    - C - Strategic Analysis Data (External Analysis, Internal Analysis and List of Issues);
    - D - Goals for Committees and Chief Inspector;
    - E - Staffing Plans;
    - F - Operating Budgets;
    - G- Financial Reports (Budgets, Statements, etc.);
    - H - Monitoring and Evaluation of Plan (Criteria, Responsibilities and Findings);
    - I - Communicating the Plan.

Executive Summary

Complete this section after the other sections of the plan document are finished. The Executive Summary describes plan highlights to politicians, management, employees and other stakeholders. The Executive Summary should be one to two pages in length at most. It should include very concise descriptions of the most important information from the strategic planning process and its results. For example, very brief descriptions should be included of what is in this document and how to use the document, strategic issues and goals, when the plan will be implemented, how the implementation will be monitored and by whom, and any specific actions required by upper management.

[22] Based on the materials of the Free Management Library, http://www.managementhelp.org/

Political authorisation of Strategic Plan

Authorisation designates political approval of the strategic direction and action plans described in this strategic plan document.

Organisational description

This section should include information that will be informative, particularly to readers from outside the organisation:

- Brief overview of the history of the organisation;
- Description of major programmes and services;
- Overview of major accomplishments and other highlights throughout the history of the organisation.

Mission Statement

The mission statement is a concise description of the purpose of the organisation. It answers the question: Why does our organisation exist?

Vision Statement

The vision statement is an answer to the question: What do you hope for those who benefit from your work?

Values Statement

The values statement depicts the priorities of how the organisation carries out activities with stakeholders. The responsible politicians and chief inspector should regularly refer to the values statement to provide guidance to the nature of how the inspectorate and its programmes should operate.

Goals and Strategies

1. Goals should be "SMARTER": When designing and wording goals, they should be "SMARTER", that is, Specific, Measurable, Acceptable to the people working to achieve the goals, Realistic, Timely, Extending the capabilities of those working to achieve the goals and Rewarding to them.

2. Write down goals to address issues: What must be achieved in order to address the issues? Consider goals over the term of the strategic plan, but consider especially closely the next year.

3. Write down forward-looking goals: Next, write down more forward-looking goals. If a new field of interest is being developed, then goals will probably be to develop a strategic plan, do a surroundings analysis to build a programme, hire staff, etc. Consider goals over the term of the strategic plan, but look especially closely at the next year.

4. Associate strategies with each goal: Under each goal, should be written the major approaches (or strategies) that must be used to achieve each goal. Consider strategies over the term of the strategic plan, but especially over the next year.

5. Consider whether the goals and strategies are in line with your mission, vision and values: Does each goal and its associated strategies really contribute toward the mission and vision of the organisation? Will the goals be reached by using strategies that are closely aligned with the values of the organisation? If not, then very closely reconsider whether those goals and associated strategies should be pursued.

APPENDIX A. Action Planning (Objectives, Responsibilities and Time-lines)

In the section labelled "Your Action Plans", action plans should be written down, especially for the next year. Action plans specify how the strategic goals and strategies will be carried out. Action plans often include various objectives to be reached while achieving each goal, who is responsible for achieving each objective and by when.

Action Planning (who is going to do what and by when)

Goal No.__
Strategy No. __ . __

Objectives for Strategy __ . __	Date of Completion	Responsibility	Status and Date

APPENDIX B Description of Strategic Planning Process Used

This appendix might include, for example, a description of how the strategic plan document was developed, who was involved in the planning, any major problems and lessons learned during the planning process, etc.

APPENDIX C. Strategic Analysis Data

1. External Analysis: An external analysis looks at societal, technological, political, and economic trends affecting the organization *e.g.* trends in donations, recent or pending legislation, federal funds, demographic trends, rate of access to trained labour, roles and position of other organisations and environmental changes. Stakeholder analysis should be made too. For example:

From our external analysis, we identified the following trends and how they might affect our inspectorate:

- Political trends: (describe)
- Economic trends: (describe)
- Societal trends: (describe)
- Technological trends: (describe)
- Other trends: (describe) trends in budgets, recent or pending legislation, demographic trends, rate of access to trained labour, environmental changes, stakeholders' impressions of the organisation, etc.

2. Internal Analysis: Write down the major strengths and weaknesses of the organisation. Write down the major threats and opportunities regarding the organisation. Consider trends effecting the organisation, *e.g.* true need for programmes and feedback, reputation of the organisation, expertise of staff, facilities, strength of finances, solid administrative operations, etc. For example:

From the internal analysis, following factors were identified:
- Strengths of the organisation: (describe);
- Weaknesses of the organisation: (describe);
- Opportunities for the organisation: (describe);
- Threats facing the organisation: (describe).

3. Listing of Strategic Issues: When considering a new field of interest, it is often better to look first at the major obstacles or issues that it faces, and next identify the more forward-looking, developmental goals to accomplish over the next few years. For example, a current issue might be that there is not enough money. Developmental goals for a new field of interest might be, for example, to do a strategic plan, do surroundings analysis to build a programme, hire staff, etc.

To identify the key issues in your strategic analyses, consider the following guidelines:

a) From considering the effects identified of weaknesses and threats, what are the major issues? List as many as possible.
b) Consider each of the issues. Ask whether it is "important" or "urgent." Often, issues seem very important when in fact they are only urgent. Attend only to the important issues and not the urgent issues.
c) Deal with issues that something can be done about. Issues that are too narrow do not warrant planning and issues that are too broad will impede progress.
d) Issues should be clearly articulated so that a stranger to organisation can read the description and understand the nature of the issue.

APPENDIX D. Goals for Committees and Chief Inspector

1. Organise appropriate committees: Committees should be developed that associate with each of the major areas of strategic goals. For example, if strategic goals include developing new programmes, then consider a Programmes Committee. Of course, may other types of committees can address ongoing major activities that are not directly associated with types of strategic goals, for example, an executive committee.

2. Build committees work plans: One of the best ways to ensure that committees are fully participative and effective is through use of work plans for each committee. With the committee members, design a work plan for each committee.

3. Goals for the Chief Inspector: Politicians have responsibility for providing ongoing governance and direction to the inspectorate. Often they decide to carry out these responsibilities by including the role of a chief inspector in the inspectorate. The politicians are responsible for overseeing the performance of the chief inspector and evaluating his/her performance on a regular basis.

APPENDIX E. Staffing Plans

Define each of the strategies to reach the goals and consider what kind of capabilities are needed to implement the strategies. Exactitude at this point is not of utmost importance --the staffing plan will likely be refined later. If a new field of interest is being developed, you might think about including the following typical roles in your initial staffing plan (but again, consider these roles in terms of implementing the strategies in your plan): chief inspector, administrative assistant and programme directors for each of your major service goals. However, it is common that a chief inspector is also a programme director for the first year or so. The staffing plan may be refined as you complete action planning, along with identifying who will accomplish each of the objectives. Note that in the following table, staffing is specified in terms of full-time equivalents (FTEs). One FTE is equal to one full-time staff position throughout the year. If staff start half-way through a year, then include 0.5 FTE, etc.

Staff Position	**Year 1**	**Year 2**	**Year 3**
Central administration, General operating activities:			
Staff for programme (insert name): (have a section for each programme)			

APPENDIX F. Operating Budgets

In the table labelled “Budget planning” list the resources needed to achieve the goals in the strategic plan and the costs to procure and use the resources. A budget for each of the years included in the span of time covered by the strategic plan should be developed, with a particular attention to the first year of the time span. Consider both revenue (fees, funds, levies, fines, government budget, etc.) and expenses (human resources, facilities, equipment, special materials for programmes, communication, transport, training, etc.) This budget information usually can be used later on with programme budgets and funding proposals.

The following table may need to be modified to suit the needs and nature of each organisation.

Budget item	**Year 1**	**Year 2**	**Year 3**
REVENUE:			
TOTAL REVENUE:			
EXPENSES			
Central administration -- personnel:			

Budget item	Year 1	Year 2	Year 3
Total central administration -- Personnel costs:			
Central administration -- Facilities:			
Total central administration facilities costs:			
Central administration -- Equipment:			
Total central administration equipment costs:			
Central administration – Compliance promotion and communication			
Total compliance promotion and communication costs			
Other expenses:			
Total central administration: Other expenses/costs:			
Programme -- Personnel:			
Total programme personnel costs:			
Programme -- Other expenses:			
Total programme other expenses/costs:			
TOTAL EXPENSES			
TOTAL SURPLUS (OR DEFICIT) **(= revenue minus expenses)**			

APPENDIX G. Financial Reports (Budgets, Statements, Etc.)

This appendix might include, for example, last year's budget (planned amounts and actual amounts spent, current budget report, current Statement of Financial Position, current Statement of Financial Activities, etc.

APPENDIX H. Monitoring and Evaluation of Plan

Responsibilities and frequencies for monitoring and evaluation

Plan section, goals, etc.	Completion date	Responsibility	Written description of results to:

Key questions while monitoring implementation of the plan

Monitoring and evaluation activities will consider the following questions: Are goals and objectives being achieved or not? If they are, then acknowledge, reward and communicate the progress. If not, then consider the following issues:

- Will the goals be achieved according to the time-lines specified in the plan? If not, then why?
- Should the deadlines for completion be changed (be careful about making these changes -- know why efforts are behind schedule before times are changed)?
- Do personnel have adequate resources (money, equipment, facilities, training, etc.) to achieve the goals?
- Are the goals and objectives still realistic?
- Should priorities be changed to put more focus on achieving the goals?
- Should the goals be changed (be careful about making these changes -- know why goals are not being achieved before changing the goals)?
- What can be learned from monitoring and evaluation to improve future planning activities and also to improve future monitoring and evaluation efforts?
- Additional questions.

Reporting status of implementation

Results of monitoring and evaluation will be in writing, and will include:

1. Answers to the "Key questions while monitoring implementation of the plan";
2. Trends regarding the progress (or lack thereof) toward goals, including which goals and objectives;
3. Recommendations about the status;
4. Any actions needed by management.

Procedure for changing the plan

Regarding any changes to the plan, answers to these questions should be written down:

1. What is causing changes to be made?
2. Why should the changes be made (the "why" is often different than "what is causing" the changes).
3. What specific changes should be made, including the goals, objectives, responsibilities and timelines?

Reminders:

Manage the various versions of the plan (including putting a new date on each new version of the plan. Always keep old copies of the plan.

APPENDIX I. Communicating the Plan

Note that certain groups of stakeholders might receive complete copies of the plan, including appendices, while other groups (usually outside the organisation) might receive only the body of the plan without its appendices. Consider:

1. Every involved politician and member of management should get a copy of the plan;
2. Distributing all (or highlights from) the plan to everyone in the organisation. Even the newest staff member gains quick context, appreciation, and meaning from review of the strategic plan;
3. Post the mission, and vision, and values statements on the walls of your main offices. Consider giving each employee a card with the statements (or highlights from them) on the card;
4. Publish portions of the plan in the regular newsletter (brochures, publications, etc.);
5. Train politicians, managers and employees on portions of the plan during orientation talks;
6. Include portions of the plan in policies and procedures, including the employee manual;
7. Consider copies of the plan for major stakeholders, for example, trade associations, NGOs, etc.

ANNEX 2-2. HOW PEOPLE MAY OBSTRUCT ORGANISATIONAL CHANGE

There can be many reasons for resistance to change: people have invested a lot in the past; organisational change does not always meet their interests; changing things means that probably something was wrong; changes can interfere with existing positions and powers; they ask for energy and creativeness.

It is a manager's daily work to carry through changes. But whatever the changes may be, managers they almost always deal with the same elements: memos, discussion papers, analysis, conclusions, recommendations, proposals, etc. These documents need to be discussed and with people who are generally not those who have written them. In many cases the person will not read the document in detail, but simply form a negative opinion related to one point they did not like.

This annex describes a list of reactions that commonly occur. It helps managers to recognise and prepare for these reactions. The list originates from "Vijftig manieren om dwars te liggen" ("Fifty ways to obstruct") from Frans Krips (1985).

Possible reactions

- These arguments show that the change should not be carried out;
- The proposal has not been well thought out;
- The proposal has not been discussed sufficiently;
- There was insufficient consultation;
- There is insufficient information;
- The wrong procedure was followed;
- Was information gathered on how this issue is dealt with in other places?
- It can never work without support of the staff members;
- The targets have not been clearly formulated;
- The use of the language is insufficient;
- As a whole it has no quality;
- First we need another discussion;
- The colleagues have been insufficiently consulted;
- It all goes too fast;
- We cannot discuss it now, because we do not know the preconditions;
- There are other problems that are more important for society/the organisation;
- This is only an issue of luxury;

- This discussion will never bring a conclusion;
- How can we guarantee that the target group is really reached?
- It is not feasible to also ask this from our people;
- Another plan that will not work. It will waste my time;
- We already tried this before in 1995;
- We did not yet evaluate our latest meeting on this issue;
- Let us try it out for a limited period of time and then evaluate it;
- First of all we should list the problems;
- This issue should first be studied in more depth;
- This issue lends itself to a broad discussion with society/the organisation;
- Who exactly is responsible for this?
- How can we talk about the overall plan if we do not know the details?
- How can we talk about the details if we do not know the overall plan?
- Expertise from outside has to be brought in;
- What does the plan mean for the legal status of the employees?
- We have to come to a good priority setting first;
- Good proposal, but you have to put it in a broader perspective;
- The company around this table is not representative/complete;
- These figures say nothing;
- To solve this problem we first need to develop a new methodology;
- I do not have amendments, but this document is totally unsound;
- We would like to have a number of alternatives to accompany this proposal;
- Was current research taken into account? Would we not be better to wait for the results?
- Has the degree of participation been sufficient?
- I refuse to co-operate with ad hoc approaches;
- The first thing to do should be to nominate a commission;
- We first have to determine the criteria;
- On behalf of whom has the document been written?
- I do not understand the discussion? What actually is the issue?
- Would you be so kind to provide us with a practical example?
- In theory it sounds good, but now let us see what it means in practice;
- An insufficient distinction has been made between policy and execution;
- The document(s) should be screened by a lawyer/linguist first;

ANNEX 2-3. ORGANISATIONAL CULTURE (HINTS FOR MANAGERS)

Be the ultimate example in all the expectations you have of your staff. Do not expect them to act in a way in which you fail to do so.

1. Staff are generally able to manage themselves to a high extent. Allow them to do so;
2. Expect that your people supervise their own performances;
3. Desire and acceptance of change are crucial for the development of an organisation. Managers should encourage their staff in this;
4. By questioning staff it should be checked whether they are all aware of the organisation's strategy;
5. Results of your organisation should be celebrated;
6. Staff should be given specific tasks with clear targets;
7. When opportunities occur you should insist that, after assessing the risks, they are seized;
8. Stress to your staff that not taking risks usually comes from a lack of self-confidence;
9. The thinking power of all your staff members should be used;
10. Leave decisions that your staff can take just as well as you can, to them;
11. Staff have improvement ideas. Ask and listen to them;
12. Concentrate on people's behaviour. That is your concern. Not on their character;
13. Unreasonable demands should not be given in to. Seek compromise;
14. People's problems and complaints are important. Encourage your staff to come to you;
15. Be clearly impartial in quarrels. Do not take side;
16. It is important to know what your staff members mean. Therefore you should question them until you have a full understanding;
17. Read people's body language;
18. If people show that a task is too difficult for them, assist them;
19. Your staff's personal problems should be dealt with as a friend not as a boss;
20. Make time to talk to any of your staff who comes to you with problems;
21. Approach resistance to change as an issue that can always be solved;
22. Act positively towards your staff in their creative ideas for change and thus motivate them;
23. When producing plans for change, involve as many people as possible;
24. Ask people what you can do to help them should they fail;
25. When appraising staff, start with concentrating on what a person has done well;
26. Giving up on plans is irreversible. Think well before you do so;
27. Consider cutting unserviceable or unworkable activities rather than carrying on in vague hope that things will be better in future;
28. Usually staff members have good reasons why they are not performing well. Try to look upon situations from their point of view;
29. Encourage your staff to work together as partners who help each other;

30. Take care that you let your staff know all the key facts about their work;
31. Rather than to change your staff members' characters, influence their behaviour;
32. Constructive behaviour should be encouraged and rewarded;
33. Take care that people's lower level needs are met as much as possible;
34. Whenever deserved, thank your staff members;
35. Additional to personal praise, organise public praise;
36. Asking open questions promotes honesty of staff members;
37. Staff should be given full opportunity to express their genuine feelings;
38. Insist on people co-operating and communicating freely and openly;
39. Talk with your staff informally;
40. Abandon procedures, manuals and forms that you do not or hardly use. Only replace those that are really missed;
41. Inaccurate rumours should be neutralised immediately. Act fast in denying them. Do not deny what is true;
42. Suggestions from employees to solve problems should be encouraged and listened to;
43. Do not give your staff orders, teach them by showing how;
44. Ensure that those present at meetings really need to be there;
45. Take care to address the intellectual and emotional needs of your staff;
46. Unhappy employees may indicate serious problems. Listen to them;
47. Discipline should be applied, but combined with empowerment and trust;
48. The best results will be achieved by people who enjoy their work. Support your staff in enjoying their work;
49. Assist your staff in the achievement of their long-term goals and aspirations;
50. Never let training be the first thing you cut back on. Always the last one;
51. In case of mistakes, ask yourself if you had part in them;
52. Find a wise mentor for every newcomer. Make use of outside trainers as often as you can;
53. If somebody is moved to the wrong job, do not keep silent.

Source: "Managing People", Robert Heller (1999)

ANNEX 2-4. JOB DESCRIPTIONS FOR SOME POSITIONS WITHIN A MODERN INSPECTORATE

This annex provides examples of the job descriptions for a number of positions, which can be said characteristic to a modern environmental inspectorate, for instance:

- Head of Office Industrial Inspection;
- Senior Enforcement Policy Assistant;
- Senior Technical Inspector;
- Administrative Inspector;
- Waste Substances Inspector;
- Enforcement Information Analyst.

Head of Office Industrial Inspection

Supervision over: Senior technical inspectors, Technical inspectors.

Main responsibilities:

1. Responsible for a group of approximately 20 inspection officers, mostly with higher professional education or upper secondary vocational training, in the fields of personnel management, organisation and co-ordination, and partly financial management;
2. Contributes to policy-making within the inspectorate and to the implementation of this policy in specific measures;
3. Participates in internal and external consultative bodies.

Actual activities for each of the main responsibilities:

1. Ensures that the office attains the objectives and carries out the (main) tasks. Responsible for dividing the work, setting priorities, monitoring the quality and the unity of the performance and adjusting the results, co-ordinating, and internal and external harmonisation and integration;
2. Contributes on the basis of his expertise to the implementation of the enforcement policy in the broadest sense of the word (condoning, imposing penalties, applying enforcement measures, enforceability of licenses, assessment of the enforceability of new legislation, etc.);
3. Gives advice, both solicited and unsolicited, to the political board and to the inspectors (including settlement under administrative law and policy-related effects of offences). Maintains independent contacts with and advises the public prosecutor's office with regard to the settlement of cases, whether or not under criminal law. Takes part in internal and external consultative structures, such as special departments, ad hoc committees, regional environmental inspection groups and other institutes.

Specific educational requirements: University degree or higher professional education in a subject relevant to the position.

Specific experience requirements: Experience in management and at least five years of experience in the relevant field. Sense of administrative relations and knowledge of procedures under administrative and criminal law.

Salary indication: Salary scale 14.

Senior Enforcement Policy Assistant

Supervision over: none.

Main responsibilities:

1. To prepare and develop the inspectorate's enforcement policy from an administrative and legal point of view;
2. To participate in consultative bodies to promote the harmonisation of the inspectorate's enforcement policy with other institutes, such as the public prosecutor's office, the police and municipal consultative bodies;
3. To carry out general legal investigations for the department and to draw up solicited and unsolicited memorandums etc. on the implementation of the environmental legislation.

Actual activities for each of the main responsibilities:

1. Implement the enforcement policy to be followed by the regional/local authorities. To take initiatives for that purpose *e.g.* by making proposals for the legal supervision of the enforcement in the practical field (interpretation of legislation, assistance to other departments in the organisation, co-ordination in the application of sanctions). To follow administrative and legal developments in doing so. To provide legal assistance in specific actions. Responsible for administrative and legal enforcement matters;
2. Initiate the further elaboration and solidification of the consultation structure for regional enforcement. Responsible for the secretariat of the Regional Enforcement Consultation Steering Group; plays a co-ordinating role between the various enforcement authorities in the region. To consult with them, make proposals on the desired approach to the use of sanctions;
3. Give written advice to the head of the inspectorate in response to problems established by him or presented to him in an administrative or legal area. This advice may be related to the entire policy area of the inspectorate.

Specific educational requirements: University degree in law and/or environmental protection.

Specific experience requirements: Experience in trade and industry, in administrative and political relations of government organisations and in dealing with environmental and legal matters at university level.

Salary indication: Salary scale 13.

Administrative Inspector

Supervision over: None.

Main responsibilities:

1. To implement and report on administrative inspections at plants;
2. Carry out investigation activities on administrative offences;
3. Support the management of the inspectorate.

Actual activities for each of the main responsibilities:

1. To independently inspect and assess the (simple to complex) books of small to very large enterprises on the basis of desk planning and of internal and external impulses, all of this in the light of the enforcement of the applicable environmental regulations;
2. To participate in environmental audit teams. To advise on the measures to be taken;
3. To collect information on suspected offences and to consult in this context with the public prosecutor's office. Can draw up official reports in his capacity as an investigating officer

4. To advise the management of the inspectorate if so requested on matters of a administrative, organisational and financial nature;

Specific educational requirements: Higher education in economics and management, business studies; criminal law enforcement powers training.

Specific experience requirements: At least three years of experience in this field.

Salary indication: Salary scale 10.

Enforcement Information Analyst

Supervision over: None.

Main responsibilities:

1. To independently perform analyses of inspection and enforcement information stored in automated databases and other (written) sources at the inspectorate and other institutes involved in environmental inspection in the area;
2. To support enforcement investigations at plants and at other locations by 'opening' automated databases;
3. To provide support both within and from the inspectorate on matters related to automation.

Actual activities for each of the main responsibilities:

1. To analyse data by means of (inter)departmental information systems in order to deduce (a suspicion o) criminal behaviour from those data. To draw up reports of the findings and if necessary official reports;
2. To assist in enforcement investigations on location by searching in automated systems and by making 'hidden' information accessible. To draw up reports of the findings and if necessary official reports;
3. To support the office staff in day-to-day automation questions and to call in the help of the organisation's Automation Department in this respect. To represent the inspectorate externally with regard to automation issues. To support the efficient functioning of the automated systems within the inspectorate.

Specific educational requirements: Medium vocational training in a technical direction, including information sciences, knowledge of process technology; criminal law enforcement powers training.

Specific experience requirements: At least two or three years of experience with enforcement.

Salary indication: Salary scale 9.

ANNEX 2-5. HINTS FOR SUCCESSFUL INTERVIEWING

The interview questions below are designed to encourage candidates to talk about themselves, get them to analyse their work habits, strengths and weaknesses, and give a clear picture of what they can do for the inspectorate. They can be used as the basis for an interview script, but they may need to be customised to correspond to a personal interviewing style.

Experience

Use the following questions to help judge a candidate's experience level:

Tell me about a typical day on your current job. What do you like about it? What do you not like?

This question is designed to give an idea if a candidate will like the day-to-day responsibilities of the position he or she is interviewing for. If it is found that a candidate does not like doing something that would be central to working with the inspectorate, then he or she will not fit in. From the answer to this question it should also be obvious whether this person possesses any unique skills that can be easily transferred to this new position.

What are three things you do really well? What are three areas where you need help?

Ask these questions to find a person's strengths and weaknesses. Look for a response that will let you know if a candidate has a realistic view of his or her capabilities.

Who is doing some really innovative things in your field of work?

Use this question to find out how closely candidates follow their field of expertise, and how absorbed they are in their line of work. No business or organisation operates in a vacuum, so it is important to understand what other organisations and stakeholders are up to. This question will give an idea of how open candidates are to innovation, and how closely they pay attention to details. It would also be possible to ask what publications they read to keep up on their knowledge to see how closely they follow trends and news that will impact their job.

Why are you ready to leave your current job?

There are a few reasons for tackling this subject. It needs to be clear if the candidate was difficult to work with, had an attitude problem, or had trouble delivering results. If a person has only been in a job for a short while, the employer needs to feel confident that the person will not leave their inspectorate just as quickly.

Work style

Use the following questions to help judge if a candidate's work style complements the way the organisation conducts its activities:

How would you react in a scenario that would require you to work independently? How would you tackle a project like that? How would you motivate someone who is not doing his job? Tell me about a recent project you have completed.

Scenario-based questions can be very useful for checking a candidate's ability to solve problems creatively and see how he/she thinks on the spot. They also give you an idea of whether a person's processes are complementary to the business. For example, a prospective bookkeeper could be asked: "If I asked you to come up with a way to speed up receivables, how would you tackle a project like that? How would you get started?" Or a prospective line manager could be asked: "How would you motivate someone who isn't doing his job?" This will help clearly understand how the candidate approaches problem solving. Ask for measurable outcomes to weight up their ability to meet deadlines and complete projects.

What was a typical day like? What roadblocks did you run into and how did you get around them?

It may be necessary to probe to determine exactly how the candidate accomplished these things within the parameters of his or her job.

When you are working on a group project, what role do you typically play? Why?

Is this person the leader? The note-taker? The doubter? This will give an idea of how they view their own work style, and, when given the opportunity, how they portray themselves.

Tell me about a time you had to make a critical decision, and what went into that process.

This question again deals with how a person makes decisions. The answer should help to gather information about a person's judgment, willingness to take risks, and decision-making capabilities.

In what situations have you disagreed with your boss? What was the outcome?

A question like this can be used to separate yes-people from those that can enhance your business by asking intelligent questions. Be careful of someone who appears too argumentative or disagrees for the sake of disagreeing. Look for someone who disagreed with a supervisor and had the situation turn out positively.

Temperament

The following questions will provide insight into a person's character traits:

What was the worst manager you ever had like? What about the best manager? Why?

The answer to this question will lead to an understanding of the kind of support a person needs to do his or her job. Rather than asking a hypothetical question, specific on-the-job experiences are discussed.

What is the best environment for you to function in?

Some people thrive in a noisy, chaotic office, while others demand quiet. In addition, many smaller organisations may operate in a non-traditional environment. Use this question to clarify a prospective employee's expectations. Candidate with a large organisation background might not be ready to give up some of the corporate comforts they have grown used to.

What do you think it will be like to work in a small/large organisation?

The answer to this question shows the impression a prospective employee has of the work environment. It will help to see if they have a realistic idea of what to expect from the job.

Do you have any hobbies?

Do not use what candidates do after work to judge how they would perform on the job. However, asking about what someone does at leisure can give some indication of their personality. A person who skydives every weekend is probably a bit more of a risk-taker than a person who knits.

What is the best thing you have ever done in your life? What are you proudest of?

The actual answer to this question is not particularly important. Instead, you want to look at how the person answers. Do they exude the kind of pride and enthusiasm you would expect?

Work skills

The following questions will provide an insight into a person's character traits:

What would your best reference say about you? What would a reference you would not give me say about you?

This question can be phrased in in a number of ways -- What would your manager say about you? What would the people you manage say about you? This is a way to gauge how honestly people can look at themselves. In general, you are looking to see how introspective a candidate is.

How would you handle a specific challenge?

This is another scenario-based question. Think of a specific challenge regularly faced in your field of work.

How do you keep yourself organised?

This question will tell you how a person keeps things in order, whether he or she is forgetful, and how the person handles specific responsibilities.

What have you done to make your supervisor's job easier? Is there anything they wouldn't ask you to do?

This may give a clear idea of what a person regards as his/her primary talents. It also can be an indication of how they will relate to their new manager.

ANNEX 2-6. COMPETENCE MANAGEMENT: TWO POSSIBLE MODELS

Competence is a personal characteristic that is necessary for functioning successfully as a staff member in a specific job in order to fulfil the objectives of the organisation. In total nineteen competencies are described in the following example, which we will call the competence dictionary. The competencies have been described in concrete and perceptible behaviour. Through these descriptions the dictionary indicates what is important for the organisation.

In the dictionary per competence four levels will be distinguished. Level A is the basic level. In the case where a specific job level B has been chosen, then this includes level A as well. If level C has been chosen, then this includes the levels A and B as well, etc. Per competence level the completeness of behaviour, complexity, impact and necessary effort increase. This automatically leads to the situation that jobs with lower payment will, as an average, score lower on the scale of needed competencies.

In the margin per competence level a heading can be found. This word indicates as much as possible the core of the level. At a glance the competence can be understood. It is however advised to read the whole competence description, because referring to only one word will lead to essential elements being overlooked.

A competence profile offers a view to possible developments. Some competencies have been described in terms of behaviour that also can be read as a task. Think *e.g.* about: "drafts plans" (in the competence "Planning and organising") and "sets measurable targets" (in the competence "Focussing on results"). These can be tasks that are part of a specific job. Talking about competencies however, we talk about human behaviour, human action: an employee always plans his work, continuously sets himself targets, and works towards them.

Competencies are interrelated. They supplement each other. The competence "Convincing" e.g. will profit from a combination with the competence "Acting flexible". It will prevent the convincing activity from becoming too difficult. Another example: "Focusing on results" will often be needed by the competence "Analysing". This will be necessary to really achieve something with analytical thinking.

The chosen competencies should be read against the background of the job that has to be done. For that reason competencies of different jobs should not be compared. For the same reason there is not a clear relation between the competence levels and the payment of different jobs.

For each of the jobs in the organisation a number of nine core competencies is selected. This means that the focus will be on the nine main competencies out of the total of nineteen competencies per job. This is elaborated in the overview "Allocation of levels of competencies in Organisation A" after the elaboration of the nineteen competencies. The overview shows a limited selection from the jobs that exist in Organisation A. Per job it indicates both the nine core competencies and their expected levels (A through D – see following elaboration).

Allocation of (levels of) competencies per function in Organisation A (selection)

		Secretary	Financial administrator	Facilitating employee	Financial controller	Lawyer	Helpdesk employee	Automation employee	Junior advisor	Junior advisor internat. affairs	Advisor	Advisor internat. affairs	Senior advisor	Senior advisor internat. affairs	Middle manager	Senior manager
1.	Communicating	B	B	A	B	C	B	C	B	B	C	C	C	C	C	C
2.	Co-operating	A	B	A	B	B	-	B	B	B	B	B	C	C	-	-
3.	Motivating	-	-	-	-	-	-	-	-	-	-	-	-	-	D	D
4.	Learning to learn	-	-	-	-	-	A	-	-	-	-	-	-	-	-	-
5.	Convincing	-	-	-	-	C	-	C	-	A	-	B	-	C	-	-
6.	Decision-making	-	-	A	-	-	-	-	B	-	-	-	-	-	C	C
7.	Delegating	-	-	-	-	-	-	-	-	-	-	-	-	-	C	C
8.	Customer-oriented acting	A	B	A	C	C	B	C	B	B	B	B	C	C	C	C
9.	Taking initiatives	B	-	A	B	B	A	B	B	B	B	B	C	C	D	D
10.	Networking	-	-	-	-	-	-	-	B	B	B	B	C	C	C	C
11.	Showing sensitivity	-	-	-	-	-	-	-	-	A	-	C	C	D	-	-
12.	Focussing on results	-	A	A	B	B	B	B	B	-	-	-	-	-	C	D
13.	Acting carefully	B	B	A	C	C	B	-	B	-	B	-	-	-	-	-
14.	Analysing	-	A	-	B	B	A	B	B	B	B	B	C	C	-	-
15.	Acting flexibly	A	B	A	B	-	A	C	-	B	C	C	-	D	-	-
16.	Handling stress	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.	Vision	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-
18.	Solving problems	A	B	A	B	B	B	-	-	-	B	-	-	-	-	-
19.	Planning and organisation	A	A	-	-	-	-	C	-	-	-	-	C	-	C	C

1. Communicating

Definition: Make clear to others ideas, opinions and information in concise and correct language. Communicate both in written and spoken form in a way that the substance of the message is understood by the target group and that good relations with that group are preserved.

Level D **Strategic influencing**
- has complex conversations and formulates with others problems at strategic level; handles sensitive issues in a complex (international) context;
- influences the conversation and the atmosphere by mentioning feelings and preserves good relations; listens to the other and goes further into the arguments of others;
- writes and edits for external use and important and sensitive target groups; composes complex documents for external use.

Level C **Structuring, recognising contradictions**
- recognises positions; takes into account different needs and interests in contacts at different levels; recognises contradictions and chooses a suitable approach; effectively reacts on (non-)verbal signals;
- formulates complex problems in a clear and unambiguous way and structures a story and knows how to hold that structure;
- makes difficult subject understandable for others; uses appealing language; takes care of coherent presentations.

Level B **Imagining somebody else's situation**
- properly expresses himself both in spoken and written form in contacts at different levels; checks whether the message was received and properly understood by the other person;
- formulates tactfully; knows how to transfer a message to different targets groups both in written and in spoken form; adjusts arguments to the person;
- offers the other person the opportunity to talk; watches the use of wording; imagines himself in the other person's position.

Level A **Listening and expressing clearly**
- expresses himself clearly both in written and spoken form;
- listens and lets the other person finish his sentence;
- only says what he can truly realise;
- shows an interest in others and talks about himself.

2. Co-operating

Definition: Contributing to a common result, also in the case of absence of a direct personal interest. Devoting oneself to achieving targets with others.

Level D **Creating preconditions; actively tying people to a case**
- creates preconditions for good co-operation; knows the interest of parties and actively takes responsibility for the group process;
- involves relevant parties in the decision-making process; activates those involved to contribute to the result to be achieved; takes into account the qualities of others;
- from time to time settles for a background position in order to let others come to the foreground;
- actively searches for possibilities to prevent an "island-culture" within the organisation.

Level C **Creating collectiveness**
- agrees, together with others, on a common approach to problems;
- actively searches for co-operation with others; uses on common interests;
- knows the strong and weak point of other people involved and on that basis agrees with them about the contribution to the overall result;
- takes care that the result to be achieved is felt as a common responsibility.

Level B **Exchanging and giving feedback**
- exchanges arguments and information with others about consequences of actions; exchanges ideas and ask for reactions;
- strives for common targets and gives a timely feedback;
- knows how to give and receive; actively gets and brings knowledge from and to others;
- gives another person the opportunity to express an opinion; if necessary makes concessions.

Level A **Helping and informing**
- gives others the opportunity to express their opinion;
- offers help both asked and unasked;
- contributes to the common result by realising own targets; stands by his agreements;
- informs the other person about his own activities; keeps informed about the activities of the other person and about things that are going on in the organisation.

3. Motivating

Definition: Stimulating others to be active and involved to reach a predefined result; adjusting coaching style to the specific staff member and situation so that the staff member involved can develop himself as much as possible.

Level D **Involving and challenging**
- consults colleagues on the results to be delivered;
- takes care of challenging work at organisation or department level and sets preconditions;
- challenges staff members to do other tasks and helps them to optimise their skills; gets the maximum out of the other person.

Level C **Inspiring and directing**
- creates optimal conditions for staff members to do a good job;
- gives, on the basis of good insight, a clear picture of the qualities and points of development of staff members;
- describes the direction for development and supports in formulating the development targets; positively critical, addresses others on their points for development and helps them learn from their mistakes;
- inspires to follow common targets, delivering results and contributing to common learning.

Level B **Giving trust**
- gives, within predetermined frames and responsibilities, trust and room to the other person to act independently, to experiment and to make mistakes;
- gives honest and constructive feedback and keeps asking; takes care that others feel involved and traces what moves other people;
- celebrates (interim) results with others;
- stimulates the other person to formulate objectives in personal development.

Level A **Stimulating**
- gives an overview of the tasks and responsibilities to be carried out, including preconditions and targets;
- talks to others, listens, pays attention to people, show an interest, is approachable, and takes care that others feel comfortable;
- compliments others for their work and stimulates them; sets a good example to others through his behaviour.

4. Learning to learn

Definition: To absorb and critically process new situations and problems and to show the ability to use new experiences effectively.

Level D **Renewing, letting learn**
- creates preconditions in the organisation through which the staff members have increased possibilities to learn, stimulates the use of all kinds of learning methods;
- develops new points of view and knows how to apply these effectively; is be innovative; enables others to learn from each other;
- understands own learning processes; knows what is necessary for his own development in the long term; realises learning targets.

Level C **Learning with others**
- shares knowledge and learning experiences with others; learns from and with others;
- enables others to learn from own experiences and (new) points of view;
- shows eagerness in learning and has ideas about his own development; knows his own preference in learning style and knows other manners of learning; formulates learning targets and realises these.

Level B **Learning from others**
- looks for new developments; applies experiences to himself; reads up on new subjects fast – also beyond his own specialisation and skills;
- learns from experiences of others; uses this himself;
- asks for support in his own development; sees his own strong and weak points and develops these.

Level A **Open-minded towards learning**
- reads up fast on new developments in his own specialisation;
- is open to reactions of others on his own work; builds on strong points and takes action on weak ones;
- learns on the basis of his own mistakes;
- shows an interest in new experiences and ideas in his own field of interest and functioning.

5. Convincing

Definition: Behaviour focussed on persuading others from a specific point of view. Planning, presenting ideas or products so that these will be accepted and carried on by others.

Level D **Authority and support/ involvement**
- radiates authority and knows how – on that basis – to persuade others to follow his points of view and ideas;
- convinces others of his own points of view, even in the case of fundamental differences of opinion or even conflict situations; maintains a good relation in this;
- realises involvement and support for plans, ideas and decisions.

Level C **Inspiring**
- convinces others in an inspiring way of his own points of view and ideas;
- imagines himself in another person's situation and makes conclusions/ takes advantage of it.

Level B **Using appealing style and relation-focussed**
- adjusts his style of acting and arguing per situation and in that uses an appealing style to gain others for his own ideas;
- shows to be a serious interlocutor and cares for the relation;
- communicates his own well-founded opinion clearly to others (including external people).

Level A **Arguing clearly**
- has an own opinion and knows how to explain this clearly to colleagues;
- substantiates his own opinion with clear and appealing arguments;
- shows an interest in the opinions and points of view of others.

6. Decision-making

Level D **Strategic, decisive in uncertain situations**
- makes strategic choices and ensures sufficient support in important choices;
- is decisive in uncertain situations or developments of present interest; does not delay things;
- radiates self confidence, has preponderance in taking decisions and takes full responsibility;
- sticks to his decisions in the case of opposition and lets others execute them.

Level C **Taking, propagating and standing by decisions**
- involves colleagues or relevant others in the decision-making; asks for feedback and strives for support for choices to be made;
- takes a decision in a thoughtful and consistent manner in situations without sufficiently clear and/or complete data;
- takes complex and sensitive decisions in own or adjacent professional areas or decisions that involve others and propagates these;
- sticks to decisions taken and involves others in their execution.

Level B **Cutting knots**
- indicates decisions with arguments in order to let the people involved accept them;
- considers; decides based on facts, taking into account the consequences of the decision to be taken;
- cuts knots in less familiar situations; takes decisions concerning colleagues or customers.

Level A **Deciding within own responsibilities**
- takes decisions based on relevant information and clear facts where consequences of the decisions are known;
- takes decisions in his own professional area and motivates these decisions.

7. Delegating

Definition: Clearly assigning tasks and responsibilities to the proper staff members and controlling their implementation.

Level D **Autonomy and given responsibility**
- assigns very complex activities to sufficiently qualified staff members;

- gives staff members the responsibility to act autonomously in complex and unpredictable situations;
- gives staff members the confidence to give form to given responsibilities;
- periodically checks on the main lines of activities that have to be executed regarding effectiveness and the correct application of rules and procedures and initiates, where necessary, corrections.

Level C **Challenging and checking**
- searches for suitable assignments for qualified, ambitious staff members;
- gives staff members the authority to act autonomously within a predetermined framework;
- closely checks the activities that are being executed regarding effectiveness and the correct application of rules and procedures and corrects where necessary.

Level B **Distributing and stimulating co-operation**
- divides activities amongst staff members within his own organisation unit and answers questions if the activities are not clear;
- divides activities in such a way that it fits to the knowledge, level and interests of the staff members;
- stimulates co-operation for the execution of activities.

Level A **Distributing work**
- divides activities under punctual instructions that fit to the knowledge and level of others, and checks the final result from a quality point of view;
- assigns part of his own tasks to the proper staff members;
- takes responsibility for divided activities.

8. Acting customer-oriented

Definition: Recognising desires, needs and interests of both internal and external customers and acting in line with that. Imagining oneself in customer situations, thinking in customer solutions, and transferring these into activities in the organisation.

Level D **Anticipating new customer desires**
- translates complex voiced and non-voiced wishes of different customers into new concepts, services and products to be developed, and consults the customers about this;
- improves the internal tuning and co-ordination crossing department borders in order to serve the customer better;
- uses existing and new possibilities to serve the customer optimally;
- anticipates on possible future customer wishes and makes customers conscious of this.

Level C **Monitoring and offering alternatives**
- imagines himself in the overall situation of the customer;
- recognises (non) voiced wishes and complaints and develops solutions;
- monitors customer satisfaction and improves the quality of the service to specific clients within his own professional area;
- continues asking questions regarding customer wishes; invents and offers alternatives to wishes.

Level B **Developing customer relations**
- focuses on improvement, develops a relation with the customer and takes actions to improve customer satisfaction;
- spots complex questions and knows how to refer to others;
- renders service, is pro-active, flexibly takes into account customer wishes and checks customer satisfaction;

- spots and recognises voiced customer wishes from the direct environment and translates these into activities within the organisation.

Level A **Service-minded**
- shows a service-minded attitude and flexibility towards the customers, listens to their wishes and desires their satisfaction;
- makes clear appointments, gives information, and ensures good progress of service to the customers
- formulates the customer's question clearly and unambiguously;
- is easily approachable/available for the customer, is open to customer questions and reacts fast; takes care of complaints in the proper way.

9. Taking initiatives

Definition: Seeing chances and acting on that; working on own initiatives.

Level D **Creating chances and strengthening position**
- strengthens the position of his own organisation by taking initiatives in complex and sensitive situations;
- seeks for limits with possible personal consequences;
- takes care of atmosphere/working conditions where initiatives can be taken;
- sees and creates chances in complex situations and makes use of them.

Level C **Meeting risks, initiating**
- contributes without being asked; seeks for limits;
- has an active initiating role in groups/joint ventures;
- devotes himself to organisation-wide interests by taking initiatives; uses chances.

Level B **Spotting, proposing**
- acts on a basis of good insight on things that have and things that have not to be dealt with;
- spots activities that fall outside the work area and mentioned them;
- proposes, within the given borders, to transfer chances into actions and solutions; takes action and does not wait.

Level A **Improving**
- brings up matters on own initiative
- sees activities that fall within the work area and takes action as a matter of course;
- is open to improvement and renewal; suggests improvement in his own work process.

10. Networking

Definition: Developing and consolidating relations, alliances and coalitions inside and outside his own organisation, using these in order to gain information, support and co-operation.

Level D **Coalitions, building influential networks**
- builds and effectively maintains various networks with influential people that are important for the organisation;
- recognises and discusses possible new (external) joint ventures and sees chances for the organisation;
- makes coalitions and manoeuvres between organisations, brings others together.

Level C **Representing externally, committing**
- represents the organisation externally and is interlocutor at all levels; succeeds in gaining attention and knows how to persuade people to commit;
- actively maintains and functions well in an important relation network where the targets of the organisation have a central position;
- actively searches for co-operation with other parts of the organisation;
- promotes co-operation and mixes with others without effort.

Level B **Establishing external relations**
- makes and maintains external relations with people who are important for the work in hand; is interlocutor on behalf of the organisation;
- informs himself on internal and external developments that are interesting for the work in hand and applies this knowledge;
- feels comfortable in a group and gets things done.

Level A **Maintaining relations**
- pays attentions to the relation with colleagues and relations outside the organisation;
- shows an interest in other people; listens actively and talks easily;
- pays attention, with interest, to different cases and opinions;
- uses networks to check his own work.

11. Showing sensitivity

Definition: Showing himself to be informed about social, scientific and political developments or other factors of environment, including insight in norms and values, interests and positions of others, and being able to handle these. Able to translate this knowledge and use it effectively for own actions and organisation.

Level D **Acting towards norms and switching actively**
- acts on the basis of sharp insight in cultures, social, political and official developments;
- assesses complex situations; understands which interests and people play a role; takes action at the right moment;
- handles different norms and values of different parties; can switch easily between these.

Level C **Adjusting behaviour**
- recognises the other person's situation; judges in which way respect and trust can be won;
- consciously handles other norms, values, codes of behaviour of parties inside and outside the organisation and other countries; adapts his own behaviour to that;
- takes into account the relations between parties outside the organisation and approaches the right person or party; spots trends.

Level B **Imagining, recognising, and modifying**
- imagines himself in the other party's situation; recognises the communication, the needs and interest of the other, and changes, if necessary, the way of influencing;
- is aware of own norms and values and knows how to moderate these;
- assesses interests and positions of others;
- takes into account mutual relations within the organisation.

Level A **Accepting and showing interest**
- shows tact, correctness and understanding for the other party;
- accepts norms and values of others and is aware of own norms and values; accept the other party as he is;
- approaches the right person at the right moment.

12. Focusing on results

Definition: Setting measurable targets. Achieving results and working systematically in that. Monitoring progress.

Level D **Setting strategic targets and monitoring**
- sets (measurable) strategic targets, gives main lines and monitors the execution by others;
- translates organisation/policy targets into concrete actions;
- oversees the consequences of own and other person's decisions, also in the long term and/or for third people;
- reminds himself and others on time and regularly about adhering to appointments and achieving targets; traces causes when appointments are not adhered to.

Level C **Target-oriented steering**
- sets, also for others, measurable targets and priorities and explicitly states results and behaviour;
- checks progress of activities, controls the budget and steers where necessary;
- gives others room and means to achieve the set targets, sets norms and deadlines for this, and reminds others about them;
- is tenacious and knows how to realise targets in spite of set-back or criticism.

Level B **Planning and checking**
- sets measurable targets and puts these down in a (work)plan; plans activities over time and adjusts plan where necessary;
- is tenacious in realising targets and takes care that the result is achieved; reminds others to adhere to appointments;
- checks activities on customer satisfaction and budgets; stops activities that do not contribute to the targets/results.

Level A **Setting targets and realising**
- sets measurable, achievable and clear targets in his own field of interest; plans own activities in and adheres to appointments;
- sets correct priorities and meets deadlines;
- work targeted toward a final result; cuts knots and finalises what has to be finalised.

13. Acting carefully

Definition: Acting focussed on preventing mistakes. Taking care that work is done in a regulated and accurate way. Accurate and correct processing of information. Checking on activities for shortcomings.

Level D **Conscientious decision-making**
- takes up a conscientious, organised and accurate position; remains careful even when under pressure with regard to the consequences of possible mistakes;

- considers deeply between strict compliance of rules, guidelines, or procedures and pragmatism, and decides on whether or not to derogate from these;
- sees to it that procedures and structures are developed and improved.

Level C **Improving procedures, addressing others**
- develops and improves procedures for the work of his own unit;
- makes a proper estimate of the effects of non compliance of rules, guidelines or procedures and reminds others about this;
- works with complicated situations and nevertheless keeps the essentials in view.

Level B **Checking and restoring**
- checks own work on rules, guidelines, and procedures; does not miss situations;
- is quality-minded, accurate, thorough and orderly, also under pressure;
- recognises shortcomings and corrects mistakes.

Level A **Documenting, checking**
- checks own work for shortcomings and lets, if necessary, others check it;
- takes into account rules and agreements and meets these;
- works according to procedures and rules and watches the details;
- files information and documents in a neat manner; delivers correct and complete information; checks data for consistency.

14. Analysing

Definition: Spotting problems and questions; recognising important information and structures; connecting data, tracing possible causes of problems; searching for relevant data and backgrounds.

Level D **Creative thinking**
- looks at complex matters from different angles including consequences in the long term and knows the conflicts of interest;
- also thinks, beyond the ordinary problems and solutions, across the borders of his own professional area/policy field;
- understands problems and solutions that will play a part in the long term;
- has a feeling for critical information and activities and looks for possibilities for his own organisation.

Level C **Investigating alternatives, explaining and integrating**
- looks, from a multitude of often non complex information, at complex matters from different angles; explains developments and initiates actions based on trends;
- can also take into consideration others' opinions and integrate them in his own analysis;
- investigates alternatives to form a judgement and describes scenarios with relations between cause and consequence;
- oversees long-term consequences of decisions; argues logically on the effect of actions, also for others.

Level B **Analysing broadly and critically**
- analyses problems from a quantity of information from different perspectives;
- splits up problems in parts and distinguishes essentials and details; works accurately, connects, understands structures and draws solid conclusions from available information;
- is critical, also of his own work; checks relevance of allegations, foundation of arguments;
- translates questions into project, survey and/or policy questions; makes proposals to that end, containing clearly described targets.

Level A **Distinguishing essentials and details**
- systematically selects data, uses multiple sources of information; structures and interprets data;
- distinguishes essentials and details in received available information;
- applies theoretical knowledge to a practical problem;
- argues logically and consistently.

15. Acting flexibly

Definition: Continued efficient action by adjusting his own style, ideas and working methods to changing circumstances, tasks, responsibilities and/or people. Improvising focused on the realisation of improvements and the achievement of targets.

Level D **Purposeful adjustment of style**
- changes own style in the case of chances or problems in order to reach the target that was set; depending on the situation, he varies his own style;
- in case of resistance, switches to an approach that achieves the set target;
- fluently switches between multiple areas of policy or science on different levels;
- takes other routes to achieve the target.

Level C **Improvising**
- improvises in the case of insufficient or indistinct information; knows how to adjust his own behaviour;
- improves his working methods by anticipating changing circumstances, changes method or approach if well-known method is ineffective;
- easily switches between own work and work of others;
- is open to ideas of others and builds on those; is always available to work on complex programmes and projects of multiple natures.

Level B **Adjusting and running blockades**
- is always available for cross-sectoral programmes and projects;
- breaks through fixed patterns;
- picks up new situations fast and adjusts his behaviour to the changed circumstances.

Level A **Being open**
- is open to changes and improvements proposed by others;
- accepts that activities are determined by others and by circumstances and acts accordingly;
- switches easily between different activities.

16. Handling stress

Definition: Calm, objective and effective functioning under pressure, during complications, set-back, disappointment, or resistance.

Level D **Taking away resistance**
- sticks to his own point of view under strong pressure and in complex situations; adjusts his approach in the case of problems or resistance;
- removes resistance by altering objections and recognises reactions and motives of others and teaches them how to deal with that;
- obtains lasting achievement under pressure;
- protects others from stress due to pressure and takes care that the activities are not harmed by this.

Level C **Prioritising and being open to discussion**
- ensures that in case of pressure the team or organisation unit continues to work effectively by determining which activities have priority;
- sticks to his own point of view under pressure;
- listens to criticism of others, acknowledges reasonable points and uses them;
- recognises stress factors and opens them to discussion by analysing the process with others.

Level B **Acting soothingly and effectively**
- in the case of pressure prioritises in his own activities and remains effective;
- calms others down by his actions;
- accepts objections as inevitable, sees their relative nature and does not let himself be carried away by emotional differences of opinion; tries to image himself into the other person's place and therefore understand his motives.

Level A **Calm, recognising own limits**
- stays calm and friendly in an emotional situation; does not isolate himself;
- recognises his own limits of knowledge and skills and does not try to surpass them.

17. Vision

Definition: Taking distance from daily practice; concentrating on essentials and long-term policy. Understanding social, political and/or scientific developments and other factors in the environment; combining these elements with own insight into an expressive vision and propagating this inside the organisation.

Level D **Estimating and translating**
- understands the position of his own organisation on the macro level and translates that into strategic future determining choices;
- assesses the relevance of developments in the (overall) political, social and scientific environment and the implications for his own organisation;
- propagates, in an expressive way, a voiced vision on the course of his own organisation and the implications of that course.

Level C **Contributing, proposing**
- develops and contributes to an original scenario for the whole organisation;
- translates general policy of his own organisation adequately into policy for his own working unit and defines strategic proposals for his own working unit;
- understands long-term consequences of (inter)national, political and/or social developments for his own working area.

Level B **Spotting**
- spots new social, political and/or scientific developments within his own working area and develops an own original vision on the future strategy for his own working area;
- understands the middle-term consequences of (inter)national political and/or social developments for his own working area;
- applies the strategy and proceedings of his own organisation in his own work.

Level A **Understanding**
- understands the short term consequences of (inter)national, political and/or social developments for his own working area;
- integrates in his own work the (external) developments that are relevant for the working area.

18. Solving problems

Definition: Spotting problems and solving these independently or in co-operation with others.

Level D **Scenario thinking, supporting others**
- acts as a mediator in complex situations;
- thinks in scenarios; mentions bottle-necks but also several alternatives and outlines consequences of possible solutions;
- supports others in solving problems, without having knowledge of the content of the problem; provides anchors and handles;
- structures, reflects, continues to ask, and thus helps the other person to discover solutions or alternatives.

Level C **Anticipating, analysing**
- anticipates on possible bottle-necks; reacts fast and effectively where there are problems and unexpected events;
- analyses problems, traces the real question behind the problem without possessing knowledge of the content or having full information;
- formulates multiple suitable alternatives or solutions;
- solves longer-lasting problems where others fail.

Level B **Solving and foreseeing problems**
- solves problems independently and searches for causes to prevent repetition of the problem;
- involves others in formulating and solving problems and penetrates to the core of the problem;
- foresees problems and anticipates;
- formulates multiple alternatives or solutions within a fixed framework.

Level A **Spotting, solving within frames**
- spots bottle-necks timely in his own working area and solves these within the fixed framework;
- works according to plan and collects correct and relevant information;
- clearly formulates a problem and takes this apart into sub problems.

19. Planning and organising

Definition: Setting priorities and indicating necessary actions, time, and means to achieve specific targets. Implementing actions.

Level D **Steering and supporting**
- co-ordinates many tasks of different content and of long duration, or with consequences in the long term;
- has an overview of and arranges planning of others according to their importance; maintains the overview to achieve the targets; supports others in planning their work;
- is at any moment and at any level capable to maintain the overview of projects and if necessary to correct their course.

Level C **Prioritising and co-ordinating**
- co-ordinates more than one project at the same time; co-ordinates different activities carried out by different people;
- sets targets and priorities for himself and others;
- connects activities within the organisation and tunes the planning of his own activities to this.

Level B **Tuning, keeping overview**
- tunes activities carried out by different people;
- maintains overview over his own activities and those of others, and follows the progress;
- structures his own and other people's work.

Level A **Planning own work**
- plans his own activities and tunes the planning with others; works according to this planning;
- set priorities, has overview over own activities and checks own progress;
- works in an orderly and systematical manner according to logical steps and plans that have been drawn on beforehand.

ANNEX 2-7. SAMPLE FORMS TO ASSESS COMPETENCIES

How to fill in:

- **Encircle the most appropriate number**
- **Describe the characteristics of the person on this competence**

Communicating (level C)							
		Developed very weakly	**Developed weakly**	**Developed as average**	**Developed strongly**	**Developed very strongly**	**Judgement not possible**
1.	He/she takes into account the different needs in contacts at different levels	1 2	3 4	5 6	7 8	9 10	❒
2.	He/she recognises contradistinctions and interests and chooses the right approach	1 2	3 4	5 6	7 8	9 10	❒
3.	He/she effectively handles (non)verbal signs	1 2	3 4	5 6	7 8	9 10	❒
4.	He/she formulates complex questions clearly and unambiguously	1 2	3 4	5 6	7 8	9 10	❒
5.	He/she structures a story and sticks to this	1 2	3 4	5 6	7 8	9 10	❒
6.	He/she makes difficult subjects understandable to others and uses appealing language	1 2	3 4	5 6	7 8	9 10	❒
7.	He/she keeps coherent presentations	1 2	3 4	5 6	7 8	9 10	❒
8.	He/she assesses sensitivities, discusses sensitive items, and shows consideration to others	1 2	3 4	5 6	7 8	9 10	❒
9.	He/she goes on questioning in the case of uncertainty in understanding	1 2	3 4	5 6	7 8	9 10	❒
Characteristic							
What do you consider characteristic of him in this competency?							

Planning and organising (level C)													
		Developed very weakly		Developed weakly		Developed as average		Developed strongly		Developed very strongly		Judgement not possible
1.	He/she co-ordinates more than one project at the same time	1	2	3	4	5	6	7	8	9	10	❒
2.	He/she co-ordinates different activities carried out by different people	1	2	3	4	5	6	7	8	9	10	❒
3.	He/she sets targets and priorities for himself and others	1	2	3	4	5	6	7	8	9	10	❒
4.	He/she connects activities within the organisation and tunes the planning of his/her own activities to this	1	2	3	4	5	6	7	8	9	10	❒
Characteristic												
What do you consider characteristic of him in this competency?												

Networking (level C)													
		Developed very weakly		Developed weakly		Developed as average		Developed strongly		Developed very strongly		Judgement not possible
1.	He/she represents the organisation externally	1	2	3	4	5	6	7	8	9	10	❒
2.	He/she is interlocutor on all levels	1	2	3	4	5	6	7	8	9	10	❒
3.	He/she succeeds in drawing attention and knows how to persuade people to commit	1	2	3	4	5	6	7	8	9	10	❒
4.	He/she actively maintains and functions well in an important relation network where the targets of the organisation have a central position	1	2	3	4	5	6	7	8	9	10	❒
5.	He/she actively searches for co-operation with other parts of the organisation	1	2	3	4	5	6	7	8	9	10	❒
6.	He/she promotes co-operation	1	2	3	4	5	6	7	8	9	10	❒
Characteristic												
What do you consider characteristic of him in this competency?												

PART 3
DESIGNING AND IMPLEMENTING COMPLIANCE ASSURANCE PROGRAMMES

PART 3
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CHAPTER 3.1
PROFILING THE REGULATED COMMUNITY

The content of compliance assurance programmes will influence significantly the social value, effectiveness, and costs of government efforts to implement environmental policy and law. Programming of compliance assurance presupposes that decisions are taken on:

- Goals that are feasible and cost-effective;
- Means or tactics of compliance assurance that efficiently and fairly achieve these goals;
- Corrections needed to address arising performance problems;
- Adequate budget and resource allocation.

The development and implementation of these management decisions will be based on the identification of the regulated community, adequate prioritisation, precise rules of conduct and safety requirements, sampling needs, and feedback from practice. Furthermore, progress of compliance assurance against the programmes' targets will be reviewed regularly. Where there are significant changes in circumstances or in available resources, and at the end of its allotted time period, the programme will be reviewed and revised. An updated or new programme will be established with regard to the results of the review.

While Part 2 discussed some process-related aspects and strategic management in general, Part 3 reflects on **substantive aspects of programming**. Furthermore, this Part aims at enabling inspectorate managers to use more effectively and in a systematic manner the state-of-the-art tactics of compliance assurance.

3.1.1 Goals and use of identification and profiling

A first step in developing compliance assurance programmes is to identify which groups are regulated and understand as far as possible their particularities, including ability, motivation and willingness (exhibited or actual) to comply with environmental requirements. A well-elaborated profile of the regulated community is essential in preventing and combating non-compliance; it enables authorities to make the right choice of compliance assurance instruments, to prioritise inspections in a concrete jurisdiction and to focus communication and enforcement thus optimising the inspectorate's activities. The contact with the regulatees during identification and profiling is the first step in creating an atmosphere of deterrence: it makes them aware that they are known and may be inspected.

The regulated community may include:

- Corporations;
- Small businesses;
- Public agencies/ government-owned facilities;
- Individuals;
- Non point sources.

The regulated community will have been described at least briefly in the legislation to be enforced. Laws are enacted due to awareness of a serious problem and some of its likely sources. Ideally, the exact nature of the regulated community will have been studied in the phase of legislative drafting to design enforceability into the law. Nevertheless, before enforcement is possible the inspectorate should gather data about the actual enterprises to which the law should apply, and analyse the compliance assurance challenges that the data suggest.

The scope of identification and profiling partly depends on the size and number of sources. If the regulated community consists of numerous small facilities, it may be impractical or impossible to perform a comprehensive survey. In such cases, programme officials may decide to identify a subset of the regulatees, *e.g.* only those companies within a specific geographical area that is highly polluted.

The analysis of data on a company-by-company basis is useful to determine patterns of non-compliance, and to group regulatees into those who:

1. Appear to be compliant (meeting requirements or likely to do so soon);
2. Are of uncertain compliance or marginally in violation, or small (insignificant) enterprises about which there is no compliance information and that may for a while be tolerated;
3. Appear to be in serious violation committing clearly prohibited acts, or are large or significant enterprises capable of causing the greatest harm.

Since group 3 obviously will be of the greatest initial interest, these may be studied in-depth through *e.g.* desk inspections to understand their processes, types of pollution, and vulnerability of receiving ecosystems or exposed populations.

3.1.2 Basic types of data to be gathered

Basic information that can be useful in designing a compliance assurance programme includes:

- Identifying information[23], *e.g.* name of the company and contact information;
- Geographic location, *e.g.* longitude and latitude, address;
- Type of installation[24] and process;
- Permit(s) registration number; core permit conditions, including expiry dates;
- Types and quantities of regulated materials at or emissions by the company;
- Risk associated with the releases (if it has been determined);
- Inspection dates and details;
- Non-compliance, enforcement actions, and complaints relating to the installation;
- Reporting performed by installations, for example, operator self-monitoring;
- If available - other data, *e.g.* audit reports and relevant data from other authorities.

[23] The development of a **unique business identification number** allows for the creation of a nation-wide business registration system, so as businesses only need to have a single identifier for all dealings with government. Putting such a system online makes electronic registration and searching for business ID numbers possible. This may be known as a "single enterprise register".

[24] "**Installation**" means a stationary technical unit where one or more activities are carried out that could generate pollution. "**Facility**" means one or more installations on the same site that are owned or operated by the same natural or legal person. This distinction will have to be taken into account by inspectorates when identifying the regulated community.

Information on the number, size, and character of the regulated community is critical in understanding the degree of effort that is required to implement a specific requirement. It can be used to compare the absolute and relative impact of a certain type of facility, and their capacity and willingness to comply. Once gathered, this information will need to be kept up-to-date as facilities shut down, move, change ownership or type of operation, etc.

Data on facility location will enable the inspectors to appreciate the potential impact of the facility on the exposed population and ecosystems. Geographic descriptors will be useful when selecting the sites for visits, and for targeting outreach and educational efforts in the areas with a high concentration of facilities and emission sources.

Keeping compliance histories for concrete facilities has several practical applications. The most obvious one is to focus compliance assurance efforts on "bad performers", as already mentioned. Accurate records on compliance history and enforcement-response or formal action can also help ensure a proper escalation of actions if the violations are not corrected in a timely manner. Knowing what informal and formal actions historically have been taken at a facility helps anticipate what level of action may be appropriate to respond to subsequent violations.

The type of information required at different levels – national and sub-national – will vary to some extent. The sub-national units of inspectorates will need most detailed data. Higher in hierarchy, summarised information will present more interest, as a basis for oversight and evaluation of the lower-level inspectorates. Headquarters will rely heavily on summarised information, but this would not exclude the need for facility-specific information.

Table 3-1. Facility-related compliance and enforcement information found in the systems of United States' Environment Protection Agency

Key data types	Constituent elements
Facility descriptors	Facility name; Physical location (street, city, county, state, zip code); Mailing address (street, city, county, state, zip code); Latitude and longitude of physical address (including method, scale, and code of accuracy); Watershed (hydrologic unit code); Permit registration number or other identifying number; Standard Industrial Category; Name, phone number of plant operator; Name and address of owner; Type of facility (varies by programme, *e.g.* major/minor, direct/indirect discharger, private/public water supply, etc.); Status code (active/inactive); Unique facility-specific information (*e.g.* seasonal facility).
Compliance monitoring data	Types of inspection conducted (*e.g.* sampling, records review); Date of inspection; Competent authority (State, federal or joint inspection); Date inspection report is submitted; Result of the inspection (violation found); Date self-monitoring report received; Parametric data from self-monitoring; Violations detected based on self-monitoring.

Key data types	Constituent elements
Types of enforcement and other data	Enforcement action proposed (*e.g.* proposed administrative order); Enforcement action issued (*e.g.* warning letter, judicial referral, etc.); Date of enforcement action; Responsible organisation (Federal, State); Proposed penalty amount (US dollars); Final penalty amount (US dollars); Date administrative hearing requested; Date appeal filed; Date action concluded.
Results of actions	Schedule requirements and milestone dates (*e.g.* when phases of construction are to be completed, when status reports are required); Supplemental environmental projects (type and monetary value); Type of injunctive relief required and value (US dollars); Amount of pollution prevented through the action; Compliance promotion activities; Impacts (*e.g.* reduced worker/population exposure).

Source: Adapted from Galloway, C. (Proceedings of the Fourth International Conference on Environmental Compliance and Enforcement, 1994, www.inece.org

3.1.3 Approaches to identifying and profiling the regulated community

There are several ways to gather information about the regulated community:

- **Inventories**: The inspectorate can compile an inventory of the regulatees either by asking them to complete informational forms, or by sending inspectors to individual companies to gather information. There are disadvantages of inventories: (i) they place a resource burden on the inspectorate and/or the regulatees by requiring personnel time and operating budgets, and (ii) they become outdated after a certain period while keeping the information current is difficult. Since the need for information must be balanced with the cost of obtaining it, the inspectorates will have to decide how often to survey the regulated groups.
- **Licence (permit) applications**: Initial information can be obtained in conjunction with the licensing (permitting) process. In EECCA countries, application forms, ELV protocols and ecological passports contain information, which quite often remains unused by the inspectorates.
- **Registration**: In a registration process, company managers are required to contact the environmental authorities to register particular information about their company or product. The disadvantage of this process is that it may be more difficult to ensure that all appropriate companies have registered. The degree of success in registering companies may depend, in part, on the consequences of not registering. Companies will be more likely to register if there is a benefit for doing so, *e.g.* they get on a list for potential funding or contracts. Laws can help ensure the quality of data by making it illegal to falsify data submitted.

- Information request letters: Such letters are targeted at a specific company (or companies) about which the inspectorate has particular questions that need to be clarified to determine whether the company is subject to certain legal requirements. This tool allows the inspectorate to complete efficiently the identification of the regulated community, and reduces the waste of resources on inspection of companies that are not covered by the legal requirement.
- Existing records: If the companies have been regulated under a previous or existing complementary programme, records about their characteristics and compliance status may be available in files.
- Periodic reports from companies: Periodic self-monitoring reports may be required from facilities to receive identification data and information on actual emissions. These reports are submitted on a periodic basis (annually to monthly).
- Overflights: Aircraft or helicopter overflights[25] and/or resultant photographs may be used to make an inventory of facilities subject to environmental requirements. Overflights are also useful to define the relative locations of wastewater discharges, air emissions, hazardous waste management companies, water supply intakes, populated areas, etc. in specific geographic areas.
- Other sources: Other government agencies or ministries (customs, fiscal inspectorate, police, labour inspectorate, transport inspectorate, etc.), as well as industry sources and Chambers of Commerce, may have information about the regulated community. Other helpful sources can be lists or surveys compiled by trade associations, citizens complaints, etc.

3.1.4 Quality requirements and data management

Quality of data will need to be assured in the framework of identification and profiling; it will be the integral result of the following key characteristics:

1. **Timeliness**: only up-to-date information will be a valuable basis for compliance assurance;
2. **Completeness and accuracy**: the highest possible and efficiently achievable coverage of facilities;
3. **Comparability**: to allow an objective comparison, data need to be reported and stored in a standardised format; for instance, a harmonised source nomenclature needs to be used to identify industrial sectors;
4. **Consistency**: data consistency requires unambiguous and uniform definitions, precise field descriptors and data input formats, as well as harmonised methodologies (*e.g.* for estimated emissions);
5. **Transparency**: for the interpretation of data, it is important to know how the data collection was performed, how numeric parameters were estimated or measured, etc.

[25] The Toolkit does not suggest procuring means for overflights. It will be sufficient if inspectorates make co-operative arrangements with other agencies that have access to such means, *e.g.* Ministry of Defence.

6. Integrity: data must be protected from being falsified by the regulated community responsible for record-keeping and reporting, and then from unauthorised alteration by those who may access the information registers.
7. Confidentiality: the identity of audiences to whom data may be disclosed and the timing of this disclosure must be prescribed by law, including the importance of preserving the proprietary nature of valuable business and commercial information. The integrity of enforcement investigations not yet publicly disclosed and the reputations of persons never charged with an offence should not be jeopardised.

In terms of data management, a register (if possible, computerised) has to be developed to store, access, and analyse the information as needed. Information in the register (or part of it) can be made available to all personnel who may need it, to governmental partners and to the general public. Computerised systems will require standard formats, security procedures and respective infrastructure. Also maintenance aspects (*e.g.* devotion of staff for database management and trouble-shooting) will have to be considered at the design stage. User-friendliness will be another important issue for consideration, since in some inspectorates staff do not possess deep knowledge of information technologies.

It will be essential to develop multi-media integrated information systems, with precise field identifiers (descriptors). Establishing medium-specific systems is not effective, since subsequently authorities will be forced to spend substantial resources to link information among systems for individual facilities. Field descriptors need precise definition and strict formats to avoid situations where several names of a given facility or different address present in different systems introduce confusion and slow down the process of enforcement.

Modern technologies can help optimise data input. For instance, optical character readers can scan documents and automatically upload the data into a database, although this technique requires the use of standardised forms and typed submittals. Another option is direct data transfer in electronic format from facilities to national databases. Electronic transfer may be achieved through the use of computer disks which are sent to the facility pre-formatted to receive specific information that is then mailed back to authorities.

3.1.5 Relevance of Pollutant Release and Transfer Registers for profiling of the regulatees

In the process of profiling the regulated community, inspectorates will need to take into account their role in gathering data for the national Pollutant Release and Transfer Registers (PRTR). A PRTR is a database of chemicals released to air, water and land, and wastes transferred off-site. Based on a list of priority chemicals, facilities that release one or more of the listed chemicals report periodically – usually annually – on the amount released and/or transferred, and to which environmental media. Reported data are then made available to the public. PRTRs are relevant for the profiling of the regulated community because they should provide facility-specific data.

On the occasion of the Fifth Ministerial Conference "Environment for Europe" in Kiev, Ukraine (May 2003), 36 countries and the European Community signed the new Protocol on Pollutant Release and Transfer Registers to the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)[26]. The Protocol requires (article 5) that releases and transfers are searchable according to:

(a) Facility and its geographical location;

(b) Activity;

[26] See the full text of this Protocol on the Internet at http://www.unece.org/env/pp/prtr.htm

(c) Owner or operator, and as appropriate, company;

(d) Pollutant or waste, as appropriate;

(e) Each of the environmental media into which the pollutant is released;

(f) Destination of the transfer and, where appropriate, the disposal or recovery operation for waste.

3.1.6 Particularities of gathering data about multinational companies

The **OECD Guidelines for Multinational Enterprises** constitute a helpful instrument in terms of data gathering and industry profiling. They provide a global framework for responsible business conduct. The Guidelines contain **specific requirements on information disclosure**. Thus, enterprises should ensure that timely, regular, reliable and relevant information is disclosed regarding their activities, structure, financial situation and performance. Enterprises are also encouraged to apply high quality standards for non-financial information, including environmental and social reporting. This information should be disclosed for the enterprise as a whole and, where appropriate, along business lines or geographic areas.

The governments of the countries adhering to the Guidelines – which are the source of most of the world's direct investment flows and home to most multinational enterprises – agree to promote their implementation by enterprises operating in or from their territory. The institutional set-up for promoting implementation of the Guidelines consists of three main elements:the **National Contact Points**; the OECD's **Committee on International Investment and Multinational Enterprises**; and the advisory committees of business and labour federations, and NGOs.

The National Contact Point (NCP) – often a government office – is responsible for encouraging observance of the Guidelines in a national context and for ensuring that the Guidelines are well known and understood by the national business community and by other interested parties. The NCP gathers information on national experiences with the Guidelines, handles enquiries, discusses matters related to the Guidelines and assists in solving problems that may arise in this connection. When issues arise concerning implementation of the Guidelines in relation to specific instances of business conduct, the NCP is expected to help resolve them. **Any person or organisation may approach a National Contact Point to enquire about a matter related to the Guidelines.** The list of NCPs and their contact information is available from the OECD web site www.oecd.org/dataoecd/17/44/1900962.pdf

3.1.7 General norms for avoiding excessive information requirements

Profiling of the regulated community should take into account the goal of administrative simplification, identified by many governments in the framework of their regulatory reform policies. Administrative simplification is defined as a set of policies and tools applied to facilitate government's management of information requirements. For instance, attention is paid to transactional aspects (transfer of information between the regulated community and the authorities) and tools and strategies to store and share information required according to regulations.

To prevent excessive information requirements being developed, a set of general norms can be established for individual regulators and the government to observe when requesting information from businesses and citizens, as done in the Netherlands[27]:

- **Re-use of information.** Government agencies should restrict information obligations as much as possible by re-using already available information, which enterprises register for their own management use and which they can transmit without further processing.–
  Information processing. Government agencies should be encouraged to create common data definitions. Different authorities requiring divergent presentations of the same data often leads to different interpretations and a tendency to non-compliance.
- **Information creation.** Government agencies should only request information creation if re-use and processing of existing information cannot provide the relevant information. They should avoid changing information during reporting periods, and give enterprises enough time to adapt their administration to new requirements. Information provision obligations of enterprises should be minimised by giving the authorities the right to collect information in existing databases.
- **Information storage.** Government authorities should set adequate storage times to avoid excessive costs and take into account the limited durability of digital carriers of data.
- **Information transfer.** Transferring information will be less burdensome if it can be done electronically to avoid substantial waste of time by writing by hand.
- **Information procedures.** Authorities should prescribe only the results to be achieved in terms of information collection and not the exact way in which the data should be gathered.

[27] Source: OECD (2003). From Red Tape to Smart Tape: Administrative Simplification in OECD Countries.

CHAPTER 3.2
PREVENTATIVE COMPLIANCE ASSURANCE THROUGH COMMUNICATION

3.2.1 Need for and key elements of preventative compliance assurance

Worldwide, people show an increased critical attitude towards and declining confidence in public institutions. To accept voluntarily the necessity of complying with government regulations, both industries and the general public need to be well informed to understand the reasons behind regulatory requirements. Furthermore, their capacity to meet these requirements has to be enhanced.

Through the use of preventative instruments, authorities can persuade companies to become compliant. Persuasion will be effective where companies see opportunities of gaining competitive advantage as a result of good environmental performance, *e.g.* if environmentally aware consumers make their choice based on the latter criteria. Wide social disapproval of non-compliant behaviour will be another important factor in preventative compliance assurance.

This section introduces the instruments that are in full command of inspectorates and do not require high-level political decisions or a new legal basis for being applied. These are:

- Making the regulatees aware of environmental requirements;
- Providing regulatory or technical assistance;
- Using communication tools to achieve greater deterrence;
- Generating support from the general public.

Instruments such as voluntary agreements and rewards for going "beyond compliance", corporate environmental reporting, etc. are described in other documents of the OECD/EAP Task Force Secretariat. The person-to-person communication between the inspector and the company is discussed in Part 4.

Inspectorates will need to make systematic use of preventative instruments, especially when command-and-control approaches may be unrealistic because of high costs to reach numerous small enterprises, which can be reached more effectively by informational and educational materials. Even as to the larger and relatively few sources that can be made the object of formal inspection and enforcement action, an inspectorate with an exclusively punitive approach may do more such "hard" enforcement than necessary and generate resentment when there are easier routes to compliance. On the other hand, hard enforcement will need to be made more effective through communication, by influencing the perception of the enforcement actions.

Communication is also important to making the enforcement authorities known and creating their positive "image". To meet this goal, governments have started to introduce standards of service delivery to ensure that civil servants fulfil the communication function in an appropriate manner (see Box 3-1). This shows an increased acceptance of the importance of communicating and recognition that the way of communication is as important as the content.

Box 3-1. United Kingdom: Applying service standards to central government

Six service standards for central government departments and agencies came into effect in April 1997, with a revision in 2000. For each of the service standards, departments and agencies are required to set their own targets and publish the performance in meeting them:

- Answer correspondence from the public quickly and clearly (including letters, faxes, and e-mails);
- See people within 10 minutes of any appointment;
- Answer telephone calls quickly and helpfully;
- Provide clear information about services and those of related providers;
- Have a complaints procedure, or procedures, for the service and publicise it, including on the Internet.

Source: Citizens as Partners (OECD, 2001).

Difficulties exist in organising effective communication that may be common to many environmental inspectorates and other government agencies:

- Environmental inspectors are not communication experts, and sometimes do not even have basic knowledge of communication tools and techniques;
- Too many environmental inspectorates begin a communication process without first analysing whom they want to reach and what they want to achieve;
- Inspectors are not working closely with the communication department in their organisation (where such a department exists at all);
- There is little assessment of the effectiveness of the communication process.

The current chapter aims at providing support to overcome these difficulties.

3.2.2 Organising the communication process

The key is to organise the communication process – to make sure that you are sending out the message you want, to the audience you want, and that they are responding in the right way. Inspectorates need to avoid producing information in an ad-hoc and unstructured way. Even if the inspectorate's communication strategy is simply to respond to enquiries and complaints, they will need to make sure that responses are well thought through, co-ordinated with other messages the environmental policy is giving out, and that they address the audience's viewpoint.

Inspectorates will need to define precisely how best to approach communication based on existing experience and common principles of organising effective communication. A communication strategy will respond at least to the following questions:

- What is the message?
- Who is the audience?
- What the inspectorate needs to do to get the message across?
- How the inspectorate is going to get and keep the audience's attention?

Box 3-2. Approaching environmental communication

Think strategically. Good ideas appear, and are often acted upon without consideration of the role they have to play in the overall communication process or how their effectiveness will be measured. Develop a broad strategy that helps you work with different media, messages and audiences in a coherent manner.

Integrate communication into compliance assurance programmes. Analyse the goals of your compliance assurance strategy, and see how communication can support their implementation.

Assess where you are and where you want to be. Before engaging a communication process, stand back and look at how the organisation is communicating. What are the positive and negative characteristics of this process? What have you achieved through it? Renounce what is not working, improve what remains and bring what is missing. Be receptive to feedback and use it to adjust your approach.

Tailor your message to the target audience. You need to evaluate and understand the stakeholders' interest. Ask yourself questions like: who are the priority stakeholders? Is the audience likely to be receptive? Even if you get the message across, does the stakeholder have the power to change his/her behaviour? Are there stakeholders who can spread and amplify your message? Customising the way in which information is presented to different audiences is the key; but remember that the message itself must remain consistent.

Make your approach transparent. Honesty and transparency are vital. Organisations that do not take a transparent approach will appear to have the most to hide.

Avoid information overload and "green-wash". Make sure that both content and presentation are considered. Recipients receive more information than they can process and filter what they hear/understand. Focusing on a few strong messages and increasing the visual element helps ensure your messages get through. Remember that typical "green" photographs of wild animals and natural landscapes, and romantic prose may provoke negative response in some recipients. One of these is that the producer is highly biased towards the positive in the messages conveyed. It is often best to avoid anything along these lines. Ask yourself: does the visualisation suggest a serious attitude to the essence of your work, or could it add to audience misconception?

Respond to information anxiety. Information anxiety is the gap between data and knowledge. It occurs when information does not tell us what we want to know when we want to know it. Do not make too many assumptions about how interested your audience is or their interpretation ability: analyse the demand.

Consider the financial aspects of communication. Ask yourself: what will bring the best value for money?

Use available experience and recognise the need for collaboration. Common messages and channels of communication are very likely to exist and if not, developing them in conjunction with others will probably be more cost effective than doing so alone.

Source: Based on Environmental communications: are you getting the message across? Institute of Environmental Management Journal (Volume 6, Issue 1, February 1999).

Communication is an on-going process – any communication strategy that focuses on the short-term is unlikely to yield many benefits and can be demoralising. Keeping the communication going, even at a less intensive level, produces the best results.

3.2.3 Forms of communication in the framework of compliance assurance

Communication, as an ongoing process, can take many forms. Its most elementary form – **visual communication** – is directly connected to the physical presence of inspectors. This presence is an enforcement signal that is sent through inspectors' uniform, technical facilities and transport means (cars, boats, overflights), as well as logos, labels, seals, and others.

Communication of actions spreads the impact of an inspection out over broader parts of the targeted community. The regulated community can be informed of the intentions of the inspectorate, *e.g.* new methods of enforcement, changing priorities, enforcement capacity. Furthermore, the inspectorate may disclose results of concrete inspections, names of offenders and the sanctions they received, plans for, and results of, inspection campaigns, etc.

Educating communication aims at achieving knowledge about, and a positive attitude towards, environmental regulations. By the use of awareness raising and education, many barriers of compliance can be overcome.

Topic communication brings specific environmental problems to the attention of the community, making it an issue of concern, putting the topic on the agenda, creating with the public and the regulated community the basis for support towards environmental policy and regulations. This includes publicity about the inspectorate, enforcement policy, priorities and methods, new technical equipment, etc. It supplies the enforcement with credibility and acceptance.

All these forms of communication are interrelated; if their relation is consistent they reinforce each other. If there is no cohesion, or worse, if they contradict each other, the effectiveness of the enforcement will suffer from it.

3.2.4 Analysis and selection of target groups

Concentrating efforts on a well-defined part of the regulated community, with specific needs and preferences – the target group, makes compliance assurance much more effective. Defining target groups gives direction and helps choose the most appropriate combination of action and communication. In the analysis of the target groups, the following elements are important:

- **Structure of the target group**
  - How many members?
  - What are their main relevant characteristics?
    - Individuals/organisations
    - Economic activity
    - Position in the network
    - Knowledge/level of education

- **Relation to environmental problem**
  - What do they know about the environmental issue at hand?
  - Do they care about the environmental problem?
  - Do they take measures to protect the environment?
  - Do they have a 'personal' interest in the problem?

- **Relation to environmental regulations**
  - What do they know about the relevant regulations?
  - How do they feel about the regulations?
  - What are the consequences of these regulations for the target group? Do they comply?

- **Relation to the enforcement policy**
  - What do they know about the enforcement policy?
  - How do they feel about the enforcement policy?
  - Are they influenced by the enforcement policy (do they have a direct interest)?

- **Media use**
  - Which media are used by the target group audience?
  - How reliable and credible are these media?
  - What is the outreach of these media?

- **Information need**
  - Which questions does your audience have?
  - Are these questions relevant in relation to the issue at hand?
  - What information does your audience need?

- **Intermediaries**
  - Are there institutes, organisations and/or individuals through which the audience can be reached?

3.2.5 Communication Strategy execution: Products and delivery mechanisms

Reaching the communication objectives within a target group requires a product (see Box 3-3). The range of potential informational products and delivery mechanisms is extensive. Several factors influence the choice of an appropriate format for information dissemination, including: size and characteristics of the target group (*e.g.* all inhabitants versus a certain neighbourhood), cost (*e.g.* leaflets versus videos), duration of use (*e.g.* short-term awareness raising versus long-term reference source).

Box 3-3. The range of potential informational products

Annual reports	Brochures, guides, handbooks, leaflets	Catalogues, indexes, registers	Education materials
Provide target groups with an overview of government activities	A basic tool for awareness raising and civic education	Allow target groups to identify and locate information produced by authorities	Allow target groups to acquire more in-depth understanding of issues

Source: Citizens as partners (OECD, 2001).

In terms of delivery mechanisms (Box 3-4), the authorities may use their own means to communicate or rely upon those of the media, advertising agencies, and civil society organisations. Since the communication experience of environmental inspectorates is not yet extensive, using external advisers with a better understanding of communication techniques may be appropriate.

Box 3-4. Direct and indirect mechanisms of information delivery

DIRECT DELIVERY MECHANISMS		INDIRECT DELIVERY MECHANISMS		
Information centres	**Events**	**Media**	**Advertising**	**NGOs**
Providing information desks in public offices, sector-specific information centres	Organisation of special events (*e.g.* exhibitions) and participation in trade fairs (*e.g.* information stands)	Use of press releases and press conferences to solicit media coverage of government initiatives and policies (TV, radio, print)	Purchase of advertising space (on TV, radio, newspapers, billboards, posters)	Use of intermediaries to reach specific groups

Source: Citizens as partners (OECD, 2001).

Choosing the product and the delivery mechanisms require the understanding of potential benefits that each of them could bring. Table 3-2 shows the level of impact of different communication products.

Table 3-2. Characteristics and level of communication reached by several communication products

Products	Levels of communication reached					Characteristics
	Attention[28]	Knowledge[29]	Attitude[30]	Intention[31]	Behaviour[32]	
Publicity						
Press release	X	X	X			Informative Controlled Up-to-date Variable outreach
Radio item	X		X			Limited information High outreach Short
TV item	X	X	X			High impact High outreach Short
Magazine	X	X	X	X		Targeted Informative Documentation function
Written communication						
Letter	X	X	X	X		Personal High attention value Informative Individual
Brochure		X	X	X		One-way communication Informative Controlled Documentation function
Leaflet/ poster	X		X			Attention value Short Limited information
Personal communication						
Training		X	X	X	X	Two-way communication High involvement Intensive information Targeted
Personal meeting	X		X	X		Individual High impact Maximum feedback Controlled
Group meeting	X	X	X			Interactive Targeted Formal
Lobbying				X	X	Informal Interactive Personal

Source: Communication strategies for enforcement programmes (USEPA, 1996)

[28] Making the problem at hand an issue of concern for the regulated community.

[29] Raising the knowledge about environmental problems, regulations, the compliance assurance system, etc.

[30] Converting the knowledge into a positive opinion towards compliance.

[31] Transforming a positive attitude into an intention to change behaviour, to comply.

[32] Facilitating the development of a positive intention to an actual change in behaviour.

The communication action can be shaped in relation to the objectives, target groups and enforcement action. Variations on the following dimensions are possible, which will be matched to a different degree by various communication products:

- **Message: What is the objective and content of your message?**
  - What does the target group know about environmental policy and regulations?
  - What does the target group know about environmental enforcement?
  - What is the attitude of your audience towards those issues?
  - Is the objective to influence attention, knowledge, attitude, intention and/or behaviour?
- **Media: Which media will you use?**
  - How does the target group normally get its information?
  - What is the best way to attract the attention of the target group?
  - Are there any specific media used by the target group?
  - Which kind of media best serve this project?
  - What different frequencies and deadlines best fit the planning?
  - What in-house experience in communication is available?
  - What are the financial and human resources available?
- **Timing: When do you get the most attention for your message?**
  - What timing maximises the news value?
  - Are there possibilities to communicate before, during and after the enforcement action?
  - Does communication before the enforcement action increase or decrease the impact?
  - Is it possible to prolong the effect of enforcement action by 'follow-up communication'?
- **Sender: Which sender would create news value?**
  - Which sender has authority for the target group?
  - Where is the most experienced and appropriate communicator?
  - Where are (human) resources available?
- **Tone of the message: What best fits the situation?**
  - What tone (formal/informal; businesslike/personal; consensus/confronting) will best be received by the target group?

In order to assure a good quality of communication, a number of hints can he helpful (see Box 3-5).

Box 3-5. Tips on how to communicate

Press/publicity

- Speak with one voice; assign one individual to coordinate and communicate
- Build and maintain good relations with the press
- Create news value, by planning unexpected and conspicuous actions
- Prepare your press presentation
- What does the press want to know?
- Which questions can you expect?
- Use correct back-up documentation
- Keep it simple
- Know the deadlines of your audience
- Pick your medium carefully
- Make your message attractive

Written media

- Attune content and style of writing to your audience
- Structure your text: extensive texts should include a contents/index, an abstract, and a readers guideline
- Formulate clearly and concisely: use simple words and short sentences (15 words on average)
- Balance text and illustrations
- Pay ample attention to a good lay-out
- Keep in mind the time needed for development and production of the material
- Ask yourself beforehand how to distribute your material: on request, as direct mail, as additional information to other reports, stocking material at hot locations, hand-out personally

Source: Communication strategies for enforcement programmes (USEPA, 1996)

3.2.6 Specifics of communication between inspectorates and the regulated community

As mentioned, preventative compliance assurance through communication with the regulated community consists of two major elements – raising awareness and changing behaviour - each of them with certain specifics.

Raising awareness

Nowadays the regulated community is facing an ever-expanding array of environmental requirements, spreading over many volumes of legal and scientific text, often hard to understand by the average person. Larger, more profitable enterprises can privately engage consultants to identify and make clear the environmental requirements that apply and must be implemented. But the mass of small enterprises individually can hardly afford this, and without assistance many will never fully understand their compliance responsibilities.

Raising awareness, *i.e.* providing information on environmental objectives, measures, techniques, and management, increases the company's knowledge of the issues. An inspectorate should provide materials to answer several basic questions: What are the requirements? Who must comply, when, and where? Why are the requirements needed, and what are the consequences of failure? How is compliance to be achieved, self-monitored, and assured?

Although it will not be possible to eliminate the complexity of environmental requirements, their essential elements can be highlighted and organised in a form comprehensible to and usable by the average person intending to comply. An inspectorate, whether engaging an outside consultant or using in-house staff, can search through many legal and technical volumes, extract just those requirements that apply to the sector, and present them in a user-friendly language in one small volume. Educational materials can also be created, adapted from other countries that have already produced such compliance assistance tools, or from the training materials developed for internal use by inspectorate.

In addition to papers and books, modern technology makes available other media for delivery, including Internet sites, CD-ROMs, and distance-learning transmission. Trade and professional associations, universities, and inspectorates themselves may provide face-to-face training. Inspectorates, perhaps in co-operation with enterprise associations regarding particular sectors, may provide telephone centres (called "hot lines") for members of the sector who seek information to comply.

Changing perception and behaviour

The effectiveness of enforcement depends on the "chance to get caught": the probability of getting discovered if violating the rules. The effect of this chance on compliance is based on two elements:

1. The **objective chance of "getting caught"** (the statistical probability to be discovered when violating the rules);
2. The **subjective perception of the chance to "get caught"** (the estimation by the regulated community of the probability to get caught when violating the rules).

If the government inspects 10 out of 100 companies, the objective chance to get inspected is 10 per cent. But if the government communicates about the enforcement action, it is likely that more than 10 companies feel they run the risk of being inspected. Because people act upon what they believe, think or feel, the regulated companies will be far more willing to comply if they feel there is a substantial chance of getting caught for violating the rules. This feeling alone can change their behaviour.

Influencing compliance through communication and perception

Increasing the subjective chance of getting caught

– Making actions more visible through publicity, letters to companies, etc.

– Announcing actions in the media

Increasing the subjective chance of getting sanctioned

– Publishing results of enforcem ent actions in the media

– Publishing issued sanctions

To influence future behaviour of the regulated community, it is not enough just to create a substantial objective chance of getting caught. It is crucial to make them **see and believe** that there is a good chance of getting caught if offending the rules. Communication can influence the perception of actual enforcement actions by making them visible. Thus not only the company that was struck by it, but also other companies will notice tough sanctioning. Depending upon the character of enforcement policy (more preventive or repressive), inspectorates can draw attention to the chance of getting caught or to the sanction. Figure 3-1 depicts how communication transforms the objective chance into an even higher subjective chance by influencing, like a magnifying glass, the value of the chance of getting caught or sanctioned.

Figure 3-1. From objective to subjective chance to get caught

Source: Communication strategies for enforcement programmes (USEPA, 1996)

An interesting example of this (Veenman, J.C.M., 1994[33]) is the experiment on Dutch roads to warn people in advance via radio and television that there will be a speed trap the next day between 9 a.m. and 9 p.m. on certain highways. Thus warned, the drivers appear to observe maximum speed limits much better in the specified stretches of road, and that after several repetitions they behave better structurally as well. Due to the announcement of intensive speed-control actions, the traffic police noticed important improvements. In around one month, the average speed went down by 7-8 % and the number and length of congestions were reduced by 30 and 40 % respectively.

A subjective chance of getting caught cannot be built on communication alone. Without living up to the promise made by communication, it can prove to be a boomerang that brings back corrupted credibility. Therefore communication and enforcement should create one consistent image. "No communication without actual compliance assurance" is a basic rule. Of course it is sometimes recommendable to operate more quietly, making enforcement unpredictable and surprising.

3.2.7 Specifics of communication between inspectorates and the general public

Effective communication towards the general public will generate public support that is a powerful tool for enforcement authorities for several reasons:

- The public can be an ally in promoting compliance through consumer or social pressure on companies;
- The public can be a partner that reports observed cases of non-compliance;
- Public support can help to ensure that environmental (enforcement) issues remain on political agendas and continue to receive the necessary funding.

The citizens' contacts with authorities take several forms: information, consultation and active participation. As part of their effort to earn and retain citizens' trust, authorities should ensure that:

- Information is complete, objective, reliable, relevant, and easy to find and understand;
- Consultations are conducted with clear goals and according to unambiguous rules that clearly state the limits of the exercise and government's obligation to account for the use made of citizens' input;

[33] http://www.inece.org/3rdvol1/pdf/veenman.pdf

- Participation provides sufficient time and flexibility to allow for the emergence of new ideas and proposals on the part of citizens and a mechanism for their integration into the decision-making process;
- Appropriate mechanisms are in place to prevent lobbying by particular interest groups or individuals.

Providing information

Information is an essential precondition for both consultation and active participation; it is a one-way relationship in which authorities produce and deliver data for use by citizens. This covers both "passive access" to information upon demand by citizens and "active" measures by government to disseminate information to citizens.

At a minimum, there should be public disclosure of official inspectorate's records (both for violators and non-violators alike), and of self-monitoring reports. Performance rating and disclosure programmes (Box 3-6) receive growing popularity worldwide due to their potential to reduce emissions at a lower cost because they do not require formal enforcement action. The potential for cost savings has a particular appeal for transition and developing countries' environmental agencies, which have very limited resources for monitoring and enforcement of pollution regulation.

Box 3-6. Public ratings of environmental performance: China's Green-Watch Programme

Program me design

China's State Environmental Protection Agency (SEPA) has become interested in public disclosure because China's pollution problem remains severe, despite long-lasting attempts to control it with traditional regulatory instruments. Chinese regulators have also been influenced by the rapid spread of pollution disclosure systems to other Asian countries after piloting programmes were initiated by Indonesia and the Philippines, in collaboration with the World Bank's Development Research Group (DECRG).

Since late 1998, SEPA and DECRG have worked to establish Green-Watch, a public disclosure programme for industrial polluters. Adapted from Indonesia's PROPER, the **Green-Watch rates industrial environmental performance from best to worst in five colours** – green, blue, yellow, red, and black. The ratings are disseminated to the public through the media. Two municipal-level pilot Green-Watch programmes have been implemented. Reaction to these programmes has been positive and SEPA currently plans to launch pilot programmes in other areas, in preparation for nation-wide implementation of public disclosure. The Green-Watch draws on **five principal sources of information**: self-monitoring reports, inspection reports, records of public complaints, regulatory actions and penalties, and surveys that record characteristics of the firms that are relevant for rating environmental performance.

The rating system incorporates **six dimensions of environmental pollution**: water, air, noise, solid waste, electromagnetic radiation, and radioactive contamination. It includes emissions information for 13 regulated air and water pollutants. Pollutant discharges are rated by total quantity and concentration. Solid wastes are rated in three dimensions: production, disposal, and recycling.

The rating process involves a detailed **account of a firm's behaviour in several dimensions**. Environmental management is graded with respect to: timely payment of pollution discharge fees, implementation of the National Pollutant Discharge Reporting and Registering Programme, the Standardized Waste Management Measures, and other administrative regulatory requirements. Internal environmental monitoring, staff training and internal document preparation are taken into account. In addition, the rating system considers the efficiency of resource use, its technological level, and the quality of its environmental management system.

The **rating scheme** is quite comprehensive. It allows voluntary entry and offers to participants an opportunity to discuss their rating with the authorities before it is disclosed. After being set, the ratings are sent to the programme's Steering Board for final checking and ratification prior to public disclosure. To ensure accurate press reports, journalists are invited to a detailed presentation on the programme, including an explanation of the rating system and demonstration of the software that is used for ratings development.

Lessons learned

Experiments with public pollution disclosure in China have suggested a number of important lessons:

- Support and involvement of several **key stakeholder groups** are critical: government at all levels, particularly of local administration leaders; and local media and the general public.
- **Legal and administrative basis** should be appropriate.
- **Timing** is also very important. Many enterprises will improve their performance prior to public disclosure if they are informed of their ratings and given sufficient time to improve performance. For public disclosure itself, intervals of one year between public ratings may be a reasonable balance between the loss of public pressure over longer intervals and the higher cost of developing new ratings over shorter intervals.
- Public disclosure clearly places unprecedented demands on environmental agencies' management **information systems**. Although there are substantial start-up costs, the agencies realise large long-run gains from much more flexible, current, and well-documented information systems.

Source: H. Wang et al. (INECE, 2002), http://www.inece.org/conf/proceedings2/25-Legal%20Control.pdf

An important question related to information disclosure is: where should confidentiality be taken into account? Confidentiality will be kept in the case of trade secrets, personnel files (but not of prohibited personnel practices committed by misconduct), and enforcement files while they are being actively investigated. Confidentiality is essential before an enforcement action has been publicly revealed and before an inspectorate openly presents its evidence as required by court rules.

Effective information management systems and facilities are needed throughout the public administration if citizens are to exercise their right of access to information. New information and communication technologies have a major role to play in this domain (*e.g.* websites). The choice of approaches and tools will depend upon the objectives, financial resources and human capacity of the unit concerned.

Seeking feedback from citizens

In addition to the right of access to most information, the public has an equally important right to be heard and have its views considered. Citizens can provide feedback by means of complaints and spontaneous submission (unsolicited) or when invited to do so by government (solicited). For investigative operations, the inspectorate has a very strong interest in providing communications channels (which may promise and assure anonymity, if necessary) for the public to provide complaints, tips, and leads to violations. The general public will be assisted in this way to provide information very often useful to the inspectorate to detect violations.

Engaging the general public: Citizen litigation, compliance monitoring and inspection

The engagement of citizens in environmental compliance assurance is a fairly new instrument although historically some mechanisms existed for public involvement in programmes to achieve compliance. Perhaps the most well-known mechanism in some OECD countries is direct citizen enforcement through lawsuits. However, there are many other opportunities for the general public to supplement governmental efforts, for example, public compliance monitoring or direct participation in inspection.

Citizen participation can be very effective when political leaders paralyse inspectorates from challenging powerful enterprises. Paralysis of an inspectorate may occur either when the legislative branch does not provide resources sufficient to address violators, or when executive-branch leadership (in the inspectorate itself) directly refuses enforcement. It is to prevent such intermittent paralysis of an inspectorate that civil society representatives may act as "watchdogs" for non-compliance. Exposure in the mass media of the inspectorate's failure to enforce can put pressure on it to improve performance.

In many countries law may provide for the citizens' right to take some enforcement action independently, i.e., to assume the function of taking a potential violator to court to enforce the law. Members of the public or NGOs can sue industrial facilities (including government-owned) directly for being in non-compliance with regulatory requirements or sue the government for failure to perform enforcement duties. For example, in the United States, all major environmental laws allow citizens to bring suits against any person to enforce the provisions of the law.

Because of litigation-related costs, citizens may have a limited ability to exercise their right of access to justice. Mechanisms exist to address this problem. In some countries, citizen suit provisions in environmental laws contain fee-shifting that allow citizens who win to recover the cost of litigation, including reasonable fees for attorneys and experts. Citizen enforcers are not responsible for the fees of the opposing side if the citizens do not win. There are also so-called "public advocacy centres" that provide free of charge litigation services to the general public.

Also citizens can contribute to compliance monitoring by tracking the performance of industrial facilities through independently compiled emission data or independently assessed compliance/state of environment information. Many inspectorates find that clearly communicating their information needs to citizen monitors provides for collection of information that is more useful in the identification of potential environmental violators.

Some countries allow citizens to participate in compliance inspections conducted by government officials. Usually, the citizen must have been involved in the complaint process prior to the inspection although cases exist where citizens can receive the status of a "public inspector" and the mandate to write protocols about certain types of violations. Inevitably there will be legal limitations to public inspections. In enforcement investigations, public citizens including NGOs as "volunteer inspectors" cannot force access to a site to gather evidence, as may an enforcement authority when it conducts an official inspection.

Pre-requisites of effective public participation

There are several fundamental regulatory and institutional elements that are essential for effective citizen participation. The pre-requisites include recognition of environmental rights and a citizen cause of action, clear environmental standards, access to information, standing, and an independent and well informed judiciary. Where even one of these elements is missing, citizens may find it difficult to participate in environmental compliance assurance.

CHAPTER 3.3
COMPLIANCE MONITORING AND THE USE OF DIFFERENT TYPES OF INSPECTION

3.3.1 Major sources of information on compliance status

Systematic checks of compliance, which imply collecting and analysing information on the compliance status of the regulated community, are essential to detect and correct violations, to provide evidence supporting enforcement actions, and evaluate progress in environmental policy and law implementation. Besides government checks (inspections), the status of compliance can be verified through ambient monitoring near a facility, results of operators' self-monitoring programmes or citizens' compliance monitoring (mostly complaints). The advantages and disadvantages of various sources of information are summarised in Table 3-3.

Table 3-3. Comparison between sources of information on compliance status

Information source	Advantages	Disadvantages
Ambient monitoring	Useful to detect violations without entering a facility. Give certain indication whether permit requirements are correctly set to meet environmental quality objectives.	The connection of pollution with a certain facility may be difficult to establish and prove. Generally, is resource-intensive.
Self-monitoring programmes	Provide much more extensive information on compliance. Shift the financial burden of monitoring to the regulated community.	Require integrity and capability of polluters to provide accurate data. Place a burden on the regulatees and increase paperwork.
Complaints	An additional way to detect violations.	Sporadic. Quality of data or reasons to report violations may be questionable.
Inspections	Potentially, provide the most relevant and reliable information.	Can be very resource-intensive; therefore, must be carefully targeted and planned.

Source: Based on Principles of environmental enforcement (USEPA, 1992).

Ambient monitoring data should be available to the inspectorate management, whether or not the inspectorate conducts independent monitoring of pollutant concentrations in various media. Ambient monitoring is incontestably a burden for developing and transition economies, but the dependence of efficiency of compliance assurance on the monitoring data should encourage the concerned parties to consider such investments not only in terms of cost but also benefits. Among other things, such data give inspectorates the possibility to identify the level of pollution of a specific receiving media with a minimum number of sampling points thus saving future time and effort. Software has been used successfully for tracking back pollution to specific sources, thus offering the opportunity to target on-site inspections. For policy-makers and legislators, monitoring is a tool for evaluating their policy and justifying adopted legal measures. Last but not least, monitoring and the reporting of its results serve as a communication tool towards the general public. This may create societal pressure on industry to improve environmental performance.

Although regulatory agencies have historically undertaken monitoring, it is now good practice to reduce the costs of monitoring by requiring operators to track and report data on their environmental performance. Self-monitoring does not remove the responsibility of the regulatory agencies to carry out

their own monitoring, although its frequency and duration may change, depending on proven reliability of self-monitoring (see also Chapter 3.5).

Inspections conducted by state authorities (or third parties sub-contracted by the government) remain the backbone of any compliance assurance programme. This chapter aims to present some of the principal methods that inspectorates can use to check environmental compliance directly.

3.3.2 Definition and typology of inspection

The sense conferred to the notion of "inspection" has changed over time. For the purposes of this toolkit, a definition of environmental inspection that is shared by several countries is used. Thus, according to the Recommendations of the European Parliament and of the Council of 4 April 2001 providing for minimum criteria for environmental inspections in the Member States, this term means "an activity, which entails, as appropriate:

1. Checking and promoting the compliance of controlled installations with relevant environmental requirements […];
2. Monitoring the impact of controlled installations on the environment to determine whether further inspection or enforcement action […] is required to secure compliance with […] legal requirements;
3. 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 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."

Although many **types of inspections** can be distinguished (see Box 1-2 for some examples), there is no generally accepted method to group them. While the need to address this theoretical problem is obvious, the toolkit is not meant to provide such a grouping. Its aim is limited to introducing various types of inspection and analysing their elements and comparative advantages, which has a more practical orientation.

Effectiveness of inspection is often achieved through a balanced use of desk research and site visits. **Desk research** is commonly used to focus, prepare, or elaborate site visits (Section 3.3.3).

Site visits (Section 3.3.4) involve visual or instrumental diagnosis of the compliance status. As described in Section 1.1.3, site visits can have many types due to various reasons to conduct them. One frequently sees combinations of these reasons. This causes difficulties in attributing an inspection to a specific type, or group. Site visits can be conducted routinely (according to an annual plan) or in response to complaints, incidents, accidents, etc. Sometimes, enforcement campaigns are conducted. These are planned inspections that concern more than one facility and they usually check compliance of a specific requirement across the entire regulated community.

Correctly choosing the scope of inspections – **multi-media and single-medium** – is important for compliance verification. The benefits of each of these two types of inspection should always be compared with any possible constraints they could imply, including those of financial character (see further details in Section 3.3.5).

Often, **administrative inspections** (Section 3.3.6) are identified as a particular type of inspection since they go beyond the traditional verification of physical and chemical impacts on the environment to check a company's administration in-depth. The mass-balance approach (Section 3.3.7), which compares inputs and outputs at a certain facility, can have a particular significance for administrative inspections.

3.3.3 Introduction to desk inspections based on profiling of "problem companies"

The guidance in this section will focus on desk research, proceeding from a specific case – desk research to profile the companies that are associated with the highest risks, especially (if not exclusively) of committing environmental offences deliberately and structurally (so called "problem companies"). This kind of research is quite sophisticated and inspectorates should not make recourse to it for preparing routine inspections or dealing with medium and low risk companies. However, its elements may be adapted to conduct a less comprehensive pre-inspection analysis.

Desk research will need extensive co-operation with other enforcement authorities to make use of existing information and benefit from expert judgement of colleagues, in particular with regard to financial performance of the company being investigated.

The method of profiling problem companies distinguishes three phases: (1) identification of the problem company; (2) creation of a project team; and (3) desk investigation per se. These will be followed by a site visit, and evaluation and follow-up, as shown in Figure 3-2.

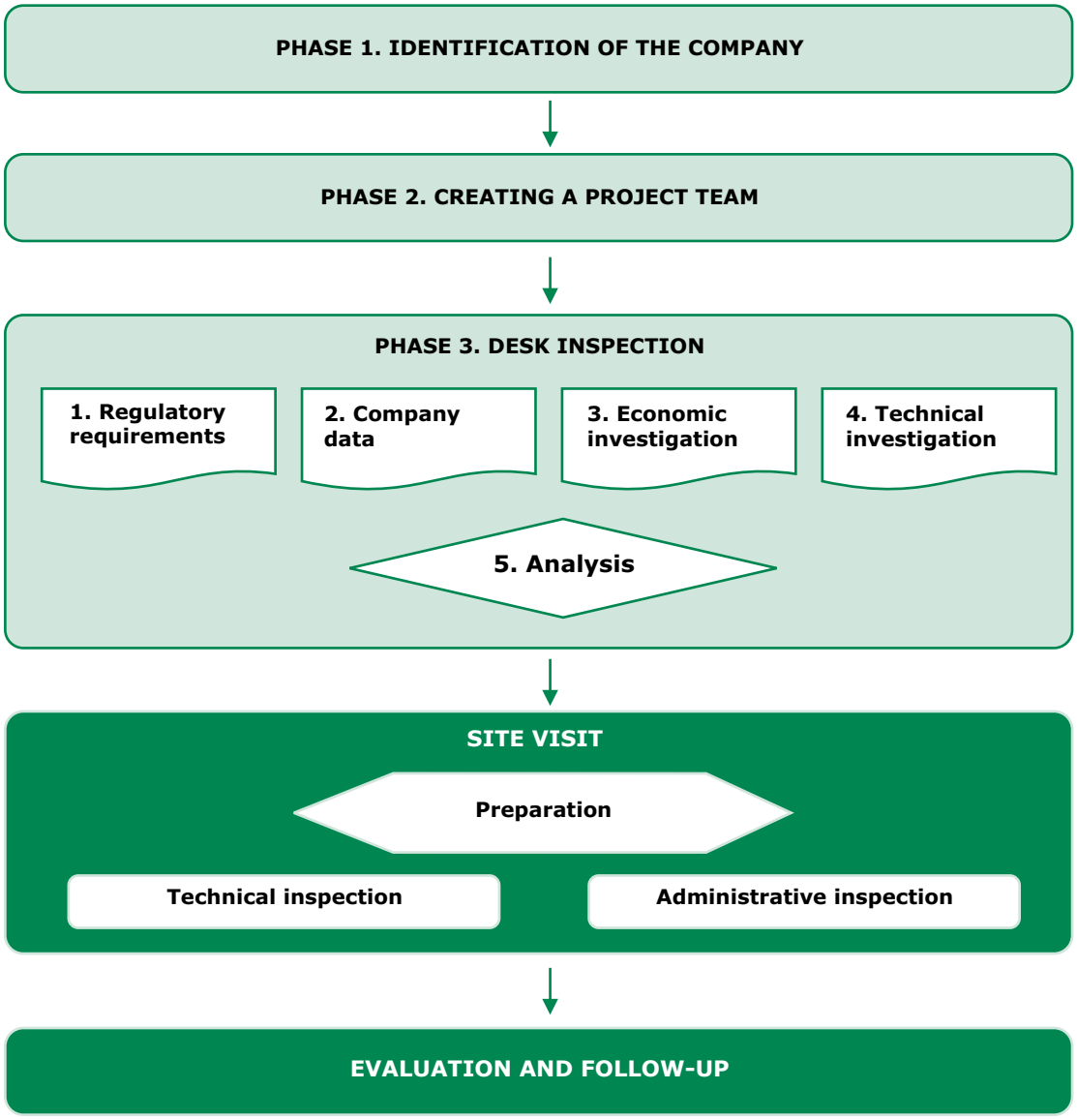
At the identification phase, the decision on whether to proceed or not with investigation will be taken, and limited data gathering will be conducted. The latter will include general information, such as company identifiers (fixed company data: name of the company, visiting address, mailing address, contact person, other company sites, etc.), overall company activities and processes, as well as information on competent authorities that exercise oversight functions.

The identification of responsible authorities helps to form the investigation team that may bring together representatives of environmental agency, municipal and regional authorities, water [basin] authorities, police, and others. The composition of the investigation team must be heterogeneous so as sufficient technical, legal and administrative knowledge and experience is available. Team members should receive adequate means and realistic time schedules to carry out their work.

Depending upon the sort of company, the relevant authorities will be determined as well as the leader of the team. The team leader will steer the team and lead the investigation from a substantive point of view. He/she will also be responsible for the project management (planning, division of tasks, co-ordination). To promote higher objectiveness, the project leader should not be the same person who does the regular inspections in the company.

After the identification of a "problem company" and creation of a team, the desk inspection has to be carried out. The desk inspection aims to gather information on all aspects of companies' activities in order to assess company's environmental performance. It comprises five steps: (1) investtigation of regulatory history and requirements; (2) gathering company-specific data; (3) company economic investigation; (4) technical investigation; and (5) comparative analysis of the data.

Figure 3-2. Main phases of desk inspection to profile a "problem company"



Checklists can guide the data gathering at each phase. The need to gather additional data may occur. Before requesting missing data from the investigated company, make sure that all readily available information was compiled to answer questions from the checklists. Investigators should remember to file the collected data with accuracy.

Investigating regulatory history and requirements

The purpose of this phase is to map the regulatory requirements, in particular: (a) the permits issued, (b) the applicable legal requirements, and (c) any other information on regulatory history. The applicable regulatory requirements and issued permits are listed over a certain period of time, thus the changes in legislation and the company's regulatory status become clear in a systematic and chronological order. Checklist 3-1 shows some elements of the assessment of permits and regulatory history.

Checklist 3-1. Investigation of current regulatory status

Sort of permit (licence)	Issuing date	Number		
			Authority	
			Contact person	
			Telephone number	
Is a permitting procedure in progress? If yes, for which activities and sort of procedure?				❒ No ❒ Yes
Is non-compliance being condoned?[34]				❒ No ❒ Yes ☐ Actively ☐ Passively
Is an appeal procedure or other legal procedure in progress against one or more of the valid permits (licences)? If yes, what is the nature of the (appeal) procedure?				❒ No ❒ Yes
Did the court of appeal give its verdict? If yes, what was changed in comparison to the permit (licence), which was the courts decision?				❒ No (this could mean that the licence is not yet valid) ❒ Yes

Source: DCMR, 2001.

Gathering company-specific information

Effort should be made to depict the situation at the investigated company. The scope of regulatory compliance and risks revealed during the investigation of regulatory history will give direction for carrying out company-specific data gathering. An important undertaking will be to obtain information on the average performance in the industry sector concerned, so as comparison can be made with a company-specific situation, for instance, the input and output figures. Checklist 3-2 suggests what kind of data may be needed and where to find them. The economic and technical assessments will be based on the information gathered at this stage of investigation.

[34] See more about non-compliance condoning in Chapter 3.7

Checklist 3-2. Needs and sources of company-specific and branch information

Nr.	Item	Information source
1.	Organisation chart of the company (including affiliated companies and partners)	Chamber of Commerce (ChC), permit (licence) application(s)
2.	Registration form(s) of Chamber of Commerce	ChC
3.	Overview of possible calamities and accidents	Police, municipality, regional authority, water authority, fire brigade
4.	Handbook of environmental care system	Responsible authority, company
5.	Internal management and environmental reports	Responsible authority, company
6.	Handbook with description of procedures	Responsible authority, company
7.	Land registry information	Licence application, land register
8.	Annual balance sheet	ChC
9.	Branch-related financial averages	ChC, branch organisation, financial institutions
10.	Profit and loss account	Company
11.	Compliance (enforcement) history	All authorities concerned
12.	Police record or criminal record	Police, public prosecutors office
13.	Construction licence	Municipality
14.	Prices used for receipt or delivery of goods	Company, advertisements, Internet
15.	Documentation concerning automation system	Responsible authority, company
16.	Overview of yearly production	Annual report, permits, administration
17.	Overview of used raw materials	Annual report, permits, administration
18.	Energy, gas and water consumption	Annual report, permits, administration
19.	Quantity, origin, and type of accepted wastes	National/regional waste registers
20.	Quantity and type of delivered waste	National/regional waste registers
21.	Substances and/or energy balance	Company, permits (licences)
22.	Overview of emission data	Annual report
23.	Data on waste generation	Licence (permit) application(s), company
24.	Overview of products and by-products	Company, advertisements, Internet, licence application, ChC
25.	Overview of obligations concerning mixing and separate storage of wastes and substances	Licence application, guidelines, policy rules
26.	Process diagram	Licence application, company
27.	Maximum storage capacity per waste/substance	Licence application
28.	Environmental management plan	Company
29.	Risk assessment of labour conditions	Company, Labour inspectorate

Source: DCMR, 2001.

Company economic investigation

The economic investigation will determine whether there is an increased risk of non-compliance. The most important question during this investigation is: Taking into account the industrial sector and the overall economic situation, what is to be expected in a company? By comparing the realities of a company with those ones in a sector, important facts on environmental non-compliance and its roots can be discovered. Checklist 3-3 can support such an investigation. To carry it out, inspectors with knowledge and skills in the field of company economics and accountancy will be needed. Alternatively, this work can be outsourced.

Co-operation with fiscal authorities helps understand the economic situation of a company better. On the other hand, environmental inspectors can indicate to fiscal inspectors the scale of production, based on input figures (raw materials, water, and energy consumption). This will contribute to uncovering both environmental violations and fiscal fraud.

Checklist 3-3. Company economical investigation

Nr.	Subject to be investigated
1.	Check the company performance in comparison with economic situation of the branch
2.	Check whether – taking into account the branch characteristics – the investigated company employs unusual forms of organisation and co-operation
3.	Check market position of the company (monopoly or high competition)
4.	Check annual financial results of the company in comparison with its competitors
5.	Check company's net assets in comparison with the loan capital (yearly account), and whether these are commensurate with required environmental investments
6.	Check conclusions on the profit and loss account of the company in comparison with what the company says about its own financial performance
7.	Check in the yearly balance sheet or in other documents on the company whether environmental investments and costs are distinct
8.	Check whether the information from the company's environmental report is in conformity with the information from the yearly balance sheet
9.	Check whether fines and other forms of levies or charges are being paid directly
10.	Compare the available production capacity with the size and the level of the company activities (is much work contracted out?)
11.	Check whether sufficient financial means were reserved for urgent environmental investments
12.	Check whether sufficient funds for operation and maintenance costs are available (*e.g.* costs for replacement of filters, emptying oil and fat catchers, discharge of [hazardous] waste)
13.	Check whether the average salary per employee is substantially different in comparison with other companies in the branch

Source: DCMR, 2001.

Technical investigation

This investigation aims at determining the company's ability to fulfil its obligations from a technical perspective. All risks that may appear at the interface of technology used and environment can be listed, *e.g.* maintenance of certain (vulnerable) installations or the handling of chemical substances. The focus of the technical investigation depends on the signals from the legislation investigation, the information investigation and the company economical investigation. It will show the potential areas of non-compliance. Applications for licences (permits) constitute important sources of data for the technical investigation.

Checklist 3-4. Technical investigation of a "problem company": Some key aspects

Nr.	Subject to be investigated
1.	Make a process diagram, and identify weak points in the process.
2.	Compare input and output data, make a mass/energy balance.
3.	Identify the sources of emissions and waste.
4.	Identify all core requirements (quantitative and qualitative) set in licences (permits).
5.	Compare the design production capacity and actual (declared) capacity of production, check if this corresponds to the information that may be advertised, provided to shareholders or customers.
6.	Check whether the permits (licences) prescribed regular surveys and monitoring.
7.	What is the capacity of the different installations?
8.	Compare the construction drawings and the environmental licence(s).
9.	Identify what is the efficiency of the installations, including the end-of-pipe devices, and compare this with available country average or other benchmark figures.
10.	Check if maintenance schedules are established. Does maintenance generate waste?
11.	Does the licence prescribe technical provisions? Are these followed?
12.	Indicate shortly on which spots hazardous substances are stored.
13.	Identify risks associated with the entire installation or its parts. Check the existence of an emergency plan.
14.	Did the licence indicate monitoring points in order to control emissions, prevent illicit handling of wastes or hazardous substances, and follow their streams?
15.	Identify parameters to be monitored as prescribed in the licences (permits).
16.	Is there an obligation to work according to a sampling procedure and/or methods of analysis? Which sampling procedure/methods of analysis for air/water/waste emissions have been required?
17.	Who takes the samples? Where are they analysed?
18.	Does the permit (or secondary legislation) prescribe the minimum level of expertise for staff involved in sampling and analysis?
19.	Have necessary certificates been obtained to conduct sampling and analysis?

Source: DCMR, 2001.

Analysis

After data gathering, issues will be analysed to define what precisely needs to be inspected during the on-site visit. The investigation team will need to compare their own results of analysis with data supplied by the company. The end-of-investigation brainstorming involving all team members can help clarify relations between different types of information and the way different sets of data match, *e.g.* technical possibilities with regulatory requirements, environmental performance and financial (including fiscal) information, etc. By listing these relations in a question/answer form, it becomes clear which fields of interest exist. For instance, the need to inspect how provisions for storage of hazardous waste in a building are observed can be identified during the legislation investigation. This need will become even more pertinent if the company-specific information shows a high frequency of transporting hazardous waste, which will indicate that the company may also store big volumes of waste.

3.3.4 Scheduled and reactive inspection

Scheduled visits (routine inspections) are primarily (visual) checks in order to verify compliance with the conditions of a permit (licence) and other legal requirements and include pre-planned inspections both during and out of the facility's operational hours. Scheduled inspections are used to gain an overall impression of the day-to-day operation of the site. In addition, the quality and applicability of the working plan to site operations can be ascertained. Where a breach of licence conditions or other legal requirements is observed, appropriate action should be taken in accordance with the guidelines from the enforcement strategy and policy. The scheduled visits aim, however, at checking compliance.

Specific monitoring inspections will focus on those conditions that are detailed in the environmental self-monitoring section of the permit or in the annual self-monitoring plan. Such field visits may identify problems that can be followed-up in the course of subsequent routine inspections.

Engineering inspections are conducted to check compliance with any of the engineering requirements of a permit (licence) both during and after construction or arising from engineering remedial works. Pre and post-operational inspections are used to confirm the site's status and to ensure that environmental harm is prevented at the stage of construction and decommissioning.

Reactive inspections involve handling complaints, dealing with incidents, referrals from prosecutors, assessments in trial licences, as well as giving advice. It will be useful to leave, e.g. 10% of time unallocated for reaction to public concern both in and out of hours, repeat visits to ensure compliance with particular issues, engineering, and audits. This allowance will enable the inspectorate to deal with incidents, act on reports of illegal activity, suspicion, and spot checks. In the event that any complaint is justified, enforcement action would be taken.

The percentage of time to allocate to this kind of inspection activity will depend on the compliance assurance strategy. The legal and social systems also play an important role: a system that very much relies on sound environmental management and self-monitoring will show a lower rate of reactive inspections than a system that strongly relies on direct regulation and a strategy of punishment. Furthermore the percentage may differ between an inspection system in the beginning of its operation and a developed inspection system that has been operating for years.

In order to avoid wasting staff's knowledge of companies, it is not advisable to separate institutionally the pool of inspectors responding to complaints from those involved in regular inspections; a rotating crew of inspectors may handle complaints. Also it is important that inspectorate planning is not overrun by complaints so that the inspectorate does not become a complaint-driven organisation.

Incident response inspections are characterised by a high urgency of reaction to abnormalities that have occurred at a site. Information about incidents may be received from any source, *e.g.* internal sources, emergency services, local authorities, or members of the public. As quickly as possible, the seriousness of the incident should be established and, when necessary, other authorities should be notified and involved. Following the investigation and inspection of the site, and the ultimate completion of the inspection report, the incident information should be entered in a database, for example, to support cross-referencing the incident response and the findings of preceding or follow-up inspections.

3.3.5 Specifics of integrated inspections[35] in comparison with single-medium inspections

Integrated inspection means that impacts on all environmental media are considered in their mutual relation, to obtain a holistic picture of a process and avoid cross-media transfer of pollution. This kind of inspection can be considered a continuation of integrated permitting; therefore, they will aim at checking, for instance, whether:

- Measures were taken to eliminate or reduce emissions into air, water, and land, and reduce formation of waste and energy consumption;
- Dangerous fuels, chemicals, raw materials, etc. were substituted by less environmentally harmful ones;
- Cross-media pollution were minimised or prevented by means of process control and maintenance.

Where integrated permitting is not part of environmental regulation, integrated inspections can be used nevertheless, including for providing advice to a facility that would bring its operation closer to the philosophy of cross-media integration. Low-cost measures of so-called good housekeeping should be a primary target in such cases.

A country may choose to implement integrated inspections for all companies or only for industries that pose the greatest risk and where such inspections achieve the greatest deterrence. This choice generally depends on the type of integrated inspection conducted, the objective to be achieved, and the design of the inspection programme. Common criteria used for targeting integrated inspections include the following: industrial sector or processes; geographical areas; and a particular pollutant or group of pollutants.

Advantages and disadvantages of integrated inspections

Both the media-specific and the integrated approach can yield benefits; therefore, a decision about the most appropriate type of inspection depends on overall goals of the compliance assurance programme, as well as site-specific circumstances. In considering the use of the integrated approach, an inspectorate may want to determine whether it can:

- Enhance the inspection and enforcement presence;
- Yield better environmental results (*e.g.* reductions in cross-media transfer, identification of pollution prevention opportunities) than with a media-specific inspection;
- Draw the plant manager's attention to environmental protection issues;
- Improve communication between companies with multi-media operations and the inspectorate(s) responsible for environmental oversight of such companies;
- Increase resource efficiency for the inspectorate.

Integrated inspections enhance the likelihood of identifying violations across the spectrum of environmental requirements. As a result of the time associated with an integrated inspection, and in some cases the size of the inspection team, the inspection raises the visibility of the inspectorate across industries controlled. When an integrated inspection of a company takes place over several days, or even weeks, word tends to spread across the regulated community. This enhanced visibility (*i.e.* the inspection and enforcement presence) can serve as an effective deterrent of non-compliance.

[35] This section is extensively based on *Multimedia Inspection Protocols: International Examples* (INECE, 1998).

Because integrated inspections require greater coordination with the company's staff, it may be necessary to pre-notify the company of an impending integrated inspection, whereas a media-specific inspection could proceed unannounced. Thus, the inspectorate's management needs to assess whether the element of surprise is necessary to assure the success of an enforcement programme.

Integrated inspections will potentially improve communication between companies and departments within an inspectorate or even different inspectorates responsible for environmental oversight of concrete areas. Typically, under single-medium programmes, where a facility has an issue to address, it must be able to identify and contact a particular inspector responsible for the relevant medium. In contrast, a team leader generally directs integrated inspections and may serve as an easily identifiable point of contact. The company can also be confident that the integrated inspection leader or specialised inspector will have a good understanding of the overall company or operation, based on his/her multimedia training and experience. These factors encourage communication, which builds understanding and promotes higher rates of compliance.

Integrated inspections can also promote the efficient use of resources within the inspectorate. By consolidating inspections, travel time and costs can be reduced, particularly where a single inspector can screen integrated compliance in a company, or fully assess compliance with requirements imposed under two or more environmental programmes. At larger companies, where an inspection team may be employed, resource savings can be realised by minimising duplicate aspects of the inspection process. In addition, such inspections may not need to be conducted too frequently due to a higher deterrent impact. However, they may impose additional resource demands that will counterbalance gains in efficiency, for instance the time and cost of cross-training inspectors, and the need to assign several inspectors (*i.e.*, a team) to a single integrated inspection. Table 3-4 summarises the benefits of media-specific and integrated inspections.

Table 3-4. Comparative benefits of single-media and integrated inspections

Considerations	Media-specific inspections	Integrated inspections
Compliance/ enforcement effectiveness	May achieve greater enforcement results than integrated inspections due to specialisation, experience, and training of inspectors. Inspection and enforcement presence may increase due to multiple media-specific inspections.	May achieve greater deterrence due to broad scope, time, and detailed level of inquiry. Inspection and enforcement presence results from achieving greater management attention. Effective in enforcing against companies with many small violations in several programmes.
Resource needs	Requires trained inspectors for each media programme; therefore, limited availability of trained inspectors impacts ability to monitor compliance. Retention of trained inspectors is very important.	Potentially more efficient due to reduced number of trips and consolidated transportation of inspectors; need fewer inspectors if they are cross-trained. Retention of inspectors important due to greater training investment.
Type of companies	Suitable for most companies. May not effectively address releases with cross-media impact.	Team inspections may be overwhelming for small and medium-sized companies. Consolidated inspections with one or two cross-trained inspectors may be more appropriate.
Time required	Media-specific inspections generally efficient, but their cumulative time burden may be significant.	Screening inspections can be very efficient for detecting potential violations and referring for follow-up medium-specific violations. Comprehensive inspections can take longer time.
Scope	Requires multiple inspections to achieve comprehensive coverage.	Comprehensive coverage of company, greater opportunity to address underlying environmental issues and to review the entire process for pollution prevention options.

Source: Based on Multimedia inspection protocols: International examples (INECE, 1998).

The advantages of integrated inspections depend greatly on their nature, scope, and the training of the inspectors. Credibility may be lost if, in the process of conducting an integrated inspection, inspectors fail to detect important violations either because they lack the time, resources, or expertise to cover the intended scope or follow proper inspection procedures. This risk may especially occur at companies that are highly complex.

Varieties of integrated inspections

Four basic integrated inspection types can be identified: multimedia screening, team inspections, consolidated inspections, and process and prevention inspection.

(1) Multimedia screening

Multimedia screening inspections are conducted as a brief addendum to single-media inspections and may precede more complex inspections, as necessary. They are designed to require a minimal expenditure of time. Inspectors can use a simplified checklist as a guide for recording observations and information pertaining to possible multimedia violation that may require follow-up action.

(2) Team inspections

A team of inspectors, each trained in a single programme area, is deployed at the company to conduct a comprehensive evaluation of the company's overall compliance. During the inspection, team members focus on their areas of programme expertise. However, the inspection may proceed so that some or all inspectors examine components of the company (*e.g.* a storage tank, a major process, a treatment unit) simultaneously. This allows each inspector to become aware of problems in other programme areas and to provide input, as needed, to assess such problems.

From an enforcement perspective, conducting a team inspection enables enforcement officials to consolidate inspection reports and take a single, unified action against the company, if necessary. Team inspectors also raise the inspection and enforcement presence. Another advantage is the fact that they do not require inspectors with additional, specialised training. Unfortunately, such savings may be negated by the need to mobilise several inspectors, which is not always possible.

(3) Consolidated inspections

Consolidated inspections imply the use of one or more inspectors, where each one is able to conduct full or partial inspections in two or more areas. They are most effective where:

- A company raises numerous issues (*e.g.* hazardous waste, air pollution, water pollution) of various types (*e.g.* environmental compliance, environmental impact);
- Inspectors can be trained to handle the requirements of particular industrial sectors of broad areas of economic activity.

By deploying experienced, cross-trained inspectors, inspectorates may benefit from an increased extent and quality of evidence gathered, as well as a higher speed of the enforcement process that abrogates the need to conduct additional inspections. Thus the upfront investment in training, the difficulty and length of an inspection's execution may be balanced by the obtained benefits.

(4) Process and prevention inspections

This inspection involves examining all aspects of industrial processes, including compliance, pollution prevention opportunities, compliance assistance opportunities, and other issues related to environmental performance. The focus is put on identifying key industrial processes and associated pollution streams and determining whether these streams are properly managed; on developing a greater understanding of the entire process, from raw material inputs, through the process operation, to all outputs, including products, intermediates, and all emissions (solid, liquid, and gaseous). Through developing an in-depth understanding of targeted processes, inspectors can identify key factors that contribute to violations, as well as promote solutions that are most acceptable from both industry and regulatory perspectives. The potential disadvantage of this approach is that it can require additional time, resources, and expertise to develop the knowledge of key processes necessary to make it work.

By design, this type of inspection presents the inspector with a greater opportunity to educate companies about compliance and better environmental performance. However, an inspector must continue to critically evaluate all environmental violations. It must be clear to the inspector and the company that the compliance assistance function is secondary to that of enforcement, that compliance assistance information is purely advisory in nature, and that each company is fully responsible for its own compliance decisions (i.e., such information is meant to facilitate better decision-making by the company, and is not binding for the inspectorate, and does not render the inspectorate liable for results produced by reliance on such information). The relative advantages of various approaches to multimedia inspections are summarised in Table 3-5.

Table 3-5. Relative advantages among approaches to multimedia inspections

Potential objective	Advantages	Disadvantages	Target facilities
Integrated screening			
Expands scope of inspection Leverages inspection resources Identifies major violations	Simple approach, requires least amount of time; Leverages inspection resources; No extensive training required; Identifies major violations.	May fail to identify all violations.	Appropriate for smaller, less complex companies, or in conjunction with more thorough single-media inspections.
Team inspection			
Comprehensive coverage of compliance issues for programmes addressed; Promotes deterrence where comprehensive.	Does not require addition cross-training of staff; Can achieve comprehensive coverage of company; Promotes deterrence where comprehensive.	Significant demand on staff resources; May not address cross-programme issues.	Appropriate for intermediate to large or complex companies subject to multiple environmental laws.

Potential objective	Advantages	Disadvantages	Target facilities
Consolidated inspection			
Addresses compliance issues; Addresses cross-programme issues and those that cause violations; Promotes deterrence where comprehensive.	Can address cross-programme issues and those that cause violations; Results in a more comprehensive understanding of company.	Requires cross-training of staff; Can be most complex to execute because each inspector is assessing compliance with multiple programme requirements.	Appropriate for small companies with multiple processes subject to numerous environmental requirements; Appropriate for certain types of industry sectors (*e.g.* printers, dry cleaners).
Process and prevention inspection[36]			
Improves overall efficiency and environmental performance; Promotes broader goals (*e.g.* pollution prevention, compliance assistance).	Considers all relevant factors; Capable of improving overall process; Capable of promoting broader goals (*e.g.* pollution prevention, compliance assistance); Appropriate for industry sector.	Requires development of in depth understanding of facility; Training essential.	Appropriate for any size company where the goal is to identify and address process-related causes of non-compliance; Less appropriate where company operates in bad faith.

Source: Multimedia inspection protocols: International examples (INECE, 1998).

3.3.6 Administrative inspections

Legal obligations for industries to run a good administration on waste flows, emissions and other aspects of their environmental performance are of increasing importance. Administrative inspections aim at: (a) achieving a well-founded judgement about the truthfulness of the administrative data supplied by the company to the authorities in response to legal obligations; (b) improving compliance with administrative obligations; (c) checking whether waste is actually being accepted, transported, processed and removed according to the legal obligations. Recently, industries started to pay growing attention to administrative requirements and systems to monitor them because the latter may provide managers with an exact understanding of environmentally-related costs, e.g. those that depend upon the nature, size, origin, and destination of waste flows.

Administrative inspection

Checking through desk-research and site visits whether the legal administrative obligations (*e.g.* concerning **reporting**, **registration**, and **accountability** on waste streams, emissions to water, air, or soil) are being met.

An administrative inspection comprises the following activities:

(1) Inspections (site visits): Checking on the spot the main lines of compliance with legal obligations concerning administration, *i.e.* whether the required files are available, filled-in properly, and kept up-to-date according to legal obligations.

(2) Desk-research: Checking from 'behind the desk' whether the data to be reported have really (and in time) been sent to authorities and whether they meet the requirements.

[36] Note: Generally used as part of team or consolidated inspection.

(3) Description/picture of the company's technical processes, as well as the administrative organisation (AO) and the internal control procedures of the company.

(4) Risk-analysis: Analysing the organisational structure of processes in the company with the objective to find 'weak spots' that have led or can lead to non-compliance.

(5) Line checks: Evaluating whether the administrative organisation of the company as well as its control procedures have actually been implemented and function as required, *e.g.* by checking whether data of different documents are in conformity with each other.

(6) Connection checks: Connecting the data supplied by the company and data available from the authorities, in order to trace possible discrepancies which may signal a violation.

(7) Analysis of the waste administration, including the waste (mass) balance: Check whether the waste streams entering and leaving the company are correctly administrated, e.g. by doing a mass-analysis. In a mass-analysis a check is done on the balance of the supply, the removal, and the stock from a company.

(8) Linking administrations: With the help of automation equipment, a comparison is made of the financial administration and the waste administration of a company with the objective to find possible offences or fraudulent activities by connecting the separate administrations.

(9) Checking whether the findings meet the legal obligations and tolerances[37]: Determining to what extent the observations show an offence against legal obligations. The profundity of the conclusions depends on the nature of the investigation that has been carried out (basic, surface, or in-depth investigation).

A three-tier strategy of administrative inspection

Proper administrative inspections require good structuring of the inspection process. Neither it is desirable nor possible to fully use all forms of administrative inspection in all companies; this inevitably means that choices have to be made. For some companies superfluous and less frequent checks will be appropriate. Other companies may need a more regular and in-depth approach. The strategy will depend on the nature of the company, its potential environmental impact or actual problems, and the history of compliance. Accordingly, several types of administrative inspections can be distinguished: (a) basic investigation; (b) surface investigation; and (c) in-depth investigation.

Basic investigations cover all the companies with administrative legal obligations and mean that a file is created and updated that contains the following information:

- **Actual company information,** for instance permits (licences), reports on site visits, correspondence, technical description of the company's processes, including schedules and relevant data concerning the situation of compliance;
- **Registration data,** based on the licence(s) and other legal obligations (emissions, waste streams, storage of (hazardous) waste/substances, etc.);
- **Other relevant information** *e.g.* from the Chamber of Commerce, criminal files, databases of other authorities.

[37] A tolerance is the chance that mistakes are made checking the waste administration, expressed in a percentage that can maximally be accepted and still allows the outcome of the checking to be a faithful accountability.

The preferred frequency of a basic investigation is once a year. The company information and other relevant information have to be checked for correctness, topicality, and completeness (however without using in-depth methods of analysis). The registration data concerning waste should be processed at a central spot inside the inspection organisation for their validity.

The basic investigation covers activities 1, 2, and 3 of the administrative inspection process as described above. The basic investigation is a starting point, indispensable for the next steps.

The **surface investigation** follows the basic investigation. The surface investigation is carried out on selected companies. Selection criteria can be:

- Information from the basic investigation;
- Category of companies or branch;
- External signals (for instance, complaints);
- Authority's experience with the company;
- Actual and potential 'weak spots' in the company's operational management.

The surface investigation covers the activities mentioned under 4 to 9, inclusive, as discussed before in this subsection, and its prime objective is to scan the company's operational management in order to acquire information on compliance with administrative and other legal obligations, as well as marking possible "weak spots". On the basis of the surface investigation, a decision can be taken as to whether an in-depth investigation may be required.

An **in-depth investigation** is carried out based on signals from the surface investigation, as well as based on autonomous indications from the ordinary regular inspection activities indicating fraudulent activities within a company. Available specialists and a budget for extra expertise determine the number of possible in-depth investigations.

There is no standard approach for in-depth investigations. Approaches always have to be tuned to the situation in the specific company. The content of an in-depth investigation is similar to surface investigations. The main differences with a surface investigation lie in:

- **Focus:** Since the undertaking of in-depth investigations is due to specific signals, there can be a stronger focus on a specific problem, unit or part of the company, or waste stream;
- **Instruments used:** As part of an in-depth investigation, advanced investigation techniques and instruments may be used to clarify the company's processes, the cash flow, and the material balance. Compliance checking and criminal investigation approaches are similar here. Where necessary, also the relations within a hierarchy pyramid within the investigated company or with other companies will be studied;
- **Expertise involved:** An in-depth investigation is likely to require multi-disciplinary teams. These teams will consist of experts with an inspector who is a specialist in carrying out administrative inspections (administrative inspector), the 'regular' inspector of the company who is familiar with specifics of the company, as well as (external) experts, like forensic accountants, information technology experts, and auditors of data security systems, experts from the police, etc.;
- **Method of working.**

In-depth investigations cannot be carried out without first carrying out a surface investigation. Data from the basic investigation must always be available.

In the practice of administrative inspections, so-called "quick scans" are also used. A quick scan in this context is an assessment using the data of the previously carried surface or in-depth investigations to see whether there is a change, an improvement, or a worsening of the situation compared to the outcomes of previous investigations. Since a lot of data will be available from previous investigations, the quick scan can have a limited scope. This makes it possible to administratively inspect companies regularly.

Division of tasks between administrative inspectors and regular inspectors

It must be clear for all staff members who is to carry out which task as part of the administrative inspection. After the decision to introduce such a tool as administrative inspection, time will be needed to fully implement it. It presupposes specialised training of a limited number of inspectors in the field of (forensic) accountancy. But it also means that some basic aspects in an inspectorate, like a proper planning mechanism of inspections, a basic level of technical and legal expertise, the internal administrative organisation, and an inspection and enforcement strategy, should be present.

An administrative inspection should preferably be carried out in close professional co-operation with the regular inspector and without dominance of any of the inspectors involved. After training, the regular inspector should be able to do the basic investigation him/herself.

The initiative for a surface investigation should be given to the regular inspector; the initiative for an in-depth investigation to the administrative inspector. All this provided there is not an inspectorate schedule or programme to investigate all companies or groups of companies, overruling these initiatives. In cases of an in-depth investigation the regular inspector will keep an observing and supporting task.

In the preliminary preparations for administrative inspections, priority will be given to training of regular inspectors in order to enable them to carry out basic investigations. At the same time, selection and hiring of experts in the field of accountancy will begin; they will be primarily responsible for surface and in-depth investigations. After a certain period, other inspectors will gradually integrate surface inspection activities into their regular inspections.

Adoption of administrative inspections: A plan of action

The process described above needs elaboration in procedures, processes, and division of tasks. All these things can be worked out in an action plan containing the following elements:

- Describe in detail the internal arrangements for executing administrative inspections. Priority will be given to the elaboration of the part on basic investigations, since its introduction is a prerequisite to further deepening of administrative inspections. Regular inspectors will be familiarised with administrative tasks as early as possible in the implementation process;
- Draft a work programme and train regular inspectors in surface investigations;
- Ensure adequate specialised expertise. The needs will have to be specified and compared with the expertise available to the inspectorate. New staff may be hired. Define training requirements for inspectorate staff;
- Identify equipment needs to carry out the work (*e.g.* computer hardware and software);

- Clarify which regulatory requirements apply to a company's administration. Ensure that the inspectorate personnel has sufficient powers to investigate, copy, confiscate, lift electronic information from these administrations and registrations, etc.;
- Agree on the decision-making policy that would apply to the execution of administrative inspections and develop a handbook for administrative inspections;
- Describe (and conduct) relevant organisational changes (for instance, formulating job descriptions, nominating project-leaders, etc.);
- Develop an inspection programme for administrative inspections;
- Develop a plan for communication with the regulated community (and partner organisations of the inspectorate) explaining the reasons for the new way of inspection, as an extension of already existing inspection methods.

Practical execution of a basic investigation

Basic investigations are "low-level" administrative inspections and contain the following elements:

1. **Updating the company file:** The objective of this part of the investigation is to gather all relevant documents that might be needed to carry out any type of administrative inspection;
2. **Preparation of the investigation/desk-research:** During the preparation, relevant data from the existing inspection and enforcement files are studied. Also other data, e.g. in automated registration systems on waste streams (where such systems exist), or in permits, are studied. This forms a limited number of first (indicative) checks on completeness and accuracy of data. If the preparation gives indications that data-reporting by the company was incorrect of incomplete, or main differences were found between the individual company reports, or balances were not accurate, etc., it should be decided whether or not to start a surface investigation or an in-depth investigation;
3. **Site visit:** In this part of the administrative inspection an exact picture is made of the technical processes in the company. Furthermore an inventory of supplies has to be drawn up; it will be used for mass-balances and for checking how well the company does the inventory of supplies itself. A visual check of the company's stocks gives further information on the substances that are used or accepted by the company. Data are collected, from the company's written documents, concerning the administrative organisation and internal control mechanisms in the company. At this phase of the basic investigation, it is still too early to have an overview of the actual situation (*e.g.* through interviews). At random, several small checks are carried out, supplementary to the desk-research, as a preliminary check on correctness and completeness of the administrations, and as a check on compliance with legal obligations.
4. **Investigation of the acquired data:** The data gathered during the site visit will be grouped and filed, analysed and investigated. A flow chart of the company's processes and diagrams of its organisational structure are produced. Based on the outcome of the investigation a conclusion should be drawn on the level of compliance of the relevant legal obligations. Also a recommendation whether or not to pursue a surface or in-depth investigation should be given;
5. **Reporting:** Reporting can be done with the help of information gathered through the checklist for basic investigations. This checklist is a core assistant for performing efficient administrative inspections;
6. **Follow-up:** Follow-up takes place in the way it was laid down in the inspection and enforcement strategy.

Checklist 3-5. Conducting basic investigation as part of an administrative inspection

A.1 : UPDATING THE INSPECTION FILES		
	Availability	**Remarks**
– Recent licence(s) including possible application and company reporting	☐Yes ☐ No	
– Report of site visits	☐Yes ☐ No	
– Correspondence	☐Yes ☐ No	
– Data that have to be reported by the company based on legal obligations	☐Yes ☐ No	
– Fact sheet[38] (if used)	☐Yes ☐ No	
– Other relevant documents (*e.g.* from other authorities, citizens, the company itself) about its administrative organisation, etc.	☐Yes ☐ No	
A.2 : PREPARATION/DESK RESEARCH		
A.2.1 : Collecting and receiving of data		
	Availability	**Remarks**
– Information from registration systems (*e.g.* waste streams of specific waste processors and collectors)	☐Yes ☐ No	
– Information about the specific reporting of the company	☐Yes ☐ No	
– Official information from the Chamber of Commerce	☐Yes ☐ No	
– Relevant information from the company files (see A.1)	☐Yes ☐ No	
A.2.2 First check on the correctness, the completeness and/or reporting in time of the data		
	Availability	**Remarks**
– Check the completeness and timeliness of reporting	☐Yes ☐ No	
– Check if all general (legal) reporting obligations were met	☐Yes ☐ No	
– Check whether all permit obligations on reporting were met	☐Yes ☐ No	
– At random, check the correctness of data reported based on licence obligations (depending upon the size of the company, 3 to 5 outgoing waste streams are checked to see whether the reported data and other sources are in conformity with each other)	☐Yes ☐ No	
– Check whether the accepted substances meet acceptation criteria prescribed in the permit	☐Yes ☐ No	
– Check whether the volumes accepted remain under the yearly limit prescribed in the licence (extrapolation is possible but has to consider seasonal fluctuations)	☐Yes ☐ No	
– Estimate if the incoming and outgoing streams of substances are balanced, taking into account the company's stocks	☐Yes ☐ No	

[38] A fact sheet may be used by the inspectorate to summarise relevant data about the company, like name, address, managing director, licence(s) number(s), etc.

A.1 : UPDATING THE INSPECTION FILES		
	Availability	**Remarks**
– Estimate, based on the knowledge about the company's processes, if the reported quantities of outgoing partial streams are in conformity with the quantities of the reported incoming partial streams.	☐Yes ☐ No	
A.3 : SITE VISIT		
– Check if the description of the company's processes is available, and its conformity with reality. If no description is available, the technical processes should be described by the inspector him/herself. Draw a flow chart of these processes.	☐Yes ☐ No	
– Estimate the present stocks of wastes, raw materials and other substances in m^3/category. Later on, the present "stock picture" can be used to make up balances. Furthermore it indicates the substances that are accepted and used by the company.	☐Yes ☐ No	
– Check if the most recent diagram of the organisation is available	☐Yes ☐ No	
– Check availability of commercial information of the company, like leaflets, brochures, product-sheets, etc.	☐Yes ☐ No	
– Checking the company on acceptation and delivery of waste and other substances. A number of incoming and outgoing cartloads has to be checked, paying attention to:		
1. Presence of correct and complete filling in of official documents, including consignment notes	☐Yes ☐ No	
2. Sufficient checks by the company while receiving and delivering substances. Among other things it is checked by whom, and how does the acceptation/delivery take place, which documents are involved in this and who signs them.	☐Yes ☐ No	
– Exact and complete listing in administrative (registration) systems of substances, including waste. This check will be carried out at the company's weighbridge, if any.	☐Yes ☐ No	
– Carrying out of a so called line inspection. During a line inspection about 5 weighbridge documents (from both incoming and outgoing streams) are selected. The relevant consignment notes, descriptions, invoices and possible analysis-results concerning these 5 documents are acquired, copied and checked whether they are in conformity with each other.	☐Yes ☐ No	
A.4 : CONCLUSIONS AND RECOMMENDATIONS		
The conclusions of the investigation are:		
The recommendations/follow-up of the investigation are/is:		

Source: DCMR, 2001.

3.3.7 Use of mass-balance approach in inspection

Inspections can imply the use of a mass-balance approach. Such a kind of inspection will begin at the entry of raw materials and proceed through the process to the point of a specific release. The mass-balance approach is not only capable of tracking environmental compliance across different media, but also of identifying opportunities for improved environmental results by addressing corrective measures to limit cross-media transfers, identifying process or material-related problems, enabling compliance assistance, and examining pollution prevention opportunities. The results of a mass-balance inspection may spur company managers to become more aware of the consequences of certain production practices and, as a result, adopt production process modifications which reduce environmental control costs while, at the same time, yield an equally good or improved product.

The knowledge of the following key parameters is crucial in preparing a mass balance:

- **Inputs**: All incoming material used in the process;
- **Products**: Products and materials (*e.g.* by-products) exported from the facility;
- **Transfers**: Include substances discharged to sewers, substances deposited into landfill, and substances removed from the facility for destruction, treatment, recycling, reprocessing, recovery, or purification;
- **Accumulations**: Material accumulated in the process;
- **Emissions**: Releases to air, water, and land. Emissions include both routine and accidental releases as well as spills and fugitive emissions.

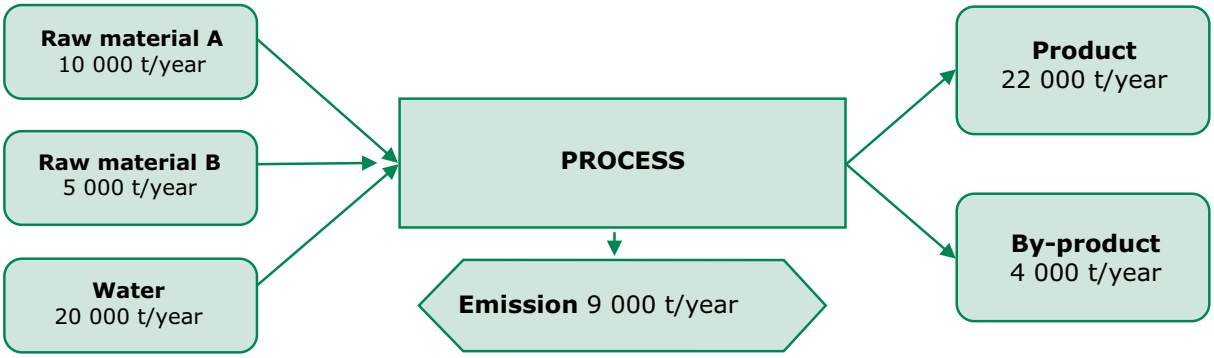
Mass-balances are appropriate when inputs, outputs and uncertainties can be determined accurately. Errors, sometimes significant, may occur as a result of inaccuracies associated with individual material tracking or other activities inherent to each stage of material handling. For example, final estimates will be significantly deviated if the mass-balance equation relies on data or calculation parameters that are not precise enough (*e.g.* pressure, temperature, steam concentration, flow, and control efficiency). In addition, uncertainty may be added because of failure to use representative samples when analysis of input and/or output materials is conducted.

Applying the mass-balance method in practice: An example

Below an example of applying the mass-balance method is presented. It can be used for a whole facility or applied to individual unit processes or pieces of equipment. This requires that information is available on the inputs (*i.e.* flow rates, concentrations, densities) and outputs of the unit process.

A process **uses**:	10 thousand tonnes of raw material A;
	5 thousand tonnes of raw material B;
	20 thousand tonnes of water.
to produce:	22 thousand tonnes of product;
	4 thousand tonnes of by-product annually.

Figure 3-3. Mass-balance process



Note: t = tonnes

Source: Based on Reference Document on the General Principles of Monitoring (European IPPC Bureau, 2003)

The total amount of emissions from the process is calculated as a series of steps:

Step 1. Calculate total input to process

Total inputs	=	mass of A + mass of B + mass of water
	=	10 000 + 5 000 + 20 000
	=	35 000 tonnes per year

Step 2. Calculate total output from process

Total outputs	=	mass of product + mass of by-product
	=	22 000 + 4 000
	=	26 000 tonnes per year

Step 3. Calculate total amount of emissions (air, water, land) produced

Total emissions	=	mass of inputs – mass of outputs
	=	35 000 – 26 000
	=	9 000 tonnes per year

Step 4. Identify transfers and spills

The facility will need to identify all its emissions. For example, of the 9 000 t/year of emissions, 2 800 tonnes of solid wastes may be collected and sent for off-site disposal, while approximately 6 000 tonnes of wastewater may be sent to an on-site water treatment facility prior to discharge to a sewer. This would then indicate that 200 tonnes of emissions have been released into the environment (for example, to the atmosphere of as a direct release to a water body, etc.). It is important to note that account must be taken of any pertinent emissions controls.

3.3.8 Factors influencing the choice of inspection approaches

There are several factors that can drive the selection of an appropriate inspection approach.

Programmatic factors

Inspections are just one element of the overall compliance assurance programme. In some cases, they may not be the best mechanism for serving overall programmatic objectives. Inspectorate managers need to seriously consider that the inspection programme may not, for example, yield cooperation in advancing pollution prevention objectives within the regulated community. Instead, a pollution prevention objective can be better promoted through separate compliance assistance programmes, providing on-site technical assistance on demand, rather than within the context of the regularly-scheduled compliance evaluation.

Resource commitments

The full range of regulatory requirements and programmes is too complex for a single inspector to master. Inspectorates often have difficulty in maintaining inspectors over sufficient time to enable them to acquire advanced knowledge of cross-media programmes or forensic accounting. Consequently, from a resource perspective, investing in training the entire inspection staff in integrated or administrative skills may sometimes be too resource-intensive. Training media-specific inspectors is more easily accomplished and, when a media-specific inspector leaves the inspectorate, he or she is more easily replaced.

Consequently, the inspection programme invests and loses less in human capital. If the compliance monitoring programme experiences high turnover, the inspectorate management may not choose to invest in highly trained inspectors. In this case, the management may choose to establish a small cadre of highly trained inspectors, perhaps for addressing specified industrial sectors. Other inspectors may receive more limited training in programme areas other than their area of media specialisation.

Site-specific circumstances

In smaller companies, the team approach has been found to be unworkable. Sending a team through a small electroplater shop is too disruptive to company operations, and can only work to create unnecessary tensions between the inspectorate and the company owners. On the other hand, even if an inspectorate has trained, highly skilled integrated inspectors, *e.g.* in petroleum refinery operation, the time required to conduct a comprehensive inspection with a single inspector could involve days or weeks. Consequently, selecting an inspection approach is often a site-specific decision, depending on circumstances, such as the size and complexity of the company, its past compliance history, and the number of environmental media affected.

CHAPTER 3.4
INSPECTION PRIORITIES, FREQUENCY AND REGULATORY EFFORT ASSESSMENT

The benefits of an on-site inspection are that it can reveal operational and compliance problems that emission monitoring data alone will not show. The very visit to a site, in particular if combined with a rigorous check, may exercise in some cases a higher impact on the company's performance than penalties[39]. While on-site inspections are important, inspectorates will need to compare carefully the benefits that they may potentially bring with the costs that they imply, in particular when the total inspection time[40] is limited.

A good understanding of priorities, minimum inspection frequencies, and time allocated per visit can help to optimise the inspection activity. This will be a starting point to determine the effort needed to regulate various processes with environmental impact and will help prevent excessive regulatory pressure. Besides, establishing reference levels for inspection frequency (minimum and normal) at the national level is one of the factors that bring consistency in compliance assurance programmes.

3.4.1 Priorities of inspection

Setting priorities of inspection (targeting) will mean that activities carried out by the inspectorate are ranked according to importance and urgency of intervention against a set of criteria (for instance, environmental aspects, available resources, deadlines, and hierarchy of tasks). Proceeding from a particular situation, inspectorates will have to decide on the list of criteria employed (for some examples see Table 3.6) and the weight of each criterion.

Basic rules of prioritisation

Adherence to some basic rules will be useful to make prioritisation effective:

- Analytical criteria need to be robust and defensible, so as to demonstrate the correctness of targeting when challenged;
- Baseline data need to be established for evaluating effectiveness of targeting;
- Corrections in priorities need to be included periodically through an iterative process that takes into account available resources, lessons learned, and any changes in the regulatory regime;
- Prioritisation process needs to involve all the inspectorate staff concerned;
- Flexibility of the priority setting needs to be maintained so as new concerns or data are accommodated and reflected in emerging priorities;
- Maximum use needs to be made of existing compliance and enforcement data: there is no sense in investing in data gathering if the agency does not take this data into consideration as part of its decision-making process.

[39] Scholtz, J. and W. Gray (1992), .A Behavioural Approach to Compliance: OSHA Enforcement's Impact in Workplace Accidents. (Paper presented to the Law and Society Annual Meeting, Denver, Colorado, June 1988) [unpublished] in .Administrative and Criminal Penalties in the Enforcement of Occupational Health and Safety Legislation., R.M. Brown 1992 Osgoode Hall Law Journal (vol 30, No. 3, Page 705.)

[40] There is a range of ways in which total time available for carrying out inspections could be distributed: (a) "Standard" number of inspections but variations in length; (b) "Standard" length of inspection but variations in frequency; (c) Variations in both length and frequency of inspections within the total time allowed.

Table 3-6. A list of possible criteria to set priorities for inspection and enforcement

Criterion	Annotation
Environmental aspects	Significant violators; Industries or processes that emit high-risk pollutants; Emission or discharge levels; Sensitivity of the receiving environment; Poor environmental conditions in a geographic area; Toxicity or hazard class of the pollutants being emitted or discharged; Specific type of pollution or environmental impact.
Administrative aspects	Assessment/endorsement of permit requirements; Reporting and record keeping requirements; Compliance history that exhibit systematic non-compliance; Amount of time since the last inspection; Companies with high staff turn-over or labour concerns; Follow-up inspection and enforcement; Results of previous year's inspections.
Human health and social aspects	Level of exposure to environmental impacts; Proximity to residential areas; Response to complaints from the general public; Selective inspection of less significant violators and lower risk areas to maintain enforcement presence; Providing advice (*e.g.* on Environmental Management Systems).
Available resources	Financial resources; Qualified staff; Material resources;
Deadlines	Deadlines made compulsory by politicians; Deadlines set by inspectorates themselves; Emerging issues such as court decisions.
Decision-making hierarchy	Enquires from the minister; Answering parliamentary questions; Providing assistance to the prosecutors or other authorities.

Who sets priorities

Various levels of government are involved in setting priorities; their relative influence will depend, to a large extent, on the structure of the enforcement system (*e.g.* centralised or decentralised). National involvement helps ensure consistency and harmony among priorities and improves cooperation among different levels. It also provides for harmonisation with priorities of other countries. On the other hand, individuals working at the sub-national level will have the best sense of what problems pose the most significant threats to the environment and human health, and of what factors motivate or inhibit compliance. Therefore, priorities will be most meaningful if they take into account national, regional, provincial, and local needs and are flexible enough to accommodate all these perspectives.

Communicating priorities

A broad understanding of priorities promotes compliance and contributes to deterrence. Therefore priorities will be communicated to the regulated community, *e.g.* through unions, trade associations, and professional journals. Of course, the inspectorate will not communicate its non-priorities that would lead poor performers to conclude that enforcement is unlikely.

What to target

The first issue to be addressed is what principle should guide the allocation of resources among different types or sizes of firms. There is a high likelihood that a strategy that focuses substantially on the large polluters (significant violators) will be more efficient than the converse. Often most of the pollution is caused by a small percentage of sources (*e.g.* 20 per cent of the regulated community may cause 80 per cent of the pollution). A further distinction may be made between groups of large companies. The largest ones, who by fact of being closer to technical innovation and industry best practice, are not always the most rational targets for inspection. Particularly in cultures where deterrence may contribute significantly to compliance, targeting of large polluters needs to be balanced with the deterrent effect of broader coverage.

Box 3-7. Targeting large industry: some sources of threshold values

Often large ("major") industry is identified in international or national law. Some examples of threshold values and criteria that may help to define major industry are presented below.

Multilateral environmental agreements. The UN Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) requires that assessments are extended across borders between Parties of the Convention when a planned activity may cause significant adverse transboundary impacts. Its Appendix I includes a list of activities that automatically require an application of the Convention. For example, these are: crude oil refineries and installations for the gasification and liquefaction of 500 tonnes or more of coal or bituminous shale per day, thermal power stations and other combustion installations with a heat output of 300 megawatts and more, major installations for the initial smelting of cast-iron and steel and for the production of non-ferrous metals, integrated chemical installations, waste-disposal installations for the incineration, chemical treatment or landfill of toxic and dangerous wastes, pulp and paper manufacturing of 200 air-dried metric tonnes or more per day, etc. Appendix III contains general criteria to assist in the determination of the environmental significance of activities not listed in Appendix I. Although the Espoo Convention is one of the most specific piece of international legislation for targeting major industry it is not the only one.

European Union. The aim of the Seveso II Directive is to prevent major accident hazards involving dangerous substances or, as accidents do continue to occur, to limit their consequences. The Directive applies to establishments where dangerous substances are present in quantities equal to or in excess of the quantities listed in Annex I. In the Directive, an attempt is made to ensure increased consistency in enforcement at European level. Competent authorities are obliged to organise an **Inspection System** that can either consist of a **systematic appraisal of each establishment** or of at least **one on-site inspection per year**. Another document that lists major industry is the Integrated Pollution Prevention and Control Directive (europa.eu.int/comm/environment/ippc/)

United States. The Major Source Enforcement Effort defined a "major facility" as a source with a potential to release over 100 U.S. tons per year of air emissions and discharge over one million gallons per day into surface waters; preponderantly, these are: power plants, publicly own wastewater treatment plants, petroleum refineries, steel mills, and chemical manufacturers.

Sources: UNECE Espoo Convention (Guidance on the Practical Application of the Espoo Convention), March 2003, http://www.unece.org/env/eia/guidance/espoo.pdf); European Union (www.europa.eu.int/comm/environment/seveso); United States (R.F. Duffy, 1998; www.inece.org).

In addition to identification of major industry, a useful macro-level approach is **ranking industrial sectors**. The ranking analysis may be based, for example, on the historical multi-media non-compliance patterns for all the facilities within the individual industrial branch and their potential and actual impact on the environment.

The scope of macro-level targeting may include corporations with poor environmental compliance. In **corporate targeting** analysis, patterns may be revealed of improper operation of many facilities across the country (or internationally) that are part of corporations and their subsidiaries. Parameters that will indicate the need for corporate targeting are corporation size, number of facilities reported as being in significant non-compliance, corporation-wide non-compliance rate over time, and the total amount of emissions released by facilities owned by the corporation. In the absence of a unified enforcement response, the corporation may be able to avoid to a large extent internalisation of pollution costs. If a pattern can be identified, and a corporate-wide enforcement response developed, the impact on the corporation and its practices, and the resulting benefits to the environment, can be quite impressive (Box 3-8).

Box 3-8. Results of corporate targeting: A case that led to a 11 million US dollar fine

A notable example of the benefits of the corporate approach was an action taken by the United States Environmental Protection Agency (EPA) against Louisiana Pacific Corporation where a pattern of widespread non-compliance was uncovered. The government uncovered evidence through its databases and other sources of information that Louisiana Pacific had failed to apply for required Clean Air Act permits and provided incomplete or low estimates on air emissions at 11 of its oriented strand board and medium-density fibreboard facilities located in nine states.

As a result of the company's failure to report all its air emissions of volatile organic compounds, particulate matter, or carbon monoxide comprehensively, neither the federal nor state governments would or could accurately know the level of air quality deterioration in the vicinity of the plants. In addition, the company avoided installing pollution control equipment that would have been required to prevent the significant deterioration of air quality in areas which were attaining ambient air quality standards. In settling the case, the company paid an $11 million penalty, the largest Clean Air Act penalty in the EPA's history, and the company has implemented an extensive Clean Air Act compliance programme including obtaining all necessary air permits and complying with all necessary requirements and regulations.

Source: Duffy, R.F. (1996), Strategic Targeting for Compliance and Enforcement[41].

Corporate approaches can be resource intensive due to cross-programme coordination and coordination among many or all headquarters and regional offices. Coordination becomes even more complex if other government agencies show interest in taking part in this exercise.

Geographic targeting will seek to define areas with most acute environmental and/or compliance problems.

Targeting methods

The complexity of prioritisation methods will reflect a concrete situation and inspectorates' technical possibilities. The early phases of an agency's life cycle will be characterised by limited budgets and manpower thus calling for a very strong prioritisation, but also a very rough one. Sophisticated methods require more manpower and data available data. Their introduction can be envisaged in a mature organisation.

[41] http://www.inece.org/4thvol1/duffy.pdf

At any stage of development, inspectorates will carefully compare the time spent to undertake the assessment with the average inspection time to prevent increase in regulatory efforts without major gains. In the annexes to this part, several methods of priority setting are described, which can be used either directly or adapted to the context of a concrete country or region.

The choice of a prioritisation approach will also depend upon the possibility of being applied as a tool that supports discussion with operators of areas where their performance could be improved. Thus direct links are needed between prioritisation methods and inspection frequency and procedure.

Often risk-based approaches are used to perform industrial sector or facility-specific analyses, as well as corporate, geographic, and ecosystem targeting. One typical approach is the development of relative risk rankings of facilities where the amounts of reported emissions for substances are weighted by the risk (toxicity) factors for each chemical. Many methods of risk-based analysis have as a reference point the condition of receiving media and focus on identifying facilities that may substantially increase the level of pollution and degradation of the environment. Compliance assurance programmes will then be adjusted to first bring into compliance the facilities of greater concern or potential impact.

Recently, consideration was given to developing risk assessment models (as those presented in Annex 3-2 and 3-3) that would specifically be designed to support prioritisation in the framework of compliance assurance programmes. Any candidate method for the use by environmental inspectorates would need to satisfy several requirements:

- Ensure a certain relative balance of **operator performance and environmental impact potential specific to a branch of industry**. While these are both important factors that determine the level of risk associated with a particular facility, this does not mean that they require equal consideration in a risk assessment method tailored for compliance assurance programmes. The balance of these two factors will depend upon the intended use of the assessment method and its scope (*e.g.* targeting an industry sector as compared to targeting an individual facility);
- Find an optimum **duration for completion of an assessment**. Obviously, any time spent undertaking a risk assessment will decrease availability of time for other aspects of regulation. The length of time taken to complete the assessment therefore needs to be in proportion to the benefits obtained from its use. There is a potential trade-off between the time taken and the **comprehensiveness** of the risk assessment;
- Guaranty **consistency in application**. This is important in order to ensure that facilities are regulated equitably. Assessment criteria that require no interpretation will help to ensure consistency but may lower the potential benefit from expert judgement by inspectors;
- Provide **incentives to operators** through its outcomes. If risk assessment outputs are used to determine regulatory effort, operators may have an incentive to improve their performance.

Box 3-9. Simple prioritisation method

To make an objective selection of priorities, in Province of Limburg (the Netherlands) a simple prioritisation method has been developed and used. According to this method, a business's environmental profile is determined each year based on the following 16 items. Specifically, each year the enforcement personnel looks at the aspects of safety, number of complaints, exceptional incidents, compliance, facilities added, self-regulation and assurance. Each item is weighted as indicated. The higher the score, the higher priority for inspection.

1. **Complaints**: Have well-founded and persistent complaints been proven valid for more than one year? If so, 2 points.
2. **Incidents**: Have there been any incidents in the past year? If so, 1 point.
3. **Compliance**: Have there been offences against qualified key provisions in the past 2 years? A qualified key provision refers to major and/or irreversible environmental damage, gross negligence, calculated and/or malafide practices, risk to public health, and repeat offences. If so, 2 points.
4. **Compliance after administrative measures taken:** Are offences committed consistently which are not reversed even after a penalty is imposed? If so, 1 point.
5. **Criminal conduct**: Has an official report been filed on the business in the past two years? If so, 0.5 of a point.
6. **Offence not under control**: Is the offence such that it cannot be controlled by means of standard enforcement measures? If so, 2 points.
7. **Verifiability of information:** Is it difficult or impossible to verify the measurement data or records that the business itself keeps? It is important that the competent authority be able to assess these data. If so, 1 point.
8. **Processing technique and impact uncertain:** The risk of irregularities is greater if the techniques used are not precisely understood and their impact is unclear. If that is so, 0.5 of a point.
9. **Activities unclear:** Are some of the business activities unclear, making it difficult to draw up a raw, auxiliary, and waste materials analysis, for example? If so, 1 point.
10. **Risk posed to surroundings:** Does the business pose a general risk to its surroundings (residential) or does it produce a great deal of pollution? If so, 2 points.
11. **Most recent inspection:** When did the company have its most recent inspection? If three or more years ago, it will be fined a number of points: 3 years ago, 3 points; 4 years ago, 4 points; and 5 or more years ago, 5 points.
12. **Is permit up-to-date:** Did the permits department last check the permit to see whether it is up to date more than 5 years ago? If so, 1 point.
13. **Enforcement officer's "gut feeling":** Is the business cooperative? To what extent does it exercise self-regulation properly and how are the working processes assured? Depending on the level of assurance, the company may be fined 0 to 3 points; 0 points apply when the degree of self-regulation and assurance are satisfactory.
14. **Safety**: Does the business fail to play a significant role in guaranteeing internal and external safety? If so, 1 point.
15. **Fire safety:** Are substances stored on the premises that may affect the fire safety of the business? If so, 1 point.
16. **CPR stores:** Does the business store hazardous substances that must be stored as prescribed in the Prevention and Disaster Committee Guidelines (CPR) 15.1 and 15.2 but probably does not do so pursuant to these guidelines? If so, 1 point.

By adding up the points, the environmental profile of the business emerges. This profile can be used when setting priorities for preventive inspections.

Source: Province of Limburg Inspection and Enforcement Strategy (December 2002).

3.4.2 Frequency of inspection

Frequency of inspection is defined as the return to a facility, per certain period of time, for assessing its environmental compliance. Inspection procedure guidelines may specify the minimum and normal levels of inspection:

- The "**minimum" frequency** of inspection is the lowest recommended frequency to which the inspection may be reduced;
- The "**normal" frequency** is one which should be followed - absent strong indications that the environmental performance of a facility is excellent or, on the contrary, poor.

It would be difficult, if not impossible, to establish a **"maximum" frequency**. A strict rule needs to be followed, however: any level of effort above the normal frequency should be based on a significant and demonstrated concern for the environmental compliance.

Usually, both minimum and normal frequencies of inspection are sector-specific, while a frequency more intensive or less intensive than normal is a facility-specific value. All these reflect either the risk to the environment or the behaviour risk (patterns of non-compliance) posed by an industrial sector or a concrete company. Some other factors may influence the frequency of inspection, such as any relevant national regulations or guidelines, any specific policy choices in regard to regulatory approach, and the need to use available resources efficiently and effectively.

Inspectorates will define minimum and normal frequencies for each class or group of companies, commonly categorised by reference to industry classification (codification) systems.[42] For example, in the "Reference Book for Environmental Inspection" (1999), IMPEL recommends that:

"Competent authorities in the EU member states should set baseline frequencies for each category of installation. To establish such a baseline programme, the following requirements should be taken into account:

- Installations covered by the Council Directive 96/61/EC of 24 September 1996 concerning Integrated Pollution Prevention and Control (IPPC-Directive);
- Installations covered by Council Directive 82/501/EEC of 24 June 1982 on the control of major-accident hazards of certain industrial activities (Seveso-Directive) or the Council EU Directive 96/82/EC on the Control of Major Accident Hazards (Seveso II);
- Installations to be inspected according to national/regional requirement priorities."

In order to establish the inspection frequency appropriate to individual companies, it is then necessary to develop an assessment and scoring system for adjusting the baseline frequency for each company according to its specific circumstances and the level of risk it poses to the environment. Inspectorates may wish to select the system(s) that they wish to use according to their own national culture and regulatory policies. Whatever system is selected for adjusting frequencies to the risk of individual installations, it will inevitably depend upon the professional judgement of a knowledgeable inspector. This judgement may be best made at the time of issuing a permit, and then reviewed periodically.

Increasing intervals between inspections is a tool that may be used to encourage outstanding performers. Timesavings are then allocated to inspect poor performers.

[42] Such systems, *e.g.* NACE in the European Union or SIC in the United States, are often based on the nature of the processes involved.

As a rule, the standard interval between inspections is reduced and the frequency increased based on evidence of a moderate or severe violation. In general, the compliance history will be an important factor influencing such decisions.

Inspectorates will need to document the decision to reduce the interval between inspections. For instance, a note (memorandum or section within the inspection report) should be written by the inspector, approved and signed by his/her supervisor, and placed in the company's dossier kept by the inspectorate. The decision to reduce the inspection interval may be made at any time, but it is advisable to consider whether any adjustment is needed after each routine inspection. The facility management may then be informed about the increased frequency of inspection and the inspection plan updated accordingly.

Table 3-7. An example of indicative inspection frequencies and hours per visit for major industrial installations and waste management sites

Categories of industries/waste management sites	Average time per inspection (hours)	Yearly inspection frequency	Hours per site per year
Refineries	60	5	300
Processing industry	60	5	300
Tank storage and transhipment	32	6	192
Bulk storage and transhipment	24	4	96
Fertiliser production plants	60	4	240
Power plants	28	5	140
Food processing plants	34	4	136
Metal-using and metallurgic plants	28	4	112
Marl, stone, and cement industry	40	1	40
Metal construction and motor works	20	2	40
Construction and material plants	34	2	68
Shipyards	32	3	96
Glassworks	20	4	80
Sewage treatment plants	20	3	60
Transformer stations	12	1	12
Shunting yards	20	4	80
Paper and cardboard industry	40	2	80
Gravel and rock mining	24	2	48
Large dump yards	16	19	304
Small dump yards	10	12	120
Sorting plants	10	9	90
Debris plants	8	10	80
Waste incineration plants	14	10	140
Composting plants	8	7	56
Storage and transhipment stations	8	9	72
Cable processing	10	18	180

Categories of industries/waste management sites	Average time per inspection (hours)	Yearly inspection frequency	Hours per site per year
Manure processing	14	12	168
Depositories	10	6	60
Shredders	10	6	60
Plastic recycling	8	16	128

Source: Training Manual for Environmental Inspectorates in South Eastern Europe, BERCEN (2003).

3.4.3 Duration of inspection

The amount of time spent on-site should be commensurate with the level of risk, the complexity of the facility and the degree to which inspection resources have already been committed to significant environmental issues already identified in the facility. The latter may include more in-depth inspection in selected technical areas in comparison with standard inspection procedure. During inspections, emphasis is often placed on performing physical checks, observing how the facility is operated and maintained, making independent measurements and taking samples, and interviewing facility personnel. Records review may involve a random selection of those records that have environmental significance.

The effort to assure environmental compliance will be influenced by process characteristics and will include both time spent on inspections and in the office preparing for inspections, writing reports and reviewing data supplied by operators. The risk posed by a facility and specific production process will influence the time-input required by many key activities of environmental inspectors.

3.4.4 Calculation of staff time and number required for inspection

The calculation of staff time will be largely based on the level of total regulatory effort, which is a function of facility numbers under certain categories and category-specific regulatory effort. The regulatory effort will be a derivate of facilities' risk rating and their grouping in categories: usually, three categories of facilities will be used to assess the regulatory effort (low, medium and high).

Box 3-10. Assessment of the regulatory effort in the United Kingdom based on category of facility

For instance, in the United Kingdom, a simple risk rating system (Annex 3-3) is used to determine the regulatory effort per facility (to be more exact, per "process") as applied to local air pollution control. The low risk rating corresponds to 25 points or less, medium risk equals 26 to 75 points and high risk – 76 to 100 points. Minimum levels of inspection are defined for each of these categories to provide guidance to local authorities performing inspection:

HIGH - Two "full" inspections a year, during which the local authority officer must examine full compliance with all authorisation conditions and look at any process or other relevant (*e.g.* management) changes. In addition, there must be at least one "check" inspection to follow-up any areas of concern or other matters arising from the full inspection. "Extra" inspections may be needed in response to complaints, adverse monitoring results etc.

MEDIUM - One "full" inspection, plus one "check" inspection, together with "extra" inspections as required.

LOW - One "full" inspection, together with "extra" inspections as required."

Source: Inspection Frequency - Basic Principles. Additional Guidance from the Department for Environment, Food & Rural Affairs, and from the Welsh Assembly Government (DEFRA, 2000)

In addition to the regulatory effort per se, there will be a range of other activities that are not dependent upon facility risk, such as:

- Training;
- Administration (including cost accounting);
- Identifying facilities operating without permit;
- Reporting, checking, and maintaining public registers;
- Appeal and prosecution work; and
- Baseline-level inspection (including travel time).

The rough calculation of staff time and number needed to conduct inspections can be done in several steps:

- **Step 1**: Dividing facilities into categories according to their risk and precisely indicating how many facilities belong to each category;
- **Step 2**: Establishing the normal frequency of inspection per year;
- **Step 3**: Estimating the regulatory effort per category, in hours or days spent at a certain type of facility;
- **Step 4**: Assessing the total time on inspection;
- **Step 5**: Assessing how much time (days) is spent annually on other tasks, annual leave, seek leaves, meetings, etc.
- **Step 6**: Calculating the effective time for inspection, days per year;
- **Step 7**: Dividing the total time of inspection by effective time to evaluate the number of inspectors required (but not yet their profile, which is done subsequently).

In addition to field inspectors, an inspectorate will need personnel for general management, administrative tasks, financial matters, legal support, information technologies management, public and international relations, etc. When calculating staff requirements, it will be important to evaluate these needs too. Table 3-8 will help inspectorates to estimate roughly their staff needs based on a quite simple method. This method uses parameters that are described above.

It is acknowledged that this method of staff calculation is not as detailed and robust as some managers would expect; however, it was developed on the basis of an algorithm that appeared to be sensible in the light of regulators' experience worldwide. Agencies that will find this method appropriate for their needs, may want to perform calculations using Excel spreadsheets.

Table 3-8. A simple calculation algorithm to estimate inspectorate staff number

INSPECTORS				
Risk for the environment	**HIGH**	**MEDIUM**	**LOW**	**Σ**
Number of facilities (A)	A_1	a_2	a_3	$A=a_1+a_2+a_3$
Normal frequency of visits per year (B)	B_1	b_2	b_3	
Number of inspections per year (C)	$c_1=a_1*b_1$	$c_2=a_2*b_2$	$c_3=a_3*b_3$	$C=c_1+c_2+c_3$
Days per inspection (D) Including: Planning, preparation, travel, all procedures on-site (covering all media), sampling and post-inspection reporting	D_1	d_2	d_3	
Total man-days	$E_1=c_1*d_1$	$e_2=c_2*d_2$	$e_3=c_3*d_3$	$E=e_1+e_2+e_3$
Effective days per inspector F = [(Working days per year) – (training days per year) – (meeting days per year, including internal and external meetings) – (annual leave and average duration of sick-leave per person per year) – (national holidays) – (any other non-inspection time employment)]				F
Number of inspectors (INSP)				E / F
ADDITIONAL STAFF REQUIREMENTS				
Management			M	
Administrative staff			AS	
Judicial support			JS	
Other staff needs and staff turn-over			X	
TOTAL			**INSP + M + AS + JS + X**	

Source: Based on UNEP (1996), Industry Environmental Compliance: Training Manual, Technical Report Nr. 36, UNEP: Industry and Environment, Paris.

CHAPTER 3.5
OPERATORS' SELF-MONITORING PROGRAMMES

3.5.1. General framework for self-monitoring

To monitor compliance, enforcement authorities rely on their own monitoring systems but they also use information gathered through other channels, including self-monitoring and reporting performed by operators. In OECD countries self-monitoring by industry is widely used complementarily to state monitoring systems. Self-monitoring helps industry track its own compliance, and record and report the results for government review. This instrument is also useful for increasing the level of management attention devoted to compliance and improvement of production efficiency and prevent pollution.

A broad application of self-monitoring is relevant especially in cases of weak capacity of monitoring systems run by environmental and other governmental authorities. Emphasis on effective functioning of self-monitoring can also be useful in countries, where enforcement agencies have restricted access to facilities, or where risks of industrial accidents are magnified by regulatee's poor environmental awareness.

3.5.2. Definition and potential benefits of self-monitoring

Self-monitoring refers to measures put in place and paid by operators in order to monitor their own compliance with regulatory requirements and report results to the competent authorities. Self-monitoring primarily relates to measurements of process conditions (operation monitoring), process releases (emission monitoring), and environmental conditions (impact monitoring) in accordance with requirements specified in laws, regulations, permits, or other legally binding documents.

Programmes of self-monitoring are, as a rule, mandatory and can be part of permits, in particular integrated permits, or constitute stand-alone documents. The requirements to conduct self-monitoring are stated in legal and administrative documents, issued by the government. Information obtained through self-monitoring is increasingly becoming available to the general public through Pollutant Release and Transfer Registers (PRTRs).

Self-monitoring can and should be a "win-win" instrument bringing benefits to both the regulatee and the regulator. Establishment of a self-monitoring system can bring its rewards through, e.g.:

- Better understanding of compliance status and easier data gathering for taking decisions as concerns regulation of industrial environmental impacts;
- Improved control over accidental impacts on the environment and an earlier response to irregular situations, based on the operator's knowledge of his process, and proximity to the monitoring points;
- Higher environmental awareness due to a mechanism that educates the operator about the regulatory requirements and their relation to industrial processes and costs;
- Enhanced management responsibility for environmental compliance;

– Increased cost-effectiveness of the entire compliance monitoring system, since self-monitoring will normally provide more information at less cost than may be obtained by periodic inspection and monitoring by competent authorities;

– Increased public scrutiny of environmental performance, which may come as informal pressure on a facility to improve performance (*e.g.* industry rating systems) or a more formal response (*e.g.* citizens' enforcement suits).

The need for self-monitoring is expected to increase as:

– The Polluter Pays principle is applied to compliance monitoring, particularly under regulatory regimes that do not provide for the recovery of competent authorities' monitoring costs from operators;

– An integrated permitting system is implemented;

– Industry adopts environmental management systems;

– The general public has higher demand for compliance data.

3.5.3. Critical elements of self-monitoring

Competent authorities need to define the scope of self-monitoring by setting priorities and specifying which facilities are subject to self-monitoring and reporting. Such priorities will be consistent with priorities for permitting, inspection, and enforcement. Any facility that has a permit and is likely to be inspected should be required to conduct self-monitoring and maintain compliance records. However, the design of self-monitoring programmes may differ and depend upon the risk posed by different facilities. The key variables of these programmes will be: monitored parameters, methods and frequency of monitoring, methods and frequency of reporting, and institutional arrangements.

SELF-MONITORING ASPECTS OF PERMITTING:

It is good practice to set self-monitoring requirements in environmental permits. In this context, several parameters should be considered:

– Conditions within a process (*e.g.* temperature of combustion);

– Equipment (*e.g.* efficiency of add-on devices);

– Emissions from a process (*e.g.* pollutant release rates, fugitive releases);

– Efflux conditions at a process (*e.g.* exit temperature, exit velocity, or flow);

– Impact (*e.g.* ambient pollutant concentration, noise, odour, vibration);

– Resource usage (*e.g.* energy used per unit of production).

The operator must provide the necessary expertise, equipment and analytical facilities to carry out the specified measurements. These facilities may be owned by the operator or services can be obtained on a sub-contract basis. Combinations of these arrangements are common whereby the operator takes samples and has the analyses carried out by an external accredited laboratory. Often, approval from the competent authority is required to commission self-monitoring to a third party. When several parties are involved, strict compliance with performance standards for sampling, sample transportation, and analysis becomes crucial.

In accordance with the Polluter Pays principle, the costs of self-monitoring are met by the operator, whatever the arrangements are for carrying out measurements. Self-monitoring requirements imposed by the competent authorities, however, have to take into consideration the costs of data production, analysis, and reporting. Self-monitoring programmes should generate adequate types and amounts of data at minimum cost for the regulated community. The government must ensure that neither the amount of information nor the frequency of reporting exceeds its ability to process and use the information.

EVIDENTIAL COMPLIANCE

Assessment of compliance with self-monitoring requirements implies that the operator should provide evidence of:

- The adequacy of the measurements made: this requires information on all contributions to the uncertainty in measurements, including contributions due to sampling, analysis, field conditions;
- The adequacy of available contextual information concerning the situation in which the measurements were made (*e.g.* in normal operating conditions, start-up or shut-down conditions.

In many countries, results of self-monitoring supplied by industry routinely or in the case of accidents can be used as the basis for legal action. However, many regulatory regimes in OECD countries require authorities to carry out sampling and analysis before taking enforcement action. This is mandatory where using self-monitoring data is considered inadmissible on the grounds of preventing self-incrimination by the operator.

Approaches to implementation of self-monitoring depend upon a country's regulatory traditions and, therefore, may differ. However, there are key issues that environmental authorities need to address, such as:

- The scope of self-monitoring (what facilities are obliged to conduct self-monitoring);
- What parameters must be monitored and at what frequencies;
- What procedures are to be followed and quality is to be controlled throughout the data production chain, record keeping and analysis, and reporting.

It will be important that national legal systems provide the competent authorities with appropriate powers to impose requirements for self-monitoring on the operator. Several other "universal" characteristics of regulatory systems have to be met to ensure effectiveness of self-monitoring:

- Requirements for establishing particular compliance self-monitoring, and reporting programmes are legally binding and clear to operators, competent authorities, and other possible users of the output information;
- Quality control/quality assurance and data interpretation conditions are stipulated, clear, known to the regulated community, and enforceable;
- Compliance objectives (*e.g.* Emission Limit Values) are specific, preferably set in permits, and technically and economically achievable;
- Legal foundation exists to minimize possibilities for fraud and negligence;
- Reporting requirements from the operator to the authorities are specified;
- The authorities understand the design of and periodically check the self-monitoring systems in the plants in question;

- Compliance with self-monitoring requirements can be easily assessed;
- All necessary samples, analyses, instrumental measurements and so on, as well as reports are recorded in a traceable manner allowing easy auditing by the competent authorities;
- The data obtained are compared regularly with the compliance objectives to check whether they are being met;
- A programme review procedure is put in place, to ensure that technical developments, which might improve the effectiveness of self-monitoring are taken into account;
- Division of responsibilities within a wider monitoring system is clear.

3.5.4. Legal basis for self-monitoring

A hierarchy of legal vehicles governs self-monitoring. Laws can stipulate general obligations for self-monitoring through either: (a) explicit expression of self-monitoring requirements; or (b) a general expression of authority for information collection and/or reporting. Further development of requirements for self-monitoring can be provided for in regulations, permits, or other legally-binding documents.

The key question for establishing a sound legal basis is what level of discretion the competent authorities are allowed to use in determining the nature of self-monitoring requirements and influencing the design of self-monitoring programmes. Directly mandating self-monitoring and determining its elements in great detail may restrict future developments in the field concerned. It also can be a serious impediment for correcting the design of self-monitoring, if the primary legislation is not exact or misleading. However, legal requirements of direct application may be more easily enforceable and have a stronger impact on the compliance behaviour than requirements imposed through secondary legislation.

Providing general statutory authority can be advantageous as the knowledge of the competent authority will be fully valorised, and it will be possible to apply an integrated approach. Such authority will then be implemented through regulations and permits. The latter will tailor self-monitoring to the particular needs and conditions of the facility.

3.5.5. Division of responsibilities between authorities and operators

The reliance on self-monitoring is a recent trend that has come about in order to complement traditional systems where competent authorities were mainly responsible for checking operators' environmental performance. However, the potential benefits of self-monitoring should not be overestimated. For instance, there is a risk that self-monitoring results can be manipulated, which may lower the trust of the general public in the results. At the same time, verifying these results can be difficult.

These and other reasons make it necessary to keep a certain involvement of competent authorities in the implementation of self-monitoring. Where the regulatory arrangements allow the operator to propose a programme of self-monitoring, an appropriate time has to be allocated for the competent authorities to consider the operator's proposals and, if necessary, seek additional information before either accepting or rejecting them. The authorities may inspect the operator's arrangements for self-monitoring or carry out monitoring programmes themselves to provide independent checks. In either case, the responsibilities assigned to each party must be clear in order to avoid confusion. The way in which responsibilities may be divided between authorities and operators are illustrated in Table 3-9.

Despite the division of responsibilities, any compliance monitoring system has to be based on uniform requirements for quality assurance, regardless of who carries out the monitoring. This includes standard methods of measurement, certified instruments and personnel, and accredited laboratories.

Table 3-9. Possible division of responsibilities within self-monitoring programmes

Operator	Authority
Design of self-monitoring programmes	
– Make proposals for the programme; – Explain and justify the elements of the programme, including from the perspective of costs and benefits.	– Develop regulations on self-monitoring; – Develop technical and other guidance; – Assess the programme proposed by the operator and decide on its content.
Implementation of self-monitoring programmes	
– Conduct and document self-monitoring; – Follow all procedural requirements; – Perform quality control and quality assurance; – Provide inspectors with access to facility and data; – Follow safety precautions; – Commission monitoring to a third party, accredited by the authority; – Evaluate the performance of the programme.	– Develop regulations on quality control/quality assurance as part of a data production chain; – Develop technical and other guidance; – Check whether individual programmes are reliable and meet quality requirements; – Examine measurements made by operators; – Cross-check monitoring data; – Commission programme auditing to a third party.
Analysis and reporting of results	
– Evaluate results, incl. statistical analysis; – Assess compliance by comparison of monitoring results with regulatory requirements; – Report (some) results continuously and/or at regular intervals; – Report non-compliance; – Explain results to the authority and the public; – Take actions for improvement.	– Examine monitoring results; – Identify non-compliance; – Summarise results; – Take enforcement actions; – Make results and findings public.

Source: Based on "Best Practice in Compliance Monitoring", IMPEL (2001)

3.5.6. Measurement methods

Self-monitoring must be based on recognised and validated methods, which are generally termed "standard" methods, where they are available. Reference methods are established by the European Committee for Standardization (CEN), the International Standards Organisation (ISO) and the national standards organisations in different countries. Two key issues in relation to standard methods are:

- Who chooses, proposes, or specifies the standard method for use in a given situation;
- How this method is judged to be acceptable.

Standard methods may be chosen, proposed, or specified for use in a compliance monitoring programme by:

- The competent authority - this is a typical standard procedure,
- The operator – such a proposal still needs approval by the authority,
- An expert – this is usually an independent consultant who may make a proposal on behalf of the operator; such proposal needs approval by the authority.

When deciding whether to approve the use of a method the competent authority is generally responsible for deciding if the method is acceptable, based on the following considerations:

- Fitness for purpose – whether the method is suited to the original reason for monitoring, as shown, for example, by the limits and performance criteria for an installation;
- Legal requirements;
- Facilities and expertise – whether the facilities and expertise available for monitoring are adequate for the proposed method, *e.g.* technical equipment, staff experience.

SAFEGUARDING QUALITY

To safeguard quality of self-monitoring, several conditions have to be respected:

- Application of standard methods for testing, sampling, and analysis;
- Use of certified instruments and personnel;
- Use of accredited laboratories;
- Inspection of the self-monitoring systems;
- Occasionally, performance of independent external audits.

The choice of a measurement method may be constrained and/or informed if it is defined in legislation or recommended in a published technical guide.

3.5.7. Duration of self-monitoring

The total duration of a self-monitoring programme is often linked to the operating life of a process, particularly when the timeframe(s) for any harmful effects is short compared to the operating life. However, monitoring may sometimes need to start before a process has begun operating (*e.g.* to establish baseline ambient concentrations). Similarly, monitoring may sometimes need to continue after a process has ceased to operate if its harmful effects are more durable (*e.g.* monitoring of groundwater after closure of fuel depots, landfill sites, or nuclear installations).

3.5.8. Frequency of self-monitoring

The frequency of self-monitoring refers to the time between individual measurements or groups of measurements at a process or in a receiving environment. It can vary widely between different situations (*e.g.* from one sample/year to on-line measurements covering 24 hours/day). Monitoring frequencies can be divided into two main categories: continuous and intermittent.

Table 3-10. Summary of frequencies of regulatory sampling and self-monitoring for installations with integrated permits (major industry) in the United Kingdom[43] for air, water, and waste

Activity	Regulatory sampling			Self-monitoring		
	Frequency per year			Frequency per year		
	Min.	Max.	Typically	Min.	Max.	Typically
Air monitoring						
Stacks	0	3	1	1	12[g]	4[g]
Fugitive emissions	0	1	1[a]	0	1	<1
Water monitoring[b]						
Process water			None			None
Effluent	1	24[c]	12	NI 12 S/E&W 1	NI 365 S/E&W 12	NI 52 S/E&W 4
Surface run off	1	12		NI 12 S/E&W 1	NI 365 S/E&W 12	NI 52 S/E&W 4
Waste monitoring[d]						
Disposed on-site[e]	0	12	1	0	365	S/E&W Yes 12 NI - not normally required
Disposed off-site	0	12	1	0	365	S/E&W 12 NI - not normally required

Notes: E&W – England and Wales; NI – Northern Ireland; S - Scotland

a Visual assessment.

b Regulatory sampling is undertaken for water permits in the range of 4-52 times per year and typically 12. Self-monitoring is not normally required under this system but has been introduced for urban waste water treatment plants and may be extended to other sectors in the future.

c Maximum of 12 samples per year in NI.

d Under the Waste Management Licensing Regime the frequency of monitoring at waste sites reflects the risk posed to the environment but is on average 18 times per year. This is probably higher for the sites falling under the IPPC regime and may be as high as twice per week. Self-monitoring is also required.

e Frequency is highly dependent upon the type of process.

Source: Report on Project on Environmental Enforcement Practices (PEEP) in the United Kingdom, IMPEL (2001)

[43] For single media permitting, where self-monitoring is generally absent, *e.g.* water permits, the level of regulatory sampling is higher. Poor operator compliance history may lead to an increase in the level of regulatory sampling.

Continuous monitoring

Continuous monitoring involves an ongoing series of measurements that provide data with a high time resolution (e.g. readings from rapid-response instruments). The data are often available in real time (e.g. as instrumental read-outs or electronic displays) and so are useful for short-term process control purposes. Besides, continuous monitoring provides data that are statistically more reliable.

Continuous monitoring techniques may be relatively expensive compared to intermittent monitoring and the accuracy of on-line process analysers may be lower than periodic laboratory analyses. These techniques may be less necessary for very stable processes. Also, it may not be an option for some pollutants/situations because appropriate instruments for continuous monitoring have not yet been developed, or detection limits are too high to allow measurements without pre-concentration of samples (i.e. when samples must be accumulated over a period in order to be detectable).

Intermittent monitoring

Intermittent monitoring can be divided into four sub-categories:

1. **Intermittent periodic monitoring:** This involves measurements made at regular intervals in order to cover a defined part of the operating time of a process. It may involve spot measurements made at regular intervals, analysis of samples accumulated over regular periods, or instrumental data obtained at regular intervals during operation of the process. The periods of monitoring should be specified in advance (e.g. in a permit or legislation) and designed to be representative of the total operation;
2. **Intermittent response monitoring:** This involves measurements made in response to special events that are foreseeable but cannot be precisely scheduled (e.g. start-up and shut-down conditions, low and high utilisation conditions). The monitoring is done at irregular intervals. It is "routine" because the events to be measured can be anticipated but not their timing;
3. **Intermittent reactive monitoring:** This involves measurements made in reaction to special events such as exceeding of limits, which cannot be foreseen. The work is, therefore, devised on an ad-hoc basis rather than specified in advance, and is done at irregular intervals. Because of the nature of this monitoring, it may not be possible to specify the measurement methods in advance;
4. **Intermittent campaign monitoring:** This involves measurements made in response to a need or interest in obtaining more fundamental information than routine, day-by-day monitoring normally provides. The types of events that may trigger campaigns include evidence of epidemiological effects, and permit (license) applications for new processes where baseline monitoring is needed to aid assessments. Campaign monitoring usually involves measurements that are relatively detailed, extensive, and expensive, so that they cannot be justified on a regular basis. Examples are: sampling of dioxins in soil around incinerators; detailed specification of volatile organic compounds for odour or other investigations; studies to verify more conventional measurements and estimate uncertainties; eco-toxicological surveys; and fundamental research studies.

3.5.9. Approaches complementing or substituting direct measurement of emissions

Although specific quantitative determination of the emitted compounds at the source is more straightforward, direct measurements may not be appropriate when it implies a very high cost. Therefore in addition to direct measurement of emissions, several other approached to monitoring can be used: surrogate parameters, calculations, and emission factors. Table 3-11 introduces the key characteristics of these techniques, in particular their definition, advantage and disadvantages, as well as examples where such techniques may be used.

Table 3-11. Overall characteristics of indirect methods of emission measurement

Monitoring technique	Definition	Advantages	Disadvantages	Examples
Surrogate parameters	Measurable or calculable quantities that can be closely related, directly or indirectly, to values obtained through conventional direct measurements of pollutants.	– Greater cost-effectiveness; – Reduced complexity; – Larger number of data	– The need for calibration against direct measurements; – May only be valid over part of the entire emissions range; – May not be valid for legal purposes.	Furnaces: calculation of the content of SO_2 .
Calculations	Estimations based on theoretical and complex equations, or models that use physical/chemical properties of the substance (*e.g.* vapour pressure) and mathematical relationships (*e.g.* ideal gas law).	– Usually provide a reasonably accurate estimate if the model is based on valid assumptions	– Require validation; – Scope should correspond to the case studied; – Require data that are reliable and specific to the conditions of the facility; – More time consuming and complex than application of emission factors.	Prediction of SO_2 emissions, metals, and other emissions based on the application conservation laws, if the fuel mass flow rate is available.
Emission factors	Numbers that can be multiplied by an activity rate or by throughput data from a facility (*e.g.* production output, water consumption, etc.).	– Emission factors are largely available (*e.g.* EPA 42, CORINAIR, UNICE, OECD) – Can be developed for a specific process to estimate emissions when a company has several sites with identical processes.	– Require accurate "activity data" (which may not be the case when facilities try to hide their performance in order to avoid their fiscal duties); – Need reviewing and prior approval by the authorities; – Not for all pollutants; – Not for all processes.	Emission of some specific organic substances in textile, or pulp and paper industries.

Source: European IPPC Bureau (2003)

3.5.10. Reporting of self-monitoring data

The reporting of self-monitoring results involves summarising and presenting data, related information, and compliance findings in an effective way. Good practice is based on consideration of:

- The requirements and audiences for reports;
- Responsibilities for producing reports;
- The categories of reports;
- Scope of reports;
- Prescribed or good reporting practices;
- Data transfer protocols;
- Legal consequences of reporting;
- Quality considerations.

Self-monitoring requirements do not necessarily impose reporting on the facilities. Data generated could be stored at the facility for inspection upon demand.

Self-reporting requires facilities to report the data they generate to the regulatory agency. Depending on the characteristics of pollutants, receiving media and compliance history of the facility, reporting could be legally required to be performed:

- Periodically (monthly, quarterly, annually);
- Continuously through automated systems and electronic communication;
- In the case of incidents or accidents, or non-compliance in general.

The effectiveness of self-reporting as a compliance assurance tool is eroded when the inspectorate has limited capabilities for analysing self-monitoring data. It might even be counterproductive if facilities realise that the data they provide are not used in decision-making and do not produce relevant reactions, while costs of self-monitoring and the administrative burden of self-reporting are high.

3.5.11. Case Study: Self-monitoring requirements for large combustion plants in the EU

The European Union's Directive 2001/80/EC established the emission limit values for emission into air from large combustion plants. Permitting authorities should take these values as a basis for setting permit conditions. In fact it means that, in the case of large combustion plants, the permit should not contain any different self-monitoring requirements than those that are set by the Directive.

Article 12 of the Directive states that member states shall take the necessary measures to ensure the monitoring of emissions from the combustion plants covered by the Directive and all other values required for the implementation of the Directive. Member states may require that such monitoring shall be carried out at the operator's expense.

Article 13 states that member states shall take appropriate measures to ensure that the operator informs the competent authorities within reasonable time limits about the results of the continuous measurements,

the checking of the measuring equipment, the individual measurements and all other measurements carried out in order to assess compliance with the Directive.

Article 14 states that in the event of continuous measurements, the emission limit values shall be regarded as having been complied with if the evaluation of the results indicates, for operating hours within a calendar year, that none of the calendar monthly mean values exceeds the emission limit values. In the case of sulphur dioxide and dust: 97 % of all the 48 hourly mean values do not exceed 110 % of the emission limit values. In the case of nitrogen oxides: 95 % of all the 48 hourly mean values do not exceed 110 % of the emission limit values. The start-up and shut-down periods shall be disregarded. The rates of desulphurisation shall be regarded as having been complied with if the evaluation of measurements indicates that all of the calendar monthly mean values or all of the rolling monthly mean values achieve the required desulphurisation rates.

Competent authorities shall require continuous measurements of concentrations of SO_2, NOx, and dust from waste gases from each combustion plant with a rated thermal input of 100 MW or more. By way of derogation continuous measurements may not be required in the following cases:

- For combustion plants with a life span of less than 10 000 operational hours;
- For SO_2 and dust from natural gas burning boilers or from gas turbines firing natural gas;
- For SO_2 from gas turbines or boilers firing oil with known sulphur content in cases where there is no desulphurisation equipment;
- For SO_2 from biomass installations if the operator can prove that the SO_2 emissions can under no circumstances be higher than the prescribed emission limit values.

Where continuous measurements are not required, discontinuous measurements shall be required at least every six months. As an alternative, appropriate determination procedures, which must be verified and approved by the competent authorities, may be used to evaluate the quantity of the above-mentioned pollutants present in the emissions. Such procedures shall use relevant CEN[44] standards as soon as they are available. If CEN standards are not available, ISO standards, national, or international standards which will ensure the provision of data of an equivalent scientific quality shall apply.

Moreover, the sulphur content of the fuel which is introduced into the combustion plant facilities must be regularly monitored. The continuous measurements should include the relevant process operation parameters of oxygen content, temperature, pressure, and water vapour content.

[44] CEN is the European Committee for Standardisation.

CHAPTER 3.6
ENFORCEMENT ACTIONS AND REMEDIES

3.6.1 Framework for regulatory enforcement

In spite of all preventive efforts, environmental harm does occur, sometimes through intentional or negligent conduct, sometimes by accident. In order to deter wrongful conduct and remedy violations that take place, the law must determine appropriate enforcement actions and remedies. Legal systems must also indicate who should bear the loss when accidental harm occurs. Enforcement seeks not only to correct violations, it also creates an atmosphere in which the regulated community is stimulated to comply because the government has demonstrated a willingness to act when non-compliance is detected.

Several important points may be made about the framework for regulatory enforcement:

- The enforcement strategy involves both restorative and punitive tools, and it will be better to start with the restorative justice;
- It is absolutely essential to the credibility and thus to the success of the strategy that regulators are prepared to escalate sanctions where soft restorative action fails to achieve results;
- The penalties at the top of the so-called enforcement pyramid must be sufficiently serious and effective so that they do serve as a deterrent or to incapacitate the offender.

Government programmes are but one means of enforcement. In some countries, citizens and private groups are empowered by law to bring enforcement actions against violators. Insurance companies and financial institutions may require facilities to comply to be eligible for insurance or a loan.

Social norms can become an effective method of ensuring compliance in societies where there is strong social sanction for non-compliance. The public may choose to boycott certain products if they believe the manufacturer is harming the environment.

GOALS OF ENFORCEMENT

Enforcement mechanisms may be designed to perform one or more functions:

- Return violators to compliance;
- Punish and deter violators, and so prevent violations;
- Remove the wrongful gains from non-compliance and so maintain fair economic competition;
- Require that specific actions be taken to test, monitor, or provide information;
- Correct environmental damages;
- Correct internal company management problems.

Policy makers can strengthen government enforcement efforts by considering these other forces for enforcement when designing government programmes. For example, government officials may benefit by working closely with non-government groups on enforcement.

3.6.2 Enforcement response mechanisms

Enforcement programmes benefit from a range of response mechanisms and authorities, provided by environmental and related laws. Response mechanisms generally fall into the categories of informal or formal.

Informal mechanisms

Informal responses can include phone calls, site visits, warning letters, and notices of violations. Informal responses advise the facility manager what violation was found, what should be done to correct it, and by what date. The goal of informal action is simply to bring the violator into compliance or to initiate formal legal process. Informal responses themselves do not penalise and cannot be enforced, but can lead to more severe response if they are ignored.

Table 3-12. Summary of informal regulatory responses to given situations in the United Kingdom

Situation	Typical regulatory response	Conditions for more stringent action
Exceedence of the permit	Warning letter	Where exceedences are severe or persistent
Pollution incident	Phone call followed by a visit to the site[1]	Reflecting public response or environmental damage
Complaint	Phone call and if confirmed that the complaint is justified a site visit[2]	If the operator failed to take action to deal with the complaint then enforcement action would be taken
Maintenance	Letter requiring improvement	If the operator failed to correct any problems then enforcement action would be taken
Start-up	Phone call	If the start-up process took too long then enforcement action would be taken
Raw material change	Letter	If the period was outside the requirements then enforcement action would be taken

Notes: 1 In Northern Ireland, the response would be an investigation leading to enforcement action if justified and if the incident was significant or severe to prosecution
2 In Northern Ireland, the level of enforcement action would depend on the severity of the event giving rise to complaint, circumstances etc.

Source: Report of the Project on Environmental Enforcement Practices (PEEP) in the United Kingdom, IMPEL (2001)

This approach is effective when the actions needed for rectification are simple and do not require much time and that the violation does not represent an imminent danger to health or the environment. Moreover, it is best applied with companies who have an outstanding compliance history such that informal notification is likely to be respected. This type of response requires follow-up inspection after the specified period to ensure that the violation is rectified.

Formal enforcement mechanisms

Formal enforcement mechanisms are backed by the force of law and are accompanied by procedural requirements to protect the rights of the individual. Formal mechanisms are either civil or criminal as described below. **Civil actions** may be either **administrative** (i.e. directly imposed by the enforcement agency) or **judicial** (i.e. imposed by a court or other judicial authority). Civil remedies are compensatory (and also punitive if deterrence is to be maximised), usually through paying monetary penalties, and injunctive, ordering that the activity cease and repairs or clean-up be made. Powers to use formal enforcement mechanisms must be provided in environmental laws. The breach of a legal environmental requirement, even without measurable harm occurring as a consequence, can result in sanctions or remedies, just as infraction of speed limits can result in a traffic citation and fine even if no accident occurs. Except cases when government's policy is tolerating a first violation by regalatees under certain circumstances, penalties should be available and imposed in every case.

Administrative procedures include injunctions (civil administrative orders), fines, and refusal, suspension, revocation, or modification of permits. Proceedings can be initiated either by authorities, concerned individuals or companies, or by citizens'. Civil administrative orders are legal, independently enforceable orders issued directly by enforcement officials that define the violation, provide evidence of the violation, and require the recipient to take corrective action within a specified time period. If the recipient violates the order, programme managers can usually take further legal action using additional orders or a court system to directly force compliance with the order. What distinguishes administrative response from judicial response, defined below, is that the legal action is handled by an administrative system within the organisation responsible for implementing the enforcement programme. If the order is not complied with, further enforcement action will need to be pursued through the judicial system.

Formal responses to non-compliance:

- Changes in permit(s) conditions and suspension or cancellation of the permit(s);
- Financial penalties (fines), administrative or judicial, accumulating as long as the illegal situation persists;
- Attachment of property, facility shut down, or mandatory corrective actions, which may be required by administrative or judicial order (and may be effected by executive coercion, when authorities take remedial action at the expense of the offender);
- Criminal punishment, including imprisonment.

Civil judicial enforcement actions are formal lawsuits before the courts. Some countries rely exclusively on civil judicial actions to enforce environmental laws. Other nations have adopted both administrative and judicial mechanisms to carry out civil enforcement authorities. Where available, administrative enforcement is generally preferred as a first response (with some exceptions), because judicial lawsuits are far more expensive, require more staff time, and may take several years to complete. However, judicial enforcement has several advantages. It is often perceived as having greater significance and therefore has more power to deter potential violations and to set legal precedents. Also, the courts are often uniquely empowered to require action to reduce immediate threats to public health or the environment. Thus, judicial enforcement can be essential in emergency situations. The courts also play an important role in enforcing administrative orders that have been violated, and in making final decisions regarding orders that have been appealed.

Criminal judicial response is generally considered appropriate when a person or facility has knowingly and wilfully violated the law (criminal intent), or has otherwise committed a violation for which society has chosen to impose the most serious legal sanctions available. While criminal response can be the type of enforcement most difficult for the inspectorate to accomplish, it can also create the most significant deterrence since it personally affects the lives of those who are prosecuted and carries with it a significant social stigma.

Criminal cases require intensive investigation and case development. They require a higher degree of proof that a violation has occurred; in the United States, this higher degree of proof is expressed as proof beyond a reasonable doubt (much greater than a probability but less than an absolute or scientific certainty). A criminal case may require proof of additional facts or elements, such as proof of criminal intent. Specially trained criminal investigators may be necessary to develop criminal cases. The ability to apply criminal enforcement in environmental cases depends on a country's legal system and on whether appropriate authority is provided in environmental or other laws.

The concept of restorative justice[45]

The concept of restorative justice implies that "when organisations do fail to comply in the first instance, a compliance-oriented regulatory approach will attempt to restore compliance rather than reverting

[45] Restorative justice is a term, placed at an interface of law and sociological science, used mostly in the United States, Canada, and Australia. It refers to bringing together victims, offenders, families, community members, law people, and others into a voluntary process that can help both victims and offenders. When the process works, it greatly contributes to prevention by making offenders less likely to repeat.

immediately to a purely punishment-oriented approach. [In the case of corporate lawbreaking] the aim of restorative justice is to restore enterprises to a position where they have both the capacity and willingness to comply after they have committed a breach. It is therefore an important tool for regulators to use in responding to compliance failures."[46] There is good evidence that the restorative justice approach is effective to corporate lawbreaking.

In the environmental context, there are several opportunities for restorative justice. For example, the environmental regulator can induce additional compliance by reducing penalties it has levied against a corporation in return for the firm's agreement to undertake additional actions to protect the environment. Similarly, the USEPA will forego "gravity based" (punitive) civil fines and will not recommend prosecution against a company which voluntarily reports and corrects environmental offences it finds through an audit programme.

Negotiated settlements[47]

As another example of restorative justice (incorporating the core elements of wrongdoing, shame and reintegration), negotiation provides an opportunity to reach a solution that satisfies all parties and ensures the commitment of companies to compliance. However, what usually brings the companies to negotiation is the implicit or actual threat of implementing enforcement measures. The negotiation approach can create a cooperative and transparent relation between the companies and the authorities. Negotiations will enhance the image of regulating authorities because companies will appreciate that the concerns and difficulties they encounter in achieving compliance are being taken into consideration. Moreover, the resulting settlement will alleviate the inspection load on the authorities for such companies since their inspection will only be limited to follow-up of the action plan progress.

It is important to note that compliance with the law is not negotiable – the regulatee must comply. The only thing being negotiated is the steps that the regulatee will take to return to a state of compliance with the law and to ensure that the violation does not recur.

Negotiated settlements offer the regulatee and the regulator an opportunity to agree on such things as, for example, the regulatee's commitment to set up better monitoring mechanisms, improve pollution prevention or pollution control measures, or changes to the production process to reduce the possibility of future offences. Negotiated settlements can also specify the type of corrective measures that the regulatee will take to clean up environmental damage resulting from the offence or the restitution that the regulatee will offer. Settlements can include a time frame for the regulatee's actions, a requirement to file status reports with the regulator, and a list of specific consequences if the regulatee fails to live up to the terms of the settlement. Although there are no empirical data on the impact of voluntary compliance plans or agreements on compliance levels, a qualitative evaluation suggests that compliance plans can have a significant impact on lessening the cost of achieving compliance, if they are used with care.

The negotiation process should involve concerned parties including the affected community and/or representative non-governmental organisations. The settlement should be included in an official document formalising a binding agreement that should be respected. This document could have different names including settlement, administrative consent order, or judicial consent decree depending on the traditions of each country, and the process through which it is formalised. The agreement document should include fixed obligations, time schedules, and penalties for non-compliance to maintain a constant pressure for compliance.

[46] J. Braithwaite, "Responsive Business Regulatory Institutions" in Cody, C. & Sampford, C. (eds), Business, Ethicsand Law, Federation Press, 1993.

[47] These are different from voluntary agreements, which go beyond regulatory compliance.

In Canada, the federal government, consistent with the principles of restorative justice, has sought to amend the Canadian Environmental Protection Act to include negotiated settlements as part of an integrated approach to compliance and enforcement. Such settlements: "were intended to be agreements reached between a regulatee and a regulator to increase compliance and decrease the need to prosecute or seek an injunction. The settlement was to be made after the regulatee had been found to have broken the law. Instead of prosecuting or taking another enforcement action, the regulator negotiates with the regulatee to identify the steps that the regulatee will take to ensure that another violation will not occur. The agreement takes as a starting point that the regulatee will correct the violation."

Liability for environmental damages[48]

Liability rules serve a dual purpose in environmental management. First, in the event of an accidental release of hazardous pollutants into the air, water, or soil, liability rules elaborate the polluter's responsibilities for compensating victims (assessing damages to third parties), cleaning up the release, and compensating the state as trustee for the environment (assessing damages to natural resources). Second, liability rules may encourage facilities to invest in pollution control and prevention, even if not required by the regulation.

However, for a nation to opt to rely only on a liability-based regime is to choose always to wait until damage has occurred. Modern regulatory practice seeks to prevent environmental damages before they occur, and in a modern regime the need to seek environmental damages based on liability is to be relied upon only as a supplement where the regulatory regime failed to prevent the damage.

Escalation of sanctions and the enforcement pyramid

A good way of achieving an optimum mix of persuasion and coercion, of compliance and deterrence, is through the implementation of a regulatory enforcement pyramid. Under this approach regulators start at the bottom of the pyramid assuming virtue - that business is willing to comply voluntarily. However, they also make provision for circumstance where this assumption will be disappointed, by being prepared to escalate up the enforcement pyramid to increasingly deterrence-orientated strategies.For example, an enforcement pyramid might begin with the provision of advice and formal directions, move to the issuing of administrative notices, and on-the-spot fines, and then escalate to prosecutions with increasingly serious consequences. As Braithwaite points out, "a paradox of the pyramid is that the signalled capacity to escalate regulatory response to the most drastic of measures channels most of the regulatory action to the cooperatives base of the pyramid. The bigger the sticks at the disposal of the regulator, the more it is able to achieve results by speaking softly."

Box 3-11. The order of enforcement priorities: Recommendation for the Rostov oblast of the Russian Federation on the enforcement of environmental tax collection

Based on international good practice, the OECD/EAP Task Force Secretariat provided recommendations on how to order priorities in the use of enforcement tools as applied to environmental tax and charges collection. Fundamentally, it is based on an escalating level of values that puts "money" on the lower end of the scale of importance (and the usual beginning point of enforcement), with "property" next, and the "person" at the high end. In other words, actions that seek compliance are ordinarily prioritized as the attachment of money first, the attachment of property second, and the attachment of the person himself (a jail term) third.

Seriousness of the offence is implied in this escalation. Most enforcement activity is at the lower end of the values scale and involves the "attachment" of money. However, these are not definitive rules, and frequently enforcement tools are used to reach money and property at the same time.

[48] See more about environmental liability in the EECCA region in the OECD/EAP Task Force publication "Developing Effective Packages of Environmental Policy Instruments in Eastern Europe, Caucasus and Central Asia: Experience and Directions for Reform" (2003).

Money: Since Russia relies on pollution charges and natural resource fees as the main economic instruments to manage environmental impacts, timely and regular payment by the regulated community of large sums of money is a constant compliance concern. It should be emphasized that the larger public sector firms are the main debtors, while many smaller enterprises do not owe any debt. Thus, while the total delinquent amount remains unacceptably high, Oblast enforcement officials can focus on a relatively small number of delinquent enterprises. The enforcement tools of choice for "attaching" money are the following: (1) Bank Order; (2) Freeze Bank Account; (3) Debt Re-Structuring; (4) Bankruptcy.

Property: Usually, the attachment of property is simply a means of satisfying a money debt. Thus, in a true attachment scenario, property that is secured by legal process may be sold to satisfy the debt. However, the power to attach property or the power to de-value property is also a powerful enforcement tool. Even the threat to exercise this power can have salutary effects. The threat may be used as a negotiating tool, but the government administrators should not ever make empty gestures. If the condition being sought is not implemented, the government should not hesitate to impose the sanction. The enforcement tools of choice for "attaching" property are the following: (1) Attachment of vehicles, equipment, raw materials, buildings, etc.; (2) Temporarily suspend or cancel environmental permit or license.

Person: Attaching the "person" of the debtor is the tool of last resort. It is a criminal prosecution for intentional misconduct where the freedom of the accused person is at risk. The wrong behaviour that is the subject of this sanction is more than the mere owing of money. It contemplates the evasion of the payment of money owed and/ or the act of fraud in so doing. The implementation of this single sanction will get the attention of the regulated community. Since it has the potential to take away one's freedom, it is considered the most severe sanction. In western countries, it has been extremely effective. It is used to prosecute enterprise officials at the very highest levels, and on average results in a prison sentence of one year (and often a personal fine as well).

Source: OECD, CCNM/ENV/EAP(2002)1.

3.6.3 Use of monetary penalties

A monetary penalty (*i.e.* fine, damage compensation) will be the punishment available for the largest number of ordinary violators. A penalty that is too small will just be seen as a cost of doing business as usual and will not necessarily improve behaviour toward the environment. Only a large monetary penalty[49] can be a strong incentive to compliance by making the violator pay far more than was gained by the non-compliance. Key elements of monetary penalties designed to bring compliance are shown in Box 3-12.

It is essential to the reputation of the inspectorate that it documents its decision-making policy for monetary penalties, which should be applied in a fair manner, based on sound economics, effective, and widely perceived to be so. Each case file should have a complete presentation of the penalty calculation upon quantitative (mathematical and economic) factors wherever possible and also qualitative (judgmental) ones. It should justify exactly how the monetary amount was initially assessed, reduced (or increased) as a result of negotiations, and finally agreed to, all within the internal inspectorate's rules governing monetary settlements. Each settlement should be publicly available and the subject of a press release.

In some countries, for example in Poland[50], fine suspension systems have been introduced. These systems assume that the main objective of a fine is to stimulate environmentally sound behaviour and corrective actions by the offender. If the offender takes upon him the obligation to implement within a specified time a project to eliminate the cause of the sanction imposed, the fine may be temporarily suspended. Should the goal be achieved within specified time limits, the fine is cancelled if it is lower than the investment costs. If the fine was higher the offender pays the difference only. Thus, the fine suspension system "converts" sanctions into investments.

[49] In the United Kingdom, the sum of monetary penalty imposed by the Crown Court/High Court may be unlimited. Fines may only be imposed by a court and are not directly applied by the agencies.

[50] Panek-Gondek, K., Experience of the Inspectorate for Environmental Protection in Implementation and Enforcement of Environmental Law in Poland. http://www.inece.org/conf/proceedings2/23-Inspectorate.pdf

Box 3-12. Principles of setting a monetary penalty to assure compliance

(1) Recovering the "wrongfully gained economic benefit of non-compliance" is a key goal and the minimal, first element of a penalty that is fair. To recover the economic benefit is to require the violator to repay as a part of its penalty the value of whatever unfair competitive advantage that it wrongfully enjoyed. Typically this is calculated as the interest value of the capital cost of pollution-prevention or control equipment, plus the unspent cost of operating and maintaining it, over the time since the requirement became effective that the violator wrongfully failed to install, operate, and maintain controls. It should also include the recovery of any avoided official charges or taxes that would have been imposed for allowed levels of pollution during the period of evasion and non-compliance. With this "compensatory" element of a monetary penalty, the authority has restored the level and fair competitive playing field to which all enterprises in the sector are entitled. But it has not created any deterrence.

(2) Assessing also the "punitive" element of a penalty is to provide the deterrence. It may be developed from considering the breadth (scope), intensity, and duration of violations, and then adding any aggravating (and mitigating) factors. Aggravating factors, for example, include whether this is a repeat offence, whether the enterprise is operating altogether without a permit, the presence or likelihood of environmental damage, or false statements to the inspectorate. These factors may all be linked in a matrix to monetary amounts developed considering also any penalty amounts established in the legislation creating the requirement violated.

The resulting total of (1) and (2) should be a substantial sum that far exceeds the economic benefit of non-compliance if there is present a strong balance of aggravating factors. Only such a large penalty will make the polluter pay enough to deter non-compliance as uneconomic. Without the likelihood of such a large penalty, there is no incentive for an enterprise to achieve compliance until official detection of the violation.

(3) Considering ability to pay is the third element of a penalty policy. An enterprise with marginal profits may be able to produce financial records that prove that it cannot afford both to correct its violations and to pay a large penalty. A penalty may force it to close and cause unemployment. In such cases, at least (2) the punitive portion of the penalty may be eliminated or reduced. Of course, the inspectorate will want to obtain strong commitments that the violations will end with the violator coming into compliance and staying compliant.

An enforcement authority unwilling to impose such penalties, and (after reducing a penalty because of proven inability to pay) unwilling to close a facility that cannot afford to control its violations, risks allowing business as usual for many enterprises that will not protect the environment. If for such a facility there is no subsidy available, it should be ordered closed or prohibited from operating while violating. Assuming that the legal requirement is economically feasible for most enterprises in the sector, a clean competitor will take the place of a dirty enterprise that is closed because it can only operate in violation of the law. Without such action, unfair economic competition from dirty enterprises will force clean competitors to go out of business, leaving only lawlessness and environmental degradation.

Source: Principles for effective environmental enforcement authorities in the New Independent States, OECD, unpublished (2002).

3.6.4 Administrative coercion

If the offender does not use the opportunity, given by the inspectorate, to rectify a situation of non-compliance, in many OECD countries the inspectorate has the legal authority to intervene and have the offence remedied at the offender's expense. This approach in the European Union is called "administrative coercion". It offers the benefits of ceasing the offence and reversing its effects.

Most often, this approach is used if the penalty decision or an official order to remediate environmental impact of an offence does not have or has not had the desired effect. If environmental hygiene of public health are seriously at risk, the administrative coercion is used immediately. Also this tool can be applied immediately after an offence is discovered if the offender turns out to have insufficient financial means.

As mentioned, coercive actions are taken at the offender's expense. To this end, where possible, competent 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 inspectorate can take action by making use of private funds guaranteed. Where there is no such contractual guarantee, the inspectorate may file a civil suit to recover any costs to the tax payers of funding the remediation. In any case, inspectorates must be guided by strict and transparent procedures when applying this enforcement response, so as misuse of powers and public funds is prevented.

Cost recovery powers in England and Wales

"The Environment Agency may undertake works or operations to prevent or remedy pollution (…) itself in an emergency. In these circumstances, the Agency will seek to recover the costs of undertaking such works or operations from the person who caused or knowingly permitted the actual or potential pollution.

Source: Guidance for the Enforcement and Prosecution Policy (1999)

3.6.5 Specifics of combating environmental crime

Some specific types of human behaviour can indicate criminal conduct. These include clandestine or evasive behaviour (lies, denial of site access, flight), destruction of evidence (including threats to witnesses), danger to the public health or environment, and the need for a physical arrest (where destruction of evidence or escape is likely). Even in countries and in environmental inspectorates where there is a cultural and natural reluctance to "criminalise" environmental offences, there will be cases when the police powers to arrest and imprison must be used.

Elements that define a crime

Depending on national jurisprudence, a criminal case may have legal elements in addition to those of an administrative case. These elements may include a culpable mentality (perhaps called "criminal intent"), the absence of any reasonable or plausible excuse, and proof of such culpability "beyond a reasonable doubt" or to another higher measure than what is required in a non-criminal case. In many or all other respects, the administrative offence may have the same elements as the criminal offence, *e.g.* the offence of "discharging a pollutant in excess of allowable limits (or without a permit)" may be either criminal or civil. Therefore one important issue is clearly distinguishing negligence and criminal intent, because the decision on choosing the administrative or criminal path of justice will often depend upon this.

In addition to the legal elements that define a crime, inspectorates and police agencies may find it helpful to define as a matter of policy, additional factors to govern official responses. These policy factors may not be found in legal acts, but may be taken from human experience in defining any crime. Factors may be aggravating ("incriminating") ones tending to show criminality, or mitigating factors tending to show the non-criminal, or administrative nature of the offence. While there may be no clear number or weight of factors, and thus no "bright line" for drawing distinctions, the presence of such aggravating factors has proven helpful in assigning leading investigative responsibility to the police and in making the decision to seek criminal prosecution at the conclusion of the an investigation.

Aggravating factors

Aggravating factors (in addition to the requisite "criminal intent") may include:

- Measurable or discernable environmental effect of the offence – actual, threatened, or likelihood of, harm to the environment, public health, or persons (death or bodily injury);
- Likelihood of such harm as there is a discharge, release or emission (exposure to the environment of a polluting "substance", as compared to a "mere paperwork" inadequacy not involving falsity);

- Said substance is of a toxic or hazardous nature (rather than a conventional or ordinary pollutant);
- Economic cause (motivation of greed inherent in the misconduct, to profit unjustly or excessively) or effect and scope of disruption (*e.g.* evacuation, shut down of employers of public utilities, expensive clean-up);
- Persistent, ongoing, or repetitive nature of the offence (or other evidence of reckless disregard for the public interest);
- History and attitude of the offender, including repeated, previous offences and failure to obey orders to comply;
- Presence of other routine or traditional means or elements of criminal misconduct (*e.g.* attempts to improperly influence government by means such as false documents or statements submitted to government, deceit, concealment of misconduct, obstruction of investigation, threats/extortion or inducements/bribes to witnesses or officials;
- Links to other criminal groups or purposes (*e.g.* illegal drug production, smuggling, or terrorism);
- Strength of the evidence and provability of a crime beyond a reasonable doubt.

Institutional aspects

For dealing effectively with criminals, inspectorates should have routine access to police who have built up the specialized skills needed for environmental investigations (and who are not immediately redeployed to other, non-environmental cases). Legitimate possibilities include:

- Working relationships with police so that they are prepared and dedicated to combat environmental crime and team up with inspectors when environmental crime occurs;
- An established cadre of environmental police located within the environmental inspectorate;
- Providing plenary powers to environmental inspectors themselves, including police powers to be exercised when necessary.

Two common approaches are: (a) investigation and gathering of evidence by environmental inspectors, with ulterior involvement of police forces, when required; and (b) forming a working team with police from the very beginning, if the case is more serious.

Gathering information in a criminal investigation

Environmental legislation is not always clear-cut, and it can be difficult to identify offences that often take place alongside legal activities. Compared to the traditional branches of crime, environmental informants do not typically have a criminal background, but come from the industry and from the public citizenry. Relevant information may be scattered over a number of sources and governmental authorities.

Most investigations will start with information that is received from sources of information in the following categories:

- Third-party witnesses -
- Neighbours – these sources often provide information on non-compliance behaviour that can be observed physically as something visible, tangible, audible or that it can be smelled;

- External business competitors, who have reason to suspect and to resent the unfair business advantage enjoyed by the apparent violator;
- Internal employees (former or present), sometimes called "whistleblowers", who are offended by the non-compliance or who are disgruntled for other reasons;
- Routine inspections and official files (*e.g.* records of facility performance, criminal "intelligence" files).

In a criminal investigation, there should be extra preparation before evidence is gathered from witnesses and by a "police check" that is not routine. The suspected violator may be an enterprise that is big, highly polluting, clandestine, or devious, perhaps connected to organized crime, and likely to be socially powerful and well defended. The criminal investigation team (combining environmental police and inspectors) must plan to gather its evidence in a way that prevents unnecessary injury to person or property. At the same time, the team's actions must be sufficient to overcome any resistance from the subjects of the inspection and to assure that evidence is not destroyed before it can be collected.

To begin, the team – without exposing the existence of its investigation – should gather evidence from public sources or property, from confidential informants and cooperating witnesses, and by consent if private property must be entered. The most difficult phase will come when evidence must be gathered by entry into private property without the consent of those persons who possess evidence. They may be involved in environmental crime, and they may object or resist the inspection. Consistent with national laws, the inspection team must obtain in advance the legal authority and any case-specific approval needed to make an unconsented entry, to overcome all resistance with the least force necessary, and to assure that relevant evidence is taken into custody before it is destroyed or disappears for any reason. In addition to rules conditioning the physical entrance by police onto private property, there may be special rules affecting police access to financial and other records in the hands of third parties, to mail, telephone, and other communications.

Once all legal requirements have been met, the police inspection team must plan and rehearse the unconsented entry, search, and seizure of evidence of crime. Good procedure will include steps such as:

(1) Announcing and identifying the search team and its authority at the door and allowing a few moments for it to be opened;

(2) If necessary, the police forcing entry and arresting any who would resist or flee;

(3) Interviewing any employees or other witness present who will talk (as many will);

(4) Inspectors sampling and collecting evidence in any form in which it may be found.

As national law may require, the search team may give an inventory and receipt for any items seized, and also give a split sample of any substance seized for chemical analysis so that the enterprise searched may do its own analysis.

The police inspection will reveal the criminal investigation to the suspects. National law may provide special rules for the ongoing interrogation of witnesses who are unwilling or reluctant and who may become defendants in the criminal case. With the guidance of legal counsel for the government, the investigators must not fail to respect any legal right or scientific truth. Failure may jeopardize the success of the entire investigation, should a judge exclude key evidence as gathered incorrectly, or dismiss an entire case as incompetent to come before the court.

Necessary knowledge and skills

The nature and size of the team needed to investigate an environmental crime will of course depend on the complexity and seriousness of the matter. Specialists will be needed at least in these areas:

(1) Police;(2) Experts in appropriate disciplines of science, technology, and sometimes engineering; 3) Lawyers (both environmental and criminal); and (4) Financial analysts (accountants, and sometimes economists). How these specialists interact, and the legal and scientific rules governing their work, should be elaborated in a national environmental inspections manual for both consented and unconsented inspections. So that an inspectorate will act properly in collaboration with police or using its own police powers, this manual should be taught as part of the training, both basic and in-service, for environmental inspectors and police.

In addition to learning one's own speciality, there should also be cross training between police and technical experts who are inspectors. Inspectors must receive some training in the roles and techniques of police who would safeguard citizens, inspectors, and the police themselves from possibly dangerous environmental criminals while gathering evidence consistent with legal requirements that must be met so that the evidence may be used in prosecutions. Conversely, police assigned to environmental crimes must receive some training in the technical aspects of environmental violations, how to avoid dangers from toxic chemicals that may be on-site, and what inspectors would do to take samples and otherwise gather evidence of a specialized nature. Where environmental inspectors themselves possess plenary powers (including police powers to be exercised when necessary), of course the inspectors must receive full training in both roles so that they become fully integrated.

A second type of training, which may be called "police-awareness training", may well be targeted to the non-environmental police performing day-to-day police functions. The purpose of this training is to provide a quick overview of typical environmental offences and to provide contacts to the environmental authorities. A typical police officer should be educated and sufficiently aware to recognize an environmental offence. The officer should know to call the environment inspectorate or specialized environmental police to undertake an investigation that is likely to be more technical than the typical police officer is trained to handle. In this way the environmental inspectorate can expand exponentially the detection of environmental offenders without additional costs.

Whenever possible, any training should be open to colleagues in other units of government who may cooperate including especially those of adjacent jurisdictions and nations. Joint training is an excellent basis for establishing shared expectations and personal trust that will be the basis for future cooperative case development.

Conclusion of the environmental criminal case

In those criminal investigations that conclude without prosecution, the police should always debrief with, and return the file to, the environmental inspectors. While a criminal case may not have been possible, an administrative case may be quite feasible. In any event, during the police investigation suspicions may have developed that should be known to environmental inspectors as they continue their routine compliance monitoring. A police agency usually should make available in this way its file to the inspectorate; only if there exists or is the likelihood of an active, ongoing criminal investigation would the police retain exclusive access to the file.

Where a criminal case concludes in favour of the public authorities, the police and the inspectorate should cooperate to obtain an outcome leading both to desirable environmental results as well as the deterrence and punishment of criminals. In addition to conventional, punitive outcomes in criminal cases (fines and imprisonment), it should not be overlooked that a criminal-court judge may also order innovative sentences designed to achieve environmental improvement. For a criminal defendant willing to reform, the most desired conclusion of the case will likely be manifested in an agreement or requirements imposed at sentencing to clean up, correct, or remediate the past violations that gave rise to the offence, and to detect and prevent future violations. Just as when an administrative case concludes, crafting the environmental and management measures needed to achieve the intended results will require the

expertise not of police but of environmental specialists within the inspectorate. Then in post-sentencing follow-up, there will likely be a programme of environmental inspections to assure compliance with the understandings reached at the conclusion of the case.

Where the violator agrees to come into compliance, a punitive sentence may be suspended, or a fine or other punishment may be mitigated (reduced) conditioned upon the future performance of environmentally desirable behaviour. Where the violator further opts to agree to and performs additional corrective measures beyond those specified in the law, a punitive sentence may be waived altogether as the incentive to do more law than the law requires. The rules for assessing (deterring all) and then reducing (sometimes altogether waiving) penalties (providing incentives only to those truly reform-minded), including for "fine suspension systems", should be very carefully written and administered to achieve the desired behaviours.

By taking the foregoing measures, an environmental inspectorate should be fully prepared to combat environmental crime, and to integrate its role with the functions of the police who must be its day-to-day partners and team members in this work.

International cooperation to combat environmental crime

The importance of cooperation between authorities at all levels has been proven in everyday practice. Officials from different government organisations find that they need each other's information and expertise. In the international context, cooperation in fighting environmental crime takes place through Interpol, the International Criminal Police Organization[51].

Of no less importance will be bilateral contacts between inspectorates in neighboring countries. These are crucial everywhere for effective cooperation in fieldwork where a wrongdoer is using a governmental border as a shield to detection or culpability. If a nation is to protect itself from environmentally harmful imports and to fulfill the growing list of international environmental obligations attending certain exports, the inspectorate will need a close working relationship with its own border control forces (including customs, coast guard, and border patrol agencies).

3.6.6 Balancing criminal and administrative approaches

In part because of the absence of a "bright line" for criminality, it often proves difficult to achieve cooperation between authorities that fight non-compliance with environmental legislation. Especially in dealing with environmental crime, cooperation is a must. To begin, an inspectorate therefore must include its police in a spirit of teamwork.

In each case where there may be any doubt, the decision whether to investigate an environmental offence with a police lead or with an inspectorate/administrative lead should not depend on who answered the initial phone call from a member of the public providing the tip or lead to wrongdoing. Instead, all new investigations should first be screened by a group of supervising environmental police and inspectors. In a collegial process, considering competing priorities and available enforcement tools, they should assign each new investigation to the most appropriate staff. There should be a process for reconsidering this initial decision continuously, and certainly at any time when the investigation develops (or fails to develop) facts suggesting a reconsideration (or confirmatory facts). At the conclusion of an investigation, there should be a management evaluation to decide whether to refer the case for filing in the criminal court or the administrative court.

[51] The general secretariat of the Interpol headquarter is in Lyons, France (200, Quai Charles de Gaulle, telephone number (+) 33 4 7244 7000, fax number (+) 33 4 7244 7163).

In the absence of aggravating factors and where imprisonment would be an excessive punishment, an inspectorate should carefully consider and avoid using police powers and the national courts to which criminal cases usually must be taken. Use of the police is likely to be more intrusive and expensive, and to entail a more thorough investigation (to develop proof beyond a reasonable doubt) than is needed to prove only the likelihood of a violation that is ordinary (lacking aggravating factors indicating criminality). Use of the national courts may involve overly complex and slow procedures, and expose the inspectorate's routine cases to judges who may regard them as trivial.

For the inspectorate's ordinary environmental cases, many of which may be small, simple, and lacking aggravating factors, inspectors need not be police and judges may be specialized and without plenary powers. In some countries, for example in the United States, investigators may well present their cases to a cadre of lower-level, administrative judges dedicated to resolving ordinary environmental offences. Such judges typically would not be able to order arrest or imprisonment, and the cases they would hear would not be criminal cases. However, these administrative judges would have expedited procedures and authority sufficient to correct and deter most environmental violations. Necessarily their powers would include the power to revoke or suspend environmental permits, to shut down a facility that persists in operating in non-compliance, and the power to impose punishment in the form of fines.

Sometimes additional authority is needed, such as the power to order the clean-up of contamination, and to enforce an order to shut down, or to pay a penalty. If the administrative authority is insufficient, then there should be provision for the inspectorate to obtain additional relief quickly and in the national courts. Where imprisonment is not a realistic possibility, judicial relief should be available to the inspectorate – still without invoking the police or the criminal courts in the absence of sufficient aggravating factors indicating criminality.

3.6.7 Admissibility of tolerating non-compliance

Just as important as achieving and maintaining the balance between administrative and criminal enforcement is the balance between any enforcement and no enforcement. Condoning (active or passive), which is the act by the competent authority to tolerate an illegal situation, does deserve mention so that it is not overlooked as the legitimate antithesis of a criminal or an administrative response, although not any legal regime allows the application of this tool by the inspectorate.

Active condoning (amnesty) means that the competent authority explicitly makes clear in writing to the offender that no enforcement action will be taken against a certain breach of law. Active condoning is allowed only under strict conditions and will usually include a requirement that the situation of non-compliance ceases within a specified period of time and/or that specified actions are taken.

This tool may be appropriate where no aggravating factor is present, and furthermore where the inspectorate has publicly announced the mitigating factors that merit forgiveness. Furthermore, it will be appropriate only for violators who have themselves:

(1) Identified, reported to public authorities, and cleaned up violations;

(2) Established effective programmes to prevent, detect, and do likewise as to future violations;

(3) Done all in accordance with strict time lines and other requirements of an amnesty programme.

Passive condoning means that the illegal situation is tolerated without any action of the competent authority towards the offender. Passive condoning is not allowed, and officials can be brought to justice in cases where they allow passive condoning.

Box 3-13. Curbing tolerance policy, tightening up enforcement in the Netherlands

According to the Inspection and Enforcement Strategy of the Province of Limburg, tolerance (*i.e.* condoning, acceptance of non-compliance) should be exercised only temporarily and in exceptional circumstances. Province's policy on condoning was set out in the 1992 "Tolerance Policy" document and updated in 1997. Following the national-level guidelines, the province's inspectorate uses this tool only under strict conditions and in the following circumstances:

- In the event of force majeure, *i.e.* circumstances beyond the control of the offender;
- In transitional situations (*e.g.* when rules and regulations are pending that will permit certain activities that are as yet illegal, or if the part of a permit is cancelled while a new permit is being prepared);
- if strict enforcement leads to a situation that is harmful for the environment (*e.g.* ceasing waste processing activities because the permit is not yet ready).

In situations where the inspectorate tolerates non-compliance, an explicit decision is taken to that certain conditions are attached (active tolerance). Such a situation will, as a rule, be allowed to continue no longer than six months and will only apply to situations that can, in principle, be legalised. Passive tolerance is not allowed. Passive tolerance is socially and politically unacceptable, and active tolerance should be kept to a minimum.

The Strategy states that the culture of negotiation and tolerance must be curbed by setting out a clearly defined enforcement policy, which can serve as a form of commitment for administrators, as a transparent set of guidelines for enforcement agencies, but also as a policy for which the province authorities can be held accountable by society. The counterpart of tolerance is strict enforcement, intended to take quick and consistent action against offences and maintain uniform and transparent working methods.

Source: Inspection and Enforcement Strategy of the Province of Limburg, The Netherlands (2002).

3.6.8 Enforcement strategies of environmental inspectorates

An enforcement strategy describes – in a logical sequence and often in the form of a flow chart – the general steps to be taken by inspectors in case of non-compliance. The strategy generally covers various mechanisms of response and includes formal and/or informal tools.

Enforcement strategies do not focus on one category of industry or on one type of activity. They have a general validity in order to create a uniform approach towards offenders in more or less similar situations. They help focus the work of inspectors; also they make transparent what reaction the regulated community may expect in cases of non-compliance.

Annex 3-4 presents the **Enforcement and Prosecution Policy of the Environmental Agency of England and Wales** (United Kingdom), which is a good example of how the inspectorate could communicate its ends and means of enforcement to the regulated community and the general public. Among other things, this document declares the principles of enforcement and prosecution: proportionality and firmness, stringency and fairness, consistency and transparency. Such an approach strengthened the agency's role towards the regulated community and the public, including the position and credibility of its inspectors.

Through the development of enforcement strategies, the use of enforcement powers becomes more targeted, not only towards small offences, but also to complicated offences, which involve significant economic or social repercussions. A strategy will need to concentrate on eliminating the most serious environmental problems instead of the less serious ones. For example, in many countries, the powers to close down a company may nowadays be rarely used due to some external pressures. On the other hand, the right to suspend the use of a vehicle, which does not conform to the environmental

norms, may be used frequently. This kind of strategy is not likely to establish public trust and the rule of law.

Enforcement strategies are approved by policy-makers, after preparation by inspectorate managers and their staff in close co-operation with other authorities. In the case that other authorities besides the inspectorate have also enforcement powers, the inspectorate preferably inserts in its strategy that it will liaise with that authority, to ensure effective co-ordination, to avoid inconsistency, and to ensure that proceedings used are the most appropriate for a certain type of offence.

Key characteristics of enforcement strategies

- **Proportionality** – enforcement actions will be proportionate to the risks posed to the environment and the seriousness of the breach of law;
- **Consistency** – similar approach in the use of powers and decisions in similar circumstances to achieve similar ends;
- **Transparency** – it helps the regulated community and others to understand what is expected of them and what they should expect from authorities;
- **Firmness** – a firm approach sets the limits of the flexibility in an enforcement strategy. The limits should be fair and stringent;
- **Fairness** – the public and the regulated community generally support fair actions and disagree with unfairness. Fairness helps to establish the rule of law and thus of environmental improvements.

The elements to be inserted in an enforcement strategy will be determined by the national legal framework and powers accessible to inspectors in individual countries. There is a range of powers of environmental inspectors that may be useful for an enforcement programme:

- Impose a schedule for compliance;
- Permanently shut down part of an operation;
- Temporarily shut down certain parts of operations or practices;
- Permanently or temporarily shut down an entire facility;
- Deny or revoke a permit;
- Require a facility to clean up part of the environment;
- Emergency powers to enter and correct immediate dangers;
- Seek compensation for damage caused by the violation;
- Appeal court decisions on environmental cases, if there is a reason for that.

For example, in the United Kingdom, the inspectors involved in permitting and inspection are also involved in enforcement and support prosecution cases. There are standard procedures for initiating enforcement actions that guide inspectors in their actions. In Scotland, where the powers of enforcement are different (see Table below) there is also guidance on the preparation of documents and the submission of cases (Winning Your Case, Quality Manuals and Reports to the Procurator Fiscal: A guide for non-police reporting agencies). These documents all provide a decision-making framework on enforcement action, but an actual decision is taken on a case-by-case basis by inspectors and their line managers.

Each environmental (and enforcement) situation is considered on its merits (Human Rights Act requirement). In **England and Wales**, the Environment Protection Agency has a scheme classifying the severity of pollution incidents as follows: Category 1 – major environmental impact; Category 2 – significant environmental impact; Category 3 – minor environmental impact; and Category 4 – no environmental impact. These categories are considered when determining the appropriate enforcement response. A similar classification scheme is being devised for non-compliance with conditions and limitations specified in the permit.

Internally, inspectors/enforcement officials may be audited for consistency of response by senior inspectors who review the enforcement correspondence. In addition, the system as a whole must meet the requirements of the certified quality management system

For serious incidents, a prosecution is considered. In **England and Wales and Northern Ireland** the decision to prosecute is taken by the appropriate agency. It is usually a joint decision by lawyers within the organisations and the chief inspector in Northern Ireland, or in England and Wales, a committee of inspectors. The decision reflects the severity of the case, the weight of evidence available to make a prosecution successful and the response in previous cases to ensure that a consistent approach is taken. In Scotland, the Environment Protection Agency has no power to institute prosecutions itself since Scottish law has a different basis to other administrations. Scottish EPA must make recommendations to the public prosecutor, the Procurator Fiscal, who will make the decision and conduct proceedings. An illustration of the enforcement tools that are available in the United Kingdom, and to whom these tools are available, is shown in Table 3-13.

Table 3-13. Administrative and criminal enforcement tools available to inspectors and their use in the United Kingdom

Tool	Availability	Examples of use
Informal		
Verbal warning on site	Inspectors and senior inspectors.	Minor non-compliance *e.g.* in record keeping, housekeeping issues, or minor leak.
Warning letter	Inspectors and senior inspectors.	Minor non-compliance, if verbal warnings are not heeded.
Formal/ Administrative		
Enforcement or Improvement notice	Inspectors and senior inspectors. Agency lawyers would also be consulted in England and Wales (E&W).	If a specific action is required within a set but reasonable time scale for permit conditions to be met *e.g.* if a piece of equipment was faulty, or to prevent further pollution by controlling the discharging activity. Also if there was a significant breach of permit conditions, or unsatisfactory response to warnings.
Prohibition notice	Inspectors and senior inspectors. Agency lawyers would also be consulted in E&W and Scotland.	Only if imminent risk of serious pollution requiring immediate action.
Revocation notice	Idem.	Idem.
Administrative fine	Not available.	
Part closure (temporary)	Inspectors and senior inspectors except in Scotland where only available to court (unless via a prohibition notice)[1]. Agency lawyers would also be consulted in E&W.	Only in serious cases where a prohibition notice was not being heeded. Scottish EPA must apply through the courts for this action as it does not have this power.
Part closure (permanent)	Inspectors and senior inspectors except in Scotland where only available to court[1]. Agency lawyers would also be consulted in E&W.	Idem.

Tool	Availability	Examples of Use
Full closure (temporary)	Inspectors and senior inspectors except in Scotland where only available to court[1] (unless via a prohibition notice). Agency lawyers would also be consulted in E&W.	Idem.
Full closure (permanent)	Inspectors and senior inspectors except in Scotland where only available to court[1]. Agency lawyers would also be consulted in E&W.	Only where the competent authority considers that the operator is unlikely to be able to meet permit conditions. This would be done via a notice revoking the permit. The notice could be lifted if the operator could prove ability to meet the permit conditions. Scottish EPA must apply through the courts for this action as it does not have this power.
Formal caution	Inspectors and senior inspectors.	For non-serious non compliance.
Formal/Criminal		
Prosecution	Decided jointly by the senior/ chief inspector and lawyers of competent authorities in E&W or Northern Ireland. In Scotland the Public Prosecutor decides whether to take a prosecution based on SEPA recommendations.	Where there have been former cautions which have been ignored. Where there is sufficient evidence to prove guilt. Where operators have failed to notify the agencies of incidents.
Corporate fines	Courts only.	Failure to comply with integrated permit conditions is a criminal offence and could result in fines and / or imprisonment, however these can only be imposed by court but not directly by the competent authorities.
Personal fines	Courts only	Idem. Also where someone (usually the plant manager or a director) is holding back information or shown intent or neglect.
Imprisonment	Courts only.	Idem.

Notes: 1 In Scotland only courts have authority to shut down a process permanently. SEPA can shut down parts or all of a process via a prohibition, but would need to specify conditions under which the process could re-start. A prohibition notice is a way of securing remedial/improvement action rather than a way of permanently stopping the process from operating.

Source: Report of the Project on Environmental Enforcement Practices (PEEP) in the United Kingdom, IMPEL (2001)

When drafting a strategy, the inspectorate will select whatever elements are possible to use. In this section, a concrete example of an enforcement strategy and several flowcharts on possible follow-up are presented to help the reader visualise this tool of environmental inspectorates (Box 3-14, and Figures 3-4 and 3-5).

The effectiveness of an enforcement strategy will depend not only upon the tools used, but also time spent from the moment of detection until the sanction against the offender becomes effective and the offender takes corrective actions. The longer the chain of enforcement, the less effective the enforcement strategy. Therefore the general of an enforcer will be to reduce the number of steps in the chain of enforcement, thus reducing the time when the offender may take benefits out of the non-conformity situation.

Enforcement strategies should respect the **rights of the regulatees**, such as:

- Right to be notified of the violation;
- Right to select methods to rectify the consequences (and roots) of violations;
- Right to issue appeals;
- Right for information confidentiality (when appropriate).

The usual **working procedure** under an enforcement strategy is that:

- Step 1: The inspector determines the seriousness of the non-compliance through his/her expert knowledge and experience and consideration of factors aggravating non-compliance;
- Step 2: The inspector selects the enforcement path, taking into account the observed consequences and circumstances of non-compliance;
- Step 3: The inspector, after approval by his/her manager, follows the steps on the enforcement path.

Box 3-14. Strategy of the State Environmental Inspectorate of the Ukraine on follow-up enforcement actions

In 1999, an environmental inspector's handbook was developed in the Ukraine to provide the staff of the State Environmental Inspectorate with detailed guidance on exercising the compliance assurance role. Among other things, the handbook gives instructions on follow-up enforcement actions. In the Ukraine, as a result of completed environmental inspection, the inspector may resort to the following enforcement actions, so as to ensure compliance (see also flow-charts of possible follow-up actions):

A. No violations of norms/permit conditions have been detected:

A.1 Consider need for environmental improvements

A.1.1 Recommend improvements to the enterprise, if desired

A.2 Consider if permit conditions are too loose

A.2.1 Recommending amendment of permit conditions to the relevant authorities, if appropriate

A.3 Review future inspection frequency

A.3.1 Recommend decreasing inspection frequency, if appropriate.

B. Violations were not registered before, and they did not result in serious environmental consequences

B.1 Prepare and send to the facility formal instructions to complete specific improvement measures within established deadlines. Deadlines for completion of the identified measures should be established on the basis of urgency of required improvement and upon consultations with the appropriate experts in order to assess realistic periods for implementation. The instructions should also state that the facility will be inspected again after the deadlines have passed.

C. Repeated violation(s), without serious environmental threat

C.1 Impose a penalty on officials of the enterprise that were held responsible for correcting the earlier detected violation(s)

C.2 Repeat formal instructions to the enterprise to correct the non-compliance within the established deadlines

D. Detected violations are not eliminated for a long period, or they present a serious threat to the environment and/or human health

D.1 Consider application of sanctions by the chief oblast (regional) environmental inspector

D.1.1. Recommend applying penalty by the chief inspector, or

D.1.2 Temporarily suspend activity of the particular process until the detected violations are eliminated

D.2 Consider need for compensation of damage as a result of the detected violations

D.2.1 Propose to the enterprise to compensate voluntarily estimated damage, if the latter can be proved

D.3 Consider if the detected violations constitute a case of criminal offence

D.3.1 Submit recommendation for criminal prosecution and collected evidence to the regional prosecution office.

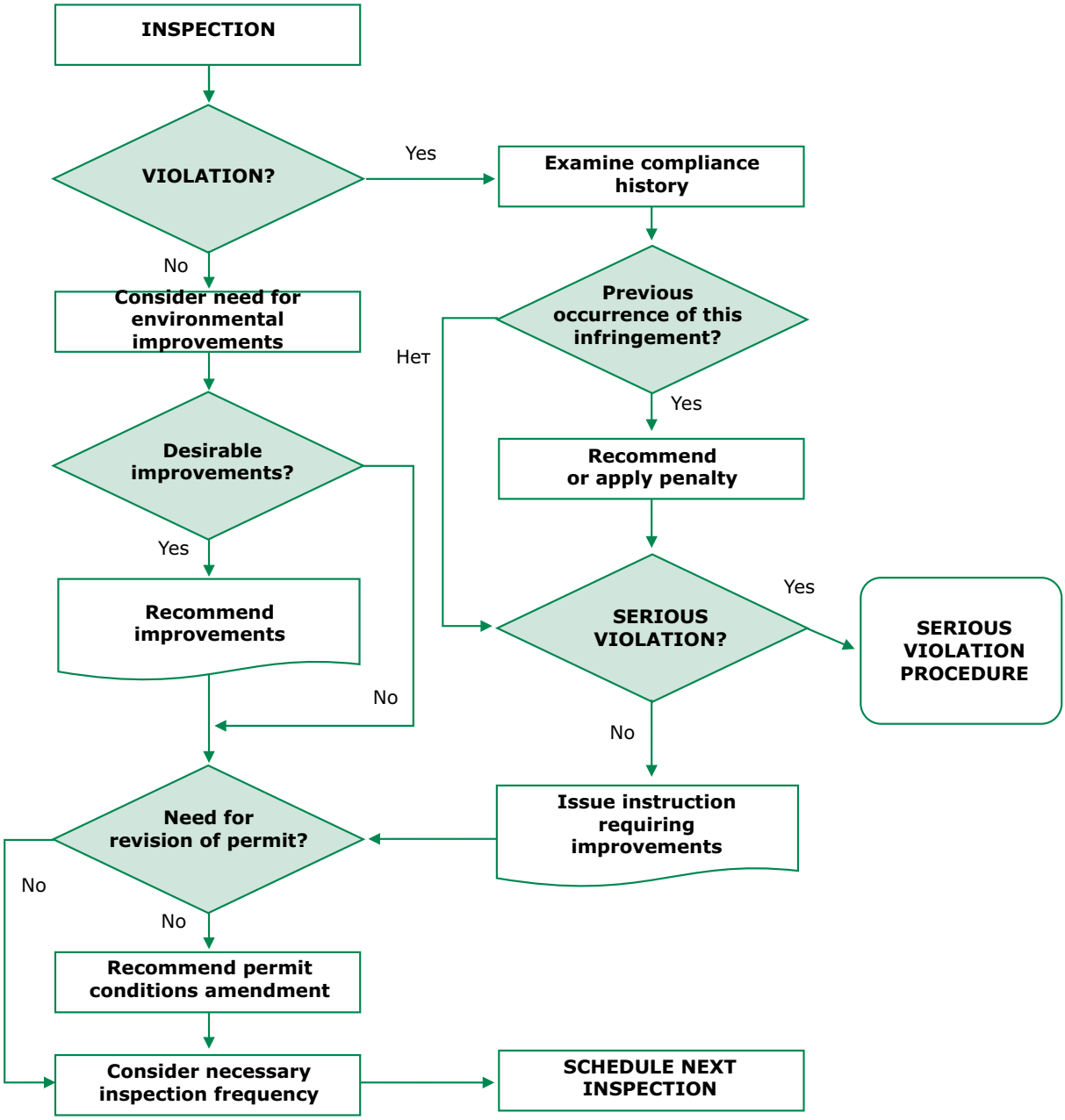
E. Review enforceability of particular norms/permit conditions

E.1 Consider if environmental norms, applicable to the enterprise, and issued permits, are practically enforceable

E.1.1 Signal to the oblast chief inspector what regulatory requirements should be revised, if appropriate.

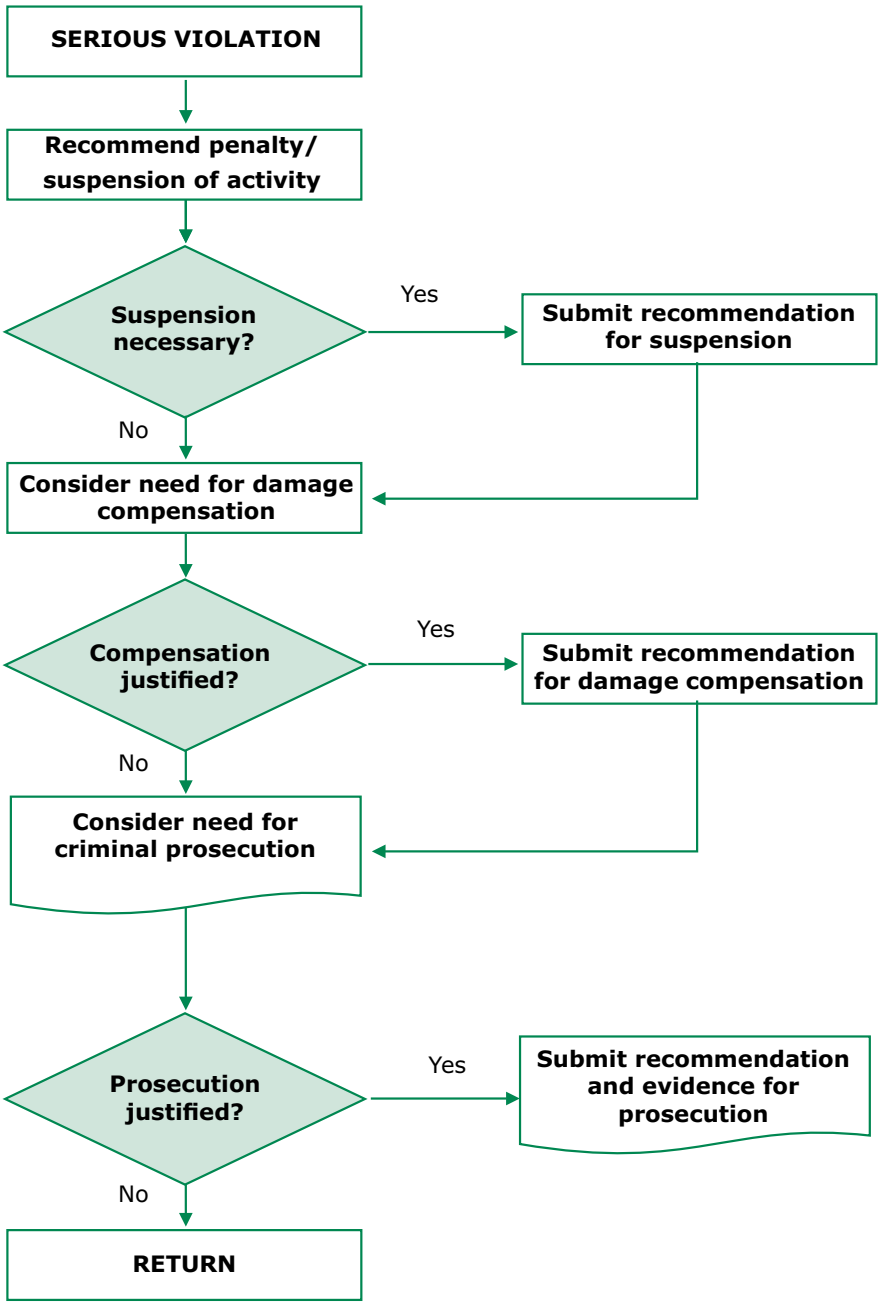
Source: Environmental Inspector's Handbook, State Environmental Inspectorate of the Ukraine (1999).

Figure 3-4. Flowchart of enforcement follow-up actions in the Ukraine



Source: Environmental Inspector's Handbook, State Environmental Inspectorate of the Ukraine (1999).

Figure 3-5. Flowchart for serious offence procedure in the Ukraine



Source: Environmental Inspector's Handbook, State Environmental Inspectorate of the Ukraine (1999).

CHAPTER 3.7
PERFORMANCE MANAGEMENT[52]

Regulations that are implemented and enforced by agencies that are not held accountable for compliance outcomes and managed to maximise outcomes are less likely to be effective in achieving their goals. Information is a powerful tool for managers and politicians. For inspectorate managers it is vital to have information on the success of their inspection and enforcement activities. Information about the inspection and enforcement activities and their results can ensure that inspectors inspect and enforce consistently and fairly using established procedures and strategies. Information can help managers to adjust inspection and enforcement programmes and strategies to changing conditions and lessons learned.

3.7.1 Purposes behind performance assessment and management

Periodic programme evaluations, based on data concerning programme activities and results, serve many purposes:

- **Evaluating progress:** Evaluation helps programme managers determine whether the strategies they are using to achieve compliance are working. Results of evaluations are used as a basis for identifying problem areas and making changes to improve effectiveness.
- **Creating deterrence:** Periodic reporting of programme activities and successes to the regulated community contributes to deterrence by raising awareness that there is a good chance violations will be identified and responded to. Such reporting will be effective only if the programme has been active and successful.
- **Internal accountability:** Periodic evaluations of performance provide a basis for establishing a system to hold inspectors accountable for the implementation and effectiveness of the programme. Establishing an accountability system involves defining performance goals and/or measures, obtaining commitments from inspectors to achieve those goals/measures, and evaluating their performance against those goals/measures. Where necessary, action is taken to improve performance. Accountability is valuable to ensure the quality of the inspection and enforcement programme at all levels, from entry-level personnel to senior management.
- **Public accountability:** In some countries, inspection and enforcement programmes are required by law to report their progress and achievements to the public. Program evaluation provides the basis for public accountability. This accountability can be an important force in shaping programme strategies and priorities. Public accountability also takes form through delivering monitoring information to those politically responsible for the inspectorate. Members of the public may contact their representatives in local, regional, or national parliament at any time to express satisfaction or dissatisfaction with the results of the programme.

[52] See also the forthcoming "Proceeding from the INECE-OECD Workshop on Environmental Compliance and Enforcement Indicators: Measuring What Matters", www.oecd.org/env/outreach or www.inece.org/indicators/workshop.html

3.7.2 Establishing a system for performance assessment

Measuring the success of an enforcement programme is not easy. What exactly should be measured? How should it be measured? Many indicators can be used to evaluate the programme's effectiveness. Some of them measure results, like improvement in environmental quality and rates of compliance. Some measure activity levels, like numbers of inspections and enforcement actions. Others provide qualitative assessments of programme performance and direction. Each of these measures has advantages and disadvantages. Several of them must be used to gain a meaningful assessment of programme effectiveness.

Key questions to ask when considering which measures to use include:

- How accurate is the measurement?
- What resources are needed to obtain the necessary data?
- How frequently should data be collected?
- Who will collect the data?
- How should the data be reported, and to whom?
- Who will analyse the data? What will the analysis serve for?
- Where will the data be stored?
- Will the data be computerised?

All personnel involved in gathering or analysing data need to clearly understand exactly what data should be reported. Problems can arise if different individuals within a programme have different interpretations of what data are needed.

At different levels of an inspection and enforcement programme different data may be needed. Local personnel, for example, may prefer to focus their resources on data they consider valuable for evaluating programme performance. Personnel at the national level may have different priorities. National data systems will benefit if they are designed from the bottom up. Since local personnel collect the data, they will have a greater incentive to gather accurate data if they believe the data will be useful to them.

Mechanisms will be needed to gather and store the data, and to transfer it at appropriate intervals to other programme levels that will analyse the data. A schedule for issuing reports of the analysis will also be needed. Policy makers may also wish to conduct special studies to analyse programme strategy and success, and recommend improvements. These studies could examine issues like:

- The effectiveness of various programme policies, *e.g.* which compliance promotion tools were successful in reaching the regulated community, the policy for identifying and screening violators;
- The effectiveness of various enforcement techniques.

The results of the studies would be useful for reviewing and refining programme priorities and strategies.

3.7.3 Categories of indicators for regulatory agencies

It is possible to evaluate the performance of inspectorates (similarly to any other regulatory agency) by reference to several categories of indicators:

1. Effects/Impacts/Outcomes: These are the environmental results;
2. Behavioural Outcomes (or: Intermediary Outcomes): Compliance rates or other outcomes (*e.g.* adoption of best practice, other risk reduction activities, "beyond compliance" activities, voluntary actions);
3. Agency Activities/Outputs: For example, enforcement actions; inspections (number, nature, findings); education/outreach; collaborative partnerships; administration of voluntary programmes; other compliance-generating or behavioural change inducing activities;
4. Inputs: This mostly concerns the use of agency's and regulatees' resources.

Traditionally, regulatory agencies' performance and cost-effectiveness are managed and evaluated largely by reference to their level of activity, rather than the outcomes they accomplish. If governments are interested in evaluating whether inspectorates are actually achieving the policy objectives of regulations then category 3 and 4 performance measures must be supplemented by category 1 and 2 performance measures.

At the same time, relying on category 3 and 4 measures alone does not account for qualitative differences in the effectiveness of various enforcement activities. Category 1 and 2 measures enable governments to hold agencies accountable for whether their activities are actually having any impact, and help governments to see whether their policy instruments are accomplishing anything.

The most frequent types of indicators are analysed below:

Environmental results

Improved environmental quality is the ultimate goal of any inspection and enforcement programme and therefore is the most desirable measure of success. The types of environmental results that can be measured include overall environmental quality, reduction in pollutant releases, and risk reduction. Unfortunately, these measures have several shortcomings:

- There can be a significant time-lag between the compliance promotion and/or enforcement action and the resulting improvement in environmental quality;
- It is hard to link changes in environmental quality to specific sources or specific compliance actions;
- Other factors, such as changing weather patterns or economic conditions, may affect environmental quality and therefore the accuracy of this measure;
- Compliance with some environmental requirements does not result in measurable improvements in environmental quality.

Compliance rates

Compliance rates are one of the best overall measures of enforcement success. High compliance rates are the ultimate goal for most inspection and enforcement programmes. Nevertheless, this measure also has a number of shortcomings:

- Compliance rates rely on the thoroughness and frequency of inspections and/or on the accuracy of self-reported data. Compliance rates will not be reliable if these data are not thorough or accurate enough;
- A lower compliance rate may mean that the programme is doing a good job of detecting violation, that the programme is using stringent standards for compliance, and/or that the regulatory requirements are stringent. It could however also mean that there may be a need to raise the quality of inspections because non-compliance is not sufficiently discovered;
- A high compliance rate can be misleading if the most significant pollution sources remain out of compliance, or if sources in compliance fail to stay in compliance.

Because of these shortcomings, it may be difficult to keep programme managers accountable for improvement in compliance rates. Compliance rates however are a clear signal for keeping up management attention in specific areas.

If compliance rates are used as a measure of success, policy makers will need to agree on what constitutes compliance, like:

- Should the compliance rate cover any and all requirements, no matter how minor, or just the most significant requirements?
- How should repeat violations be reported? For example, how should sources be reported that are in compliance during the reporting period, but which are known to regularly go in and out of compliance?
- What influence should the percentage of sources of unknown status have on the evaluation of compliance rates? For example, if a particular compliance rate is shown for 10% of companies for which data exist, what assumptions are made about the other 90%?
- What data gathering is needed to ensure that companies that are in compliance continue to stay in compliance?

Progress in returning (significant) violators to compliance

Significant violators are those violators that have the greatest impact on environmental quality. Bringing them into compliance will therefore have the greatest immediate impact on environmental quality. Information on progress in returning significant violators to compliance may also have an important deterrent effect, since significant violators are often relatively large and well-known sources within the regulated communities. This indicator is appropriate for both tracking and target-setting. It is important to remember that this indicator does not provide any measure of success achieved in that portion of the regulated community that are not defined as “significant violators”.

Box 3-15. United States experience in measuring progress in returning significant violators to compliance

The United States started to use this measure since the late 1970s. It is one their most successful management tools. At first the programme officials identified the most significant pollution sources throughout the country and proceeded to take action against them. This effort brought many large industries into compliance. However, enforcement activity declined rapidly when this initial list was exhausted.

In 1985 a new system was adopted, which does not single out particular industries. Policy makers developed national criteria for what constitutes a significant violator. They also defined what actions should be taken for particular types of violations. Program officials must identify significant violators in their jurisdiction, and make commitments to taking specific actions against a certain number of significant violators every three months. Sources are tracked until full compliance is achieved. Records are kept of the number of significant violators identified, the number and type of actions taken, and the results of those actions. Performance is evaluated based on how closely these goals are met. The lists of significant violators are made publicly available.

This approach has several advantages:

- It tracks not only actions taken, but also results achieved. Actions and results can be easily associated;
- The system encourages actions that will have significant environmental benefits;
- Inspection and enforcement programme managers can analyse the data for patterns of compliance across industry, companies, and environmental media;
- Publicising the lists of significant violators may encourage other sources to achieve and maintain compliance.

In 2000 a further developed system was introduced. It had turned out that the existing system was useful, but it did not help to measure the state of compliance with environmental laws, the environmental results achieved, or the degree to which programme objectives were being met and non-compliance problems were being addressed. In the newly-designed system the measures were implemented in stages, and the entire set of measures, known as the "Performance Profile", became fully operational. The "Performance Profile" includes the following measures of environmental results and outcomes:

- Non-compliance rates for selected regulated populations;
- Environmental and human health improvement from compliance assurance and enforcement activities;
- Disclosure and correction of violations using the US-EPA's compliance incentive policies;
- Timeliness of return to compliance by significant violators;
- Recurring or new violations by significant violators.

It also includes the following output measures:

- Number of inspections and investigations conducted;
- Number of enforcement actions taken;
- Compliance assistance provided;
- Capacity building efforts.

Source: www.inece.org

Measures of compliance monitoring

Another measure of performance, appropriate for both tracking and target-setting, is how well an inspection and enforcement programme monitors compliance. Several measures can track progress in this area:

- Number of inspections;
- Quality of inspections;
- Appropriateness of the targets of inspection;
- Quantity of self-reported data received;
- Quality of self-reported data received.

The number of inspections is probably the easiest of these indicators to track. This indicator provides a qualitative measure of programme success in creating an inspection and enforcement presence.

Program officials can set targets for and report on the number of inspections, policy makers can develop (national) criteria for effective inspection and enforcement strategies, and programme officials can evaluate the strategies against these criteria. Oversight inspection by special programme inspectors or consultants, either separately or simultaneously with local inspectors, can be conducted to assess the quality of inspections.

An issue in measuring compliance monitoring is that well-targeted, high quality inspections will probably increase the number of violations detected and thus lower the compliance rate.

Number of enforcement actions

Legal action is the ultimate weapon in the arsenal of environmental enforcement tools. Measures of enforcement actions may therefore be of particular interest to members of the public and non-governmental organisations that are concerned about environmental quality.

Despite its potential importance in public relations, this indicator has important disadvantages:

- The fact that an enforcement action has been initiated does not mean that compliance will be achieved in a timely and effective manner. The litigation process can result in lengthy, delayed compliance schedules;
- Legal action is the most costly enforcement action. An emphasis on legal action may divert attention and resources from other important programme activities essential to programme success. This may be a particular concern if the regulated sources are small and numerous;
- The number of enforcement actions may depend, in part, on the degree of non-compliance. For example, it may be easier to bring successful enforcement action in the early stages of a programme when there are many obvious violators, than at later stages when (if the programme has been successful) violations are less dramatic and less obvious.

To use this indicator, policy makers must decide exactly what will be counted:

- Total number of legal cases initiated;
- A breakdown of the types of cases by severity of violation;
- Number of sites involved;
- Multiple violations or repeat violators;
- Number of cases won, etc.

These indicators are not appropriate for target-setting, because making programme managers responsible for meeting quotas for enforcement response could undermine the objectivity of the programme in evaluating whether or not sources are in compliance.

Timeliness of enforcement actions

One of the best indicators of the efficiency of an inspection and enforcement programme is the time it takes to either respond to a violation, or achieve compliance. Ideally, many types of enforcement actions should be as swift as possible so that the offender can be returned to compliance as quickly as possible. Timeliness can be evaluated by monitoring trends and, sometimes, by comparing actual results against predetermined goals. For example, monitoring trends is particularly appropriate for measuring time to achieve compliance, since so many factors influence this result.

Timeliness can also be measured by setting goals for different types of enforcement actions. Success is then measured by comparing the actual schedules with these timeliness goals. Goals can only be set for those types of enforcement actions that consistently take a predictable time to complete. These are usually the earlier and more routine enforcement actions. Enforcement actions involving later stages of legal procedures are generally too unpredictable to be evaluated in this way.

Also, timely action may not be possible or appropriate in some cases, such as criminal cases, that required detailed investigation before an enforcement action is filed. Care may be necessary to ensure that use of timeliness as a measure of programme success does not encourage enforcement personnel to take simple administrative action rather than pursuing a more time-consuming enforcement action.

Monetary penalties assessed

This indicator is simply the total number and/or value of penalties assessed as a result of enforcement actions. Trends in this indicator are used to measure success, since it is not possible or appropriate to set goals for how many penalties should be assessed during a particular time period or how severe the penalties should be. This indicator may not be a good means of holding managers accountable for successful enforcement activity because there is generally a significant time-lag (sometimes years) between the initiation of an enforcement action and assessment of a monetary penalty.

Measures of technical assistance

One measure of success for programmes with an emphasis on compliance promotion is the extent and effectiveness of technical assistance provided by the programme to the regulated community, in order to make it more possible for them to comply. For example the government could set up a network of waste collection depots where small companies can dispose of their hazardous waste. This may prevent these companies from disposing it by dumping it in rural areas, surface waters, etc.

This success measure is appropriate for both tracking and target-setting. Several measures can track progress in this area:

- Number of companies that have received technical assistance;
- Increased compliance achieved by companies receiving technical assistance.

3.7.4 Regular reporting

As public bodies, environmental inspectorates are accountable, on progress achieved, for fulfilling their mandate. The inspectorate must consider pro-active reporting to stakeholders such as: policy makers and legislators, government authorities (in particular, Ministries of Finance or other regulators), the regulated community, the general public, mass media, and others. It is important to direct information to different stakeholders very precisely to make sure that stakeholders receive, understand, and pay attention to the information. Insufficiency of data can undermine future decision-making and the update of policies and strategies; surplus of information may lead to disrupt the decision making by excessive use of time and lack of focus.

Commonly, inspectorates prepare annual reports that contain more or less standard items. Through these reports, they demonstrate whether the compliance assurance goals where achieved and how much was spent on achieving the goals. In the European Union, for example, it is a minimum criterion to ensure that such annual reporting is carried out. It is the task of the inspecting body/bodies responsible for environmental inspections in each member state to produce a report at a predetermined and regular frequency. An important purpose of the report is to demonstrate to the

public the implementation of the minimum criteria for inspection. In the United States, the reports documenting the results of the enforcement and compliance programme vary in scope from the broad, such as the reporting required by the Government Performance and Results Act (GPRA), to the specific, such as the reports on enforcement trends and progress, as captured in the Measures of Success (MOS) report.

Box 3-16. Annual reporting in the Flemish Community, Belgium

The Environment Inspection Section of the Ministry of the Flemish Community issues an annual report that contains information on:

- Organisation of the Inspection Section, including vision, values, strategy;
- Personnel, training and resources;
- Environment inspection plan;
- Specific enforcement campaigns;
- Routine inspections;
- Reactive inspections;
- Actions under criminal and administrative law;
- Co-operation with others;
- Involvement in consultative structures;
- International context.

Source: Annual Report of the Environment Inspection Section of the Flemish Community (2001).

Inspectorates may also be asked to develop a specific chapter on compliance assurance as part of the State of Environment reports of the larger environment protection authority. Beyond reporting on organisational matters and the activities of the inspectorate, other papers may concern the environmental development in and outside the inspectorate.

ANNEX 3-1. TAILORED APPROACH TO INSPECTION

The "tailored approach to inspection", developed in the Netherlands, can support facility-specific targeting, including decisions to decrease or increase intervals between inspections and the duration of inspection. The method is based on the assumption that a standard duration of inspection (*e.g.* in hours) is specified for each sector. This value is applicable to the companies classified as "middle runners" (medium risk companies). Differentiation can then be introduced in the inspection approach, frequency and/or length based on environmental performance of the company. The average duration of inspection will be halved for frontrunners. The "time gain" from this will be added to the inspections of so-called "stragglers".

The approach can be used for both complex and non-complex companies. Complex companies share the following features: more than one production unit; complex production methods; high level of integration of various process activities; etc. Complex companies (usually with a high environmental risk and a high environmental impact) are expected to show a better environmental performance to qualify as a frontrunner than non-complex companies.

Companies are divided into three categories based on the following general characteristics:

a. Frontrunners (low risk companies)

To qualify for "frontrunner", complex companies must ensure compliance with environmental legislation and exhibit a high level of environmental awareness. They need to implement actively environmental improvements that reach beyond their own company, both via a sectoral approach (purchasers and suppliers) and via a territorial approach (utility sharing, *e.g.* when several companies set a combined heat and power generation station). Generally, complex companies are required to have a (certified) environmental management system or be at an advanced stage in developing such a system.

In non-complex companies minimum requirements for becoming a frontrunner are: guaranteed compliance with the environmental permit(s) conditions and other legal requirements, and a positive attitude towards stakeholders (authorities and residents). Additional requirements may be laid down, e.g. the presence of energy-saving and waste prevention plans. The criteria for qualifying as a frontrunner vary per sector.

b. Middle runners (medium risk companies)

These are environmentally aware companies that on the whole comply with environmental legislation but areas for improvement frequently have to be pointed out to them. They still have no structured approach for the continuous improvement of their environmental performance. They have a neutral/positive attitude towards stakeholders. Experiencing some difficulty in implementing the required environmental measures, still they view environmental investments as a bearable burden. In this type of company there is a limited risk of violation of core conditions (*i.e.* conditions in licenses and legal provisions that are most relevant for the protection of the environment, taking into account the nature and risks of the company and the sensitivity of the adjacent area).

c. Stragglers (high risk companies)

These are the companies that do the least for environmental protection: the inactive companies. Measures in the environmental field are implemented with the greatest difficulty. They have a

rather negative attitude towards stakeholders. Environmental legislation is mostly not complied with at all or inadequately. There is an increased risk of violation of core conditions and secondary conditions.

Criteria have been specified to measure a company's environmental performance. Distinction is made between the Statutory Environmental Performance (SEP) and the Voluntary Environmental Performance (VEP). A scoring system is applied where a company may earn a maximum of 100 points:

- 0–50 points: straggler;
- 51–80 points: middle runner;
- 81–100 points: frontrunner.

The **criteria for measuring Statutory Environmental Performance** (SEP) are linked to the outcomes of routine and follow-up inspections. These are:

a. Violations of environmental requirements found during a routine inspection and regarding which a formal letter was provided with a request to correct the situation. A follow-up inspection will be carried out after a certain period following a formal enforcement action;

b. Violations found during follow-up inspections.

At the start, an enterprise is given a 70 point bonus for the SEP component. If violations are found during routine inspections, the company loses five points per violation. A persistent violation, revealed during a follow-up inspection, will lower the scope with other five points. In those cases where, due to the serious nature of the violation(s), a criminal and/or administrative enforcement scenario is immediately implemented without a prior enforcement notice, the company loses 10 points per violation. The lowest possible scope is zero. Penalty points will be valid only three years so that the company has a chance to improve its score.

The **criteria for measuring Voluntary Environmental Performance** (VEP) reflect the level of the company's (systematic) environmental protection. A company may earn a maximum of 30 points for the VEP component. The inspectorate should determine the VEP on a yearly basis. Eight essential elements of the ISO 14 001 standard for environmental management systems (EMS) must be documented and implemented in order for some degree of systematic environmental protection to be acknowledged: environmental policy; environmental analysis; environmental protection programme and environmental objectives; job descriptions including tasks, responsibilities and authority in the environmental sphere; management representative; corporate emergency plan; the environmental legislation compliance procedure; and registration. In addition, a company may earn 10 points for actual or documented environmental investments on a voluntary basis that go beyond regulatory requirements.

VEP criterion will hardly be applicable to small companies, because:

- Due to lack of funds they rarely make investments for achieving environmental performance beyond regulatory requirements;
- They may implement (some elements of) an environmental management system, which is usually not efficient. Systematic environmental protection in this type of company is primarily reflected in "good housekeeping": small but practical measures, of *e.g.* separation of waste, energy saving, efficient maintenance of equipment, etc.

In the non-complex companies it is primarily an enterprise's SEP score that will determine whether it is a frontrunner, middle runner, or straggler. If a very small company wishes to earn frontrunner status, this is only possible if it obtains the maximum score (70 points) for its SEP and the inspector rates the company's good housekeeping as good or excellent. In those cases where the good housekeeping is rated as poor or moderate the company cannot qualify as a frontrunner even if it has obtained the maximum score for a number of years for its SEP. In the complex companies, it is the VEP score that will be a determining factor.

The overall performance of complex companies will often suffer due to the impact of one part of the company that fails to comply with environmental requirements. This lowest performance will determine the manner and intensity of inspection for the whole company, whereas it is quite possible that other company parts display a very good environmental performance. In such a case the inspectorate's resources will not be used to a maximum efficiency and incentives will not be created to keep the high performance in those parts of the company that perform well. To address this issue, complex companies may be assessed unit by unit.

CRITERION	The inspectorate's experience with the company	Score
Statutory environmental performance	***Point score: maximum 70, minimum 0 points***	
Violations which lead to a notice containing enforcement section	If the inspectorate sends a notice containing an enforcement section after an inspection, the company forfeits per violation	5
Violations after a follow-up inspection:	If, during the follow-up inspection after the notice containing the enforcement sections, the inspectorate still finds violations, the company forfeits per violation	5
Violations whereby an enforcement process is immediately implemented:	If, following an inspection the inspectorate immediately sets in train a criminal or administrative enforcement process without a prior notice containing an enforcement section, the company forfeits per violation	10
Voluntary environmental performance	***Point score: maximum 30, minimum 0***	
Environmental protection system and systematic environmental protection	"**advanced**": the company has a fully documented and implemented EMS in accordance with ISO 14001	20
	"**candidate**": the company has documented and implemented at least six of the eight elements	15
	"**beginner**": the company has documented and implemented two to six of the eight elements	10
	"**inactive**": the company has documented or implemented none or only one of the eight elements	0
Environmental investments/ innovation	Yes, proved and/or demonstrated intention	10
	No, not proved and/or not demonstrated intention	0

In complex companies which are "frontrunners" or "middle runners" three inspection instruments may be deployed: the routine environmental inspection, in-depth inspection (audit), and the desk inspection. In non-complex companies which qualify as frontrunners, or middle runners the in-depth inspection hardly needs to be deployed, if at all, due to a (general) lack of environmental management systems.

The traditional inspection is primarily used for the “stragglers”. For complex stragglers in-depth inspections are carried out. Use of the desk inspection is not desirable: for example, annual self-monitoring reports must always be verified by the authorities on the spot as being correct and complete.

Company	Frontrunner		Middle runner		Straggler	
Instrument	Complex	Non-complex	Complex	Non-complex	Complex	Non-complex
Routine inspection	+	+	+	+	+	+
In-depth inspection	+	-	+	-	+	-
Desk inspection	+	+	+	+	-	-

Next two pages: two examples can be found on the use of the calculation method:

Company A – an example

	1998			**1999**				**2000**					**2001**			
Preventive (P) or reactive (R) inspection	P1	P2	P3	P1	P2	P3	P4	P1	R	P2	P3	R	P1	P2	R	
Start up Bonus Points of SEP	70	-	-	45	-	-	-	60	-	-	-	-	55	-	-	
Number of violations	4	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
Number of violations after follow-up inspection	1	n.a.	n.a.	n.a.	0	n.a.	n.a.	n.a.	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
SEP points to be deducted	-25	0	0	0	-5	0	0	0	-5	0	0	0	0	0	0	
Total number of SEP points	45	45	45	45	40	40	40	60	55	55	55	55	55	55	55	
VEP systematic management	Inactive 0			Beginner (10) +10				Beginner (10)					Candidate (15) +5			
VEP investments/ innovation	0			+10				(10)					(10)			
Total number of points	Straggler		**45**	Middle runner			**60**	Middle runner				**55**	Middle runner			

Explanation of the example: By the end of 1998 an imaginary company has 45 points, being part of the category of the "stragglers". In 1999 the number of inspection hours is increased by a factor 1.5. On that basis four planned (preventative) inspections are carried out. By the end of 1999 the company is part of the category of "middle runners" (60 points). In 2000 the standard number of inspection hours is allocated again (three planned inspections). Also in 2001 the company remains a middle runner with 55 points. In spite the fact that the company started the introduction of an environmental management system, the violations that were found in 1998 or sanctioned remain of influence for three years. As the inspection results expire after three years, the company gains the 25 points from 1998. In 2002 however also the 10 points for environmental investments/innovation expire. By the end of 2002 the company still belongs, with 75 points, to the category of middle runners. In 2003 the standard number of inspection hours will be used, which means three planned inspections.

Company B – an example

	1998			**1999**				**2000**		**2001**		**2002**			
Preventive (P) or reactive (R) inspection	P1	P2	P3	P1	R	P2	P3	P1	P2	P1	P2	P1	R	P2	P3
Start balance of points	70			70				85		85		75 + 0 = 75			
Number of violations	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0
Number of violations after follow-up inspection	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	o	n.a.	n.a.	1	n.a.	n.a.	n.a.	n.a.	n.a.
Number of SEP points to be deducted	0	0	0	0	0	0	-5	0	0	-15	0	0	0	0	
Total number of SEP points	70	70	70	70	70	70	65	85	85	70	70	75	75	75	75
VEP systematic management	Inactive 0			Beginner (10) +10				Beginner (10)		Candidate (15) +5		Advanced (20) +5			
VEP investments/ innovation	0			+10				(10)		(10)		-10			
Total number of points	Middle runner		**70**	Frontrunner			**85**	Front runner	**85**	Middle runner	**75**	Middle runner			**75**

Explanation of the example B: By the end of 1998 an imaginary company has 70 points and belongs to the category of the middle runners. In 1999 the number of inspection hours will not change and, like in 1998 three preventive inspections will be carried out. By the end of 1998 the company belongs to the category of the frontrunners (85 points). The number of inspection hours will be reduced by half, meaning that in 2000 only two preventive inspections will be done. Also in 2000 the company remains a frontrunner with 85 points. For that reason also in 2001 two preventive inspections are carried out. Because the company commits three violations in 2001, it becomes a middle runner by the end of that year with 75 points. At the beginning of 2002 the company gets the zero points from 1998. Since in 2002 the 10 points from the environmental investments/innovation expire the company remains a middle runner at the end of 2002. For the year 2003, again three preventive inspections will be planned.

ANNEX 3-2. RISK ASSESSMENT METHODS FOR LOCAL AIR POLLUTION CONTROL IN THE UNITED KINGDOM[51]

This annex provides the results of a study conducted for the Air and Environment Quality Division of the Department of the Environment, Transport and the Regions (DETR) in partnership with the National Assembly for Wales and the Department of Trade and Industry. The study is concerned with the development of a risk assessment method for use by local authority inspectors under the local air pollution control (LAPC) regime. Four potential risk assessment methods have been developed, drawing on experience of the advantages and disadvantages of existing methods. These methods have a range of properties in terms of their complexity, comprehensiveness, incentives offered, and their balance of operator performance against inherent risk. The four methods are as follows:

- **Method 1** involves a crude risk rating of process (enterprises) categories based upon available statistical data. The relative ratings of processes are not considered to be robust but are used as a basis for illustration of the use of such an approach.
- **Method 2** is a simple screening approach, involving the use of the risk rating in Method 1 for allocation of a baseline score for the various process categories. Individual processes are then further classified according to the number of complaints received and the degree of compliance with the process authorisation.
- **Method 3** again employs Method 1's risk rating for a baseline score. Various further attributes are used to address aspects of a process's potential environmental impact and the performance of the operator. This method reflects the methodology of Operator and Pollution Risk Assessment (OPRA) for processes regulated under the Integrated Pollution Control (IPC) regime (*i.e.* major industry) but is based upon criteria that are less open to subjective judgements, in line with the approach used in 'OPRA for Waste'.
- **Method 4** is essentially OPRA for processes regulated under the IPC regime.

The aim of this section is to **demonstrate what risk assessment methods can be developed based on specific regulatory regimes and performance indicators in use, rather than to recommend the direct use of the methods** developed in the United Kingdom. Firstly, a description of the basis for each method is given. This is followed by an explanation of the allocation of scores for each of the attributes considered and suggestions as to how the risk assessment outputs should be used to reflect the effort in regulation of individual processes and process categories. In relation to the latter point, the concept of 'regulatory effort' has been used as the intended output of each risk assessment method. This term refers to the time taken to regulate a process that is dependent upon the process characteristics. It is thus wider than 'inspection frequency', which is used in several other schemes.

[53] http://www.defra.gov.uk/environment/airquality/laqm/guidance/index.htm

METHOD 1 - SIMPLE RATING OF PROCESSES

This method involves using statistical information on the various categories of process that are regulated under the LAPC in order to derive a very simple "risk rating" of those processes. The rating takes into account two key criteria that are used to give a measure of the risk associated with a particular process category: (a) the total number of enforcement notices that have been issued to processes in each category; and (b) the total number of post-authorisation visits that have been made to each category of processes over the period in question.

Both of these totals have then been divided by the total number of processes in each category to give the average number of enforcement-type notices issued per process and the average frequency of visits per process. These two criteria are both considered to be (crudely) indicative of the risks associated with types of processes arising from both the inherent risks of processes and management factors. The criteria are to an extent interdependent, since inspectors will tend to visit processes which have been issued with enforcement notices more often and similarly it is likely that more enforcement notices will be issued for process types that are visited more frequently (due to more detailed knowledge of any shortcomings).

Scores for each of the two criteria have then been ranked and the sum of these ranks has been used to provide a 'risk rating' from two (lowest risk) to 100 (greatest risk), as follows:

$$\text{Risk Rating} = 100 - 2 \times (\text{Rank}_{\text{notices}} + \text{Rank}_{\text{visits}})$$

For example, for waste oil burners of 0.4 to 3 MW output an average of 0.07 enforcement notices was issued per process in 1998/99, the seventh highest out of the 25 categories. An average of 0.43 post-authorisation inspections was undertaken per process in the same period, the twenty first most frequent out of 25. The risk rating is thus:

$$100 - 2 \times (7 + 21) = 44.$$

The risk rating is then used to determine the regulatory effort required for each process category, as shown in Table 1.

Table I: Derivation of regulatory effort from risk rating

Risk rating	Regulatory effort
25 or less	Low
26 to 75	Medium
76 to 100	High

The main advantage of this method is that it is extremely quick and requires virtually no effort on the part of the inspector. It can also readily be revised to take into account data on enforcement notices and inspection levels from future statistical surveys. It takes account of the actual level of enforcement activity associated with processes of different types, thus reflecting the actual risk posed. It also draws on inspectors' judgement of which categories of process require the greatest regulatory activity and reflects the numbers of complaints received.

Table II: Ranking and inspection frequency of processes						
Category	Enforcement type notices per process	Rank	Post-authorisation visits per process	Rank	Risk Rating	Regulatory effort
Storage at terminal	0.00	23	0.17	24	6	L
Service stations	0.00	22	0.12	25	6	L
Gasification	0.00	23	0.42	22	10	L
Bulk chemicals	0.00	23	0.56	20	14	L
Cement and lime	0.02	20	0.99	18	24	L
Waste oil burners (under 0.4 MW)	0.04	15	0.31	23	24	L
Di-isocyanate	0.05	13	0.85	19	36	M
Acid processes	0.03	18	1.25	13	38	M
Cremation	0.01	21	1.42	10	38	M
Asbestos	0.03	19	1.36	11	40	M
Waste oil burners (0.4-3 MW)	0.07	7	0.43	21	44	M
Coating	0.06	10	1.09	17	46	M
Timber	0.06	11	1.22	14	50	M
Ceramic	0.04	16	1.54	8	52	M
Coating manufacture	0.06	8	1.15	16	52	M
Non-ferrous metals	0.08	6	1.21	15	58	M
Rubber	0.04	17	1.89	4	58	M
Glass	0.04	14	1.73	5	62	M
FRP processes	0.05	12	1.58	7	62	M
Other minerals	0.06	9	1.53	9	64	M
Tar and bitumen	0.23	2	1.27	12	72	M
Combustion processes (not waste oil)	0.27	1	1.58	6	86	H
Iron & steel	0.08	4	2.36	3	86	H
Animal and plant treatment	0.08	5	2.79	2	86	H
Incineration (not cremation)	0.09	3	2.91	1	92	H

Since the rating (and thus the regulatory effort required) is based upon past inspection frequencies, a method such as this can be self-fulfilling. This is especially the case as current inspection frequencies are not necessarily based on risk and guidance from the DETR, which suggests that visits should be carried out twice yearly for all process categories. Since facilities of a certain type were inspected more frequently in previous years, they will continue to receive increased regulatory effort in the future. However, if increased regulatory effort leads to reduced enforcement activity, this will be

reflected in an improved overall rating in future. Currently, the method takes no account of the fact that petrol stations have only recently been brought under control and thus may have had fewer post-authorisation visits thus far. This discrepancy could be corrected in future by the use of more recent statistics on enforcement activity.

This ranking is obviously at a rather crude level since many of the categories used in the statistical data, and thus in the ranking, cover a range of process sizes and complexity. Inevitably, certain processes within these categories are likely to pose more of a risk than others. This issue could be addressed by collecting statistical data at a greater level of detail in future. An alternative approach would be to use expert judgement to rank process categories in terms of their risk. Some of the local authorities currently developing risk-based methodologies are investigating this option and have indicated that a reasonably good ranking could be developed by experienced LAPC regulators.

The main disadvantage of the method, however, is that it offers no incentive for improvement to the individual operator, since no consideration is given to individual compliance or environmental performance. Operators will only gain from improved performance when this improvement is reflected across the sector. This might, however, provide an incentive to industry associations to encourage and assist their members to achieve better performance overall.

METHOD 2 - SIMPLE SCREENING APPROACH

This method builds on the basic rating approach of Method 1 to take account of individual process complaint histories and compliance records.

Element 1: Risk rating

The risk rating developed for Method 1 represents the inherent level of environmental impact associated with the process category as a whole. It is based on historical data on enforcement actions taken and on the frequency of visits undertaken by regulators. As noted in the description of Method 1, this approach has flaws, particularly in relation to the use of past visit frequency. These flaws could be potentially overcome, however, by the use of an expert panel for classification of process types according to risk. On the basis of the existing rating, processes have been awarded a score for having low, medium, or high risk as shown in Table 3.

Table III: Classification of processes according to environmental impact

Low	Medium		High
Gasification Storage at terminal Service stations Cement and lime Bulk chemicals storage Waste oil burners (<0.4MW)	Waste oil burners (0.4-3MW) Non-ferrous metals Asbestos Other minerals Glass Ceramic FRP processes Acid processes	Cremation Di-isocyanate Tar and bitumen Coating Coating manufacture Timber Rubber	Combustion (not waste oil) Iron & steel Incineration (not cremation) Animal and plant treatment
Score = 10	Score = 20		Score = 30

Element 2: Complaint history

This component of the assessment takes into account the number of complaints received by regulators about the process. It reflects the fact that dealing with complaints can take up a considerable proportion of regulator time. It also reflects the fact that process categories with high nuisance potential can cause regulatory problems, even when their inherent risk is low. Because a range of factors can influence the number of complaints received, scoring is based on the number of incidents leading to complaints rather than the total numbers of complaints. This means that a process with a single incident leading to a number of complaints will not be penalised compared with a process having two incidents that each generated only one complaint. Scoring is limited to complaints in the year prior to the assessment being carried out to allow improved performance to be reflected when the assessment is updated. Table 4 details the scores to be awarded for different numbers of complaints.

Table IV. Complaint history assessment	
Number of incidents leading to complaints in the year prior to assessment	Score
None	0
One or two	5
More than two	10

Element 3: Current level of compliance

This component of the assessment concerns the performance of the process operator in achieving compliance with all aspects of the process authorisation, including emission levels and controls, monitoring, sampling, and measurement. It takes account of the fact that evaluating compliance will be the main purpose of routine inspections and therefore regulators will collect data on compliance as part of their normal activity. A finding of non-compliance implies that the process has potential to pose a risk to health or the environment and to generate additional work for the regulator in ensuring that steps have been taken to rectify the problems identified. Table 5 details the scores to be awarded for this component.

Table V: Compliance assessment	
Extent of compliance observed	Score
Fully compliant	0
Some minor non-compliance, not requiring formal enforcement	10
Major non-compliance leading to formal enforcement action	20

Overall scoring

Table VI : Overall scores	
Assessment criteria	Maximum score
Risk rating	30
Complaint history	10
Compliance assessment	20
TOTAL	60

Use of Scores

The scores can be used to derive indicators of regulatory effort, as shown in Table 7.

Table VII: Regulatory effort required	
Total score	Regulatory effort
20 or below	Low
25 to 35	Medium
Over 35	High

The main advantage of Method 2 is that it is simple and quick to apply. Information on the process risk rating is provided from national data, information on complaints should be held on file and information on compliance will be generated in the course of a routine visit. The criteria used are objective and limited judgement is required by regulators outside that required for normal oversight of processes. The method should therefore require only minimal time to apply. It also has the advantage, compared with Method 1, of taking account of individual operator performance in relation to complaints and compliance, the key factors affecting the effort required for regulation. It therefore provides the basis for an incentive to operators to improve performance, if it is linked to charges.

The main disadvantage of Method 2 is that 50 per cent of the score is awarded on the basis of the characteristics of the process category as a whole, rather than the individual process. Operators of high-environmental impact processes therefore only have limited opportunity to reduce their overall score on the basis of improved performance.

METHOD 3 - REVISED OPRA

This risk assessment methodology is based on the principles of Operator and Pollution Risk Assessment (OPRA) for IPC processes. It aims, however, to provide a more systematic means of assessment that is less open to subjective judgements and therefore more consistent and also less time-consuming. The approach developed in the OPRA methodology for waste management installations ('OPRA for Waste') has been taken as a guideline for the level of detail required.

Environmental impact appraisal

Inherent impact of process (risk rating from Method 1)

This methodology aims to reflect the fact that certain processes have inherently greater environmental impacts than others and may thus require greater regulatory effort. This is recognised in the 'OPRA for Waste' methodology where an inherently higher level of hazard (and thus higher score) is attributed to certain waste installations. For example, a small inert landfill will receive a score of 10 points whereas a special waste landfill will receive a score of 60 points.

Because there is greater variability in environmental impact within categories of LAPC process than within landfill types, types of processes covered by the regulations have been assigned to either high, medium or low environmental impact categories based on the ranking undertaken for Method 1. The classification and associated scores are detailed in Table 8.

As noted in the description of Method 1, this approach has flaws, particularly in relation to the use of past visit frequency. Furthermore, since the rating includes aspects of both inherent risk and of operator management, there exists the potential for double counting in relation to other factors used later in Method 3 (particularly consideration of prosecutions). These problems could potentially be overcome by setting up an expert panel to develop a more robust ranking of processes according to the inherent risks of a process.

Table VIII: Classification of processes according to inherent environmental impact			
Low	Medium		High
Gasification Storage at terminal Service stations Cement and lime Bulk chemicals storage Waste oil burners (< 0.4MW)	Waste oil burners (0.4-3MW) Non-ferrous metals Asbestos Other minerals Glass Ceramic FRP processes Acid processes	Cremation Di-isocyanate Tar and bitumen Coating Coating manufacture Timber Rubber	Combustion (not waste oil) Iron & steel Incineration (not cremation) Animal and plant treatment
Score = 10	Score = 20		Score = 30

Progress with upgrading

This section is concerned with the extent to which processes have been upgraded to comply with the requirements set out in their authorisation. Not only may processes that have not completed upgrading pose a greater potential risk they are also likely to require more regulatory effort in monitoring progress with the upgrading. There are several possible classifications:

- Upgrading to meet the requirements of the authorisation is not yet complete, due either to updating of the guidance note or variations to the process;
- Upgrading is complete and the process meets all of the current applicable permit requirements;
- Emissions control technology not only meets current requirements but goes beyond those requirements, resulting in lower emissions.

It has been widely acknowledged that upgrading is a key factor affecting regulatory effort and this category is included in the risk assessment method on this basis. Because of this, processes where upgrading is incomplete because of updating of the regulatory requirements is given a score of five whereas incomplete upgrading for other reasons is given a score of 10.

Table IX: Progress with upgrading	
Status of upgrading	Score
Upgrading not complete because Guidance Note deadline has yet to be reached	5
Upgrading not yet complete for other reasons	10
Upgrading complete and meets current regulatory requirements	0
Exceeds regulatory requirements	-10

Sensitivity and proximity of receptors

This criterion assesses the extent to which any receptors in the vicinity of a process could be impacted by emissions from the process. This will be determined by the sensitivity of the receptors in question (their number or the particular importance attached to them) and also by their proximity to the process. The sensitivity of receptors has been classified as high, medium, or low, as with the OPRA method for waste, for example:

- **High** - schools, residential areas, hospitals, designated environmental areas;
- **Medium** - offices, isolated residences, major roads, footpaths/cycle paths, agricultural land; and
- **Low** - public open space, minor roads, industrial areas, car parks, derelict land.

Whilst it is recognised that the distances at which different receptors are affected will vary according to the pollutant in question, this criterion is considered to be suitable for the purposes of this method (where simplicity and consistency are of prime importance).

Table X: Sensitivity and proximity of receptors

	Sensitivity of receptors		
Proximity to emission	High	Medium	
< 100m*	20	12	
100 - 250m*	12	10	
250 - 500m*	5	3	

* * All distances should be multiplied by a factor of 2 for mineral and cement & lime processes and by a factor of 4 for combustion, incineration (not cremation), iron & steel and non-ferrous metal processes.

This criterion is not intended to reflect the nuisance potential of a process, and thus the potential for complaints, but rather the potential for harm to the receptors in question. The single highest possible score applicable to the process from Table 10 should be awarded (the scores are not added up for different receptors). The highest score will not necessarily be the score for the most sensitive receptor. For example, where there is a high sensitivity receptor 300 metres away and a medium sensitivity receptor 150 metres away, the respective scores are five and 10, and the latter should be awarded.

Other targets

An additional 10 points should be scored if there are particular air pollution problems in the local area to which the process is a potential contributor, for example, where an Air Quality Management Area has been established for a pollutant emitted from the process.

Operator performance appraisal

Monitoring, maintenance and records

Scores are awarded on the basis of:

- Whether an operator has undertaken the monitoring specified in the authorisation;
- Whether the operator responds to remedy the causes of problems indicated by monitoring;
- Whether there is a documented maintenance programme, that has been adhered to and that has been adjusted to take account of any signs of deterioration with potential adverse effects upon emissions;
- Whether fully-documented records are available on-site; and
- Whether these records have been submitted to the local enforcing authority within the required timescales.

Each of these elements is awarded a score; the scores are then totalled. Where any of the elements is not applicable, a score of zero should be awarded.

Table XI: Assessment of monitoring, maintenance and records

Criterion	Score	
	Yes	No
All monitoring undertaken to the degree required in the authorisation?	0	10
Monitoring frequency reduced because results over time show consistent compliance?	-5	0
Process operation modified where any problems indicated by monitoring?	0	5
Fully documented and adhered to maintenance programme, in line with authorisation?	0	5
Full documented records as required in authorisation available on-site?	0	5
All relevant documents forwarded to the authority by date required?	0	5
Total score	(-5 to 30)	

Compliance assessment

Consideration should be given to any aspect of the process that has caused non-compliance in the last year. Thus, compliance is assessed in terms of individual incidents, such as those where a complaint has been received that can be identified as being linked to the process but that may or may not have breached a specific condition. A single incident that led to a number of complaints would still be counted as one incident for scoring purposes.

For each incident, a score is awarded according to the level of action required. If there has been no non-compliance, a score of zero is awarded. The maximum possible score is 40 points in order to reflect the importance of this aspect of the assessment in relation to the other criteria used.

Table XII: Compliance assessment	
Scale of non-Compliance	Score
Incident leading to a complaint[a]	5 per incident
Incident leading to an enforcement notice	15 per incident
Incident leading to a prohibition notice	20 per incident
Total	(max. 40)
[a] This should not include, for example, complaints which are considered by the inspector to be unreasonable or that cannot be clearly linked to an incident at the process.	

For example, a cement process received complaints on three occasions eight months ago from local residents. The emissions leading to the complaints were found to be due to a failure of a bag filter, which was remedied rapidly by the operator. The process also received an enforcement notice nine months ago in relation to a failure to record emissions in the log book. The score would be 15 points for the complaints and 15 points for the enforcement notice, giving a total of 30 points.

Management, training, and responsibility

This criterion assesses whether documented procedures for implementing all aspects of the authorisation are in place, with responsibility allocated to particular staff members. It also assesses whether completion of these responsibilities is checked and that staff with pollution control responsibilities are on site when polluting activities take place, have been given the degree of training specified in the authorisation and that there are documented and implemented programmes for staff training. The extent of documentation may vary, particularly for small processes. Any element that is not applicable to a process should be scored as zero.

Table XIII: Assessment of management, training, and responsibility		
Criterion	Score	
	Yes	No
Documented procedures in place for implementing all aspects of the authorisation?	0	5
Are specific responsibilities assigned to individual staff for these procedures?	0	5
Is completion of individual responsibilities checked and recorded by the company?	0	5
Are there documented training records for all staff with pollution control responsibilities?	0	5
Trained staff on site throughout periods where potentially-polluting activities take place?	0	5
Is there an 'appropriate' environmental management system in place[a]	0	5
Total	(0 to 30)	
[a] One which is tailored to the nature and size of the particular process, in line with the standard paragraphs for authorisations being introduced through the latest revision of the Process Guidance Notes		

Overall scoring

Table XIV: Overall scores	
Assessment criteria	Maximum score
A. Environmental impact appraisal	
Inherent impact of process	30
Progress with upgrading	10
Sensitivity and proximity of receptors	20
Other targets	10
B. Operator performance appraisal	
Monitoring, maintenance and records	30
Compliance assessment	40
Management, training and responsibility	30
MAXIMUM TOTAL	170

Regulatory effort is determined on the basis of the overall score for the process, theoretically ranging from 2 to 200. The regulatory effort requirements resulting from the scores awarded are indicated in Table 15.

Table XV: Determination of regulatory effort from scores	
Overall score	Regulatory effort
Less than 50	Low
50 to 100	Medium
Over 100	High

This method has been developed on the basis that the majority of the information required would be gathered during a routine inspection of a process and/or is already held by the local authority, limiting the extra effort required to undertake the appraisal. The method developed is relatively simple, as compared to the OPRA method for IPC processes, and requires less in the way of subjective judgements. This should provide greater consistency of appraisal. Whilst there is some requirement for the use of expert judgement in the application of the method, it is considered that it has the potential for greater consistency than the OPRA method for IPC processes.

However, it is recognised that this limits the extent to which expert judgement can be used in determining when a particular process presents a relatively high or low degree of risk. Most of the information used in the environmental impact appraisal will not vary much over time, which will help to limit the time taken to complete the assessment. Information on operator performance will have to be re-assessed more frequently, providing an incentive to operators to improve their performance and thus reduce their overall score. The scores will provide a basis for discussion with the operator of opportunities for performance improvement.

Unlike the OPRA for IPC scheme, this method does not take into consideration performance or controls beyond those required by the authorisation in most of the categories. The method therefore offers incentives to operators mainly in terms of their compliance with the authorisation rather than going beyond it.

METHOD 4 - SIMPLIFIED VERSION OF OPRA FOR IPC

This risk assessment method has been based upon the Operator and Pollution Risk Appraisal (OPRA) system, which is currently in use by environment agency inspectors for IPC processes. This method was considered since several local enforcing authorities have already introduced systems based broadly on this approach and also because it provides a useful and widely accepted framework for the assessment of risks from industrial processes.

The risk assessment attributes used in the 'OPRA for IPC' methodology are based upon an appraisal of the operator's competence in managing risks to the environment (operator performance appraisal [OPA]) and of the inherent risk associated with a process (process hazard appraisal [PHA]). Because of the lower level of risk inherent in LAPC processes, and because certain LAPC processes are regulated because of their nuisance rather than hazardous properties, the term 'environmental impact' has been used in place of 'pollution hazard'.

Operator Performance Appraisal and Environmental Impact Appraisal

Table 16 provides guidance on determining scores for the environmental impact aspect of the OPRA methodology. Some changes have been made to ensure applicability to the LAPC and to better reflect the level of regulation and guidance for the processes concerned. Descriptions are given of the performance against each criterion that would achieve a score of one, three and five; scores of two and four represent performance in between these scores.

Overall Scoring

The total score for the operator performance appraisal ranges from a minimum of seven to a maximum of 35 with the latter representing lowest risk. Scores for pollution hazard appraisal are the same but with the lower figure representing lowest risk. Using the approach taken by one local authority, an overall 'OPRA Rating' is calculated by subtracting the total EIA score from the total OPA score.

Table XVI: Guidance on quantifying environmental impact appraisal

Attribute	EIA of 1	EIA of 3	EIA of 5
1. Presence of environmentally-sensitive substances	Low toxicity, little or negligible potential to cause harm, for example inert non-hazardous particulates, CO_2	Medium potential to cause harm, for example NOx, SO_2, PM_{10}s, smog-related VOCs	Could result in serious harm to humans and/or the environment, for example inorganic chlorine, fluorine, carcinogenic VOCs, asbestos, dioxins, PAHs
2. Scale of environmentally-sensitive substances	Small-scale process with low inventories/releases of representative substance	Medium-sized process with average inventories/releases of representative substance	Major undertaking in relation to other processes within LAPC category, large-scale inventories/releases of representative substance

Table XVI: Guidance on quantifying environmental impact appraisal			
Attribute	EIA of 1	EIA of 3	EIA of 5
3. Frequency and nature of environmentally-sensitive operations	Very infrequent environmentally-sensitive operations. Clearly defined repetitive operation with little variability possible and very few changes	Occasional or moderately complex environmentally-sensitive operations	Complex and frequent environmentally-sensitive operations as compared to other LAPC processes. Irregular and variable schedule of operations. For example, process with frequent load changes, feedstock variations, equipment outages
4. Technologies for hazard prevention and minimisation	Meets or exceeds New Plant Standards. State-of-the-art, or inherently low pollution processes. No outstanding relevant improvement programmes	BATNEEC; meets process guidance notes for existing plant standards	Outmoded/poorly designed processes; significant relevant improvement programmes outstanding
5. Abatement technologies	State-of-the-art abatement processes; good dispersion. No outstanding relevant upgrading programmes	BATNEEC; stack heights adequate, dispersion sufficient from discharge points	Outmoded/poorly designed/unreliable abatement; significant relevant upgrading programmes outstanding; plume grounding at significant concentrations
6. Location of process	Low sensitivity area, for example, heavily industrialised, absence of designated areas, remote from populations (including other industry workforces) and amenity locations. Additional pollutant releases not likely to cause significant deterioration in environment or exceedance of environmental quality criteria	Medium sensitivity environment, mixed industrial/residential area, low-density populations nearby, or highly sensitive areas at some distance but potentially in effect range	Close proximity downwind to areas of high population and/or highly sensitive environment
7. Offensive characteristics	Inoffensive process containing substances causing no offence; for example, CO_2 releases to air, CH_4. No record of public concerns or complaints	Moderately offensive characteristics, for example, odours from esters, aldehydes, ketones, solvents. Moderately visible plumes. Some local public concerns	Highly offensive characteristics. Extremely unpleasant or annoying, either due to sight or smell. For example, highly visible smuts/particulates, highly visible plumes. Strong local concerns

Determination of regulatory effort

Table 17 indicates the regulatory effort based upon the overall OPRA rating score. Once again, three possible outcomes are considered.

Table XVII: Regulatory effort from scores	
Total score	Regulatory effort
-28 to -6	High
-5 to 5	Medium
6 to 28	Low

Advantages and disadvantages

The methodology requires around 10-20 minutes for completion of the assessment and possibly 5-10 minutes additional time on-site to collect the relevant data. There will be considerable variation in the time taken, though, according the complexity of the process in question, company-specific issues and also the level of experience of the inspector. There are also several factors in the method as developed for IPC processes that may only be relevant for relatively large processes or companies (which many LAPC processes are not). These include the existence of externally recognised, as compared to formalised, environmental management systems and the potential for such significant variations in process operations.

A scheme similar to this has been implemented by some local authorities, and has been reported as being successful in some, but not all, cases. It generally provides a reasonably comprehensive basis for consideration of the factors that make a process more or less risky. However, the level of judgement required means that inspectors need to be experienced with a range of LAPC processes in order to assess them comparatively. Not all inspectors will have such experience, especially in authorities with very few process types, which could lead to inconsistency in assessment of processes.

ANNEX 3-3. THE ENFORCEMENT AND PROSECUTION POLICY APPLIED BY THE ENVIRONMENTAL AGENCY OF ENGLAND AND WALES

INTRODUCTION

1. The Environment Agency's aim is to provide a better environment for England and Wales both for the present and for the future. It will achieve much of this through education, by providing advice and by regulating the activities of others. Securing compliance with legal regulatory requirements, using enforcement powers including prosecution, is an important part of achieving this aim.

2. The Agency's functions are extensive. They include pollution control, waste regulation, the management of water resources, flood defence, fisheries, conservation and navigation. The activities dealt with range from the regulation of recreational pursuits to the most complicated industrial processes.

3. Agency staff work with Local Government and other Regulators on matters such as planning, air pollution, public health and occupational safety to ensure coherent regulation. They also work with many conservation bodies, voluntary groups and non governmental organisations in order to achieve common goals.

4. The Agency regards prevention as better than cure. It offers information and advice to those it regulates and seeks to secure co-operation avoiding bureaucracy or excessive cost. It encourages individuals and businesses to put the environment first and to integrate good environmental practices into normal working methods.

5. This Policy sets out the general principles which the Agency intends to follow in relation to enforcement and prosecution. It is to be used in conjunction with more detailed specific guidance for staff in respect of each of the Agency's functions. The implementation and effectiveness of the Policy will be monitored by the Agency.

PURPOSE AND METHODS OF ENFORCEMENT

6. The purpose of enforcement is to ensure that preventative or remedial action is taken to protect the environment or to secure compliance with a regulatory system. The need for enforcement may stem from an unlicensed 'incident' or from a breach of the conditions of a licensed activity. Although the Agency expects full voluntary compliance with relevant legislative requirements and licence provisions, it will not hesitate to use its enforcement powers where necessary.

7. The powers available include enforcement notices and works notices (where contravention can be prevented or needs to be remedied), prohibition notices (where there is an imminent risk of serious environmental damage), suspension or revocation of environmental licences[1], variation of licence conditions, injunctions and the carrying out of remedial works. Where the Agency has carried out remedial works, it will seek to recover the full costs incurred from those responsible.

8. Where a criminal offence has been committed, in addition to any other enforcement action, the Agency will consider instituting a prosecution, administering a caution or issuing a warning.

PRINCIPLES OF ENFORCEMENT

9. The Agency believes in firm but fair regulation. Underlying the policy of firm but fair regulation are the principles of; proportionality in the application of the law and in securing compliance; consistency of approach, transparency about how the Agency operates and what those regulated may expect from the Agency, and targeting of enforcement action.

Proportionality

10. In general, the concept of proportionality is included in much of the regulatory system through the balance of action to protect the environment against risks and costs.

11. Some incidents or breaches of regulatory requirements cause or have the potential to cause serious environmental damage. Others may interfere with people's enjoyment or rights, or the Agency's ability to carry out its activities. The Agency's first response is to prevent harm to the environment from occurring or continuing. The enforcement action taken by the Agency will be proportionate to the risks posed to the environment and to the seriousness of any breach of the law.

Consistency

12. Consistency means taking a similar approach in similar circumstances to achieve similar ends. The Agency aims to achieve consistency in advice tendered, the response to pollution and other incidents, the use of powers and decisions on whether to prosecute.

13. However, the Agency recognises that consistency does not mean simple uniformity. Officers need to take account of many variables: the scale of environmental impact, the attitude and actions of management, and the history of previous incidents or breaches. Decisions on enforcement action are a matter of professional judgement and the Agency, through its officers, needs to exercise discretion. The Agency will continue to develop arrangements to promote consistency including effective arrangements for liaison with other enforcing authorities.

Transparency

14. Transparency is important in maintaining public confidence in the Agency's ability to regulate. It means helping those regulated and others to understand what is expected of them and what they should expect from the Agency. It also means making clear why an officer intends to, or has taken enforcement action.

15. Transparency is an integral part of the role of Agency Officers and the Agency continues to train its staff and to develop its procedures to ensure that:

- Where remedial action is required, it is clearly explained (in writing, if requested) why the action is necessary and when it must be carried out; a distinction being made between best practice advice and legal requirements.
- Opportunity is provided to discuss what is required to comply with the law before formal enforcement action is taken, unless urgent action is required, for example, to protect the environment or to prevent evidence being destroyed.

- Where urgent action is required, a written explanation of the reasons is provided as soon as practicable after the event.
- Written explanation is given of any rights of appeal against formal enforcement action at the time the action is taken.

Targeting

16. Targeting means making sure that regulatory effort is directed primarily towards those whose activities give rise to or risk of serious environmental damage, where the risks are least well controlled or against deliberate or organised crime. Action will be primarily focused on lawbreakers or those directly responsible for the risk and who are best placed to control it.

17. The Agency has systems for prioritising regulatory effort. They include the response to complaints from the public about regulated activities, the assessment of the risks posed by a licence holder's operations and the gathering and acting on intelligence about illegal activity.

18. In the case of regulated industries, management actions are important. Repeated incidents or breaches of regulatory requirements which are related may be an indication of an unwillingness to change behaviour, or an inability to achieve sufficient control and may require a review of the regulatory requirements, the actions of the Operator, and additional investment. A relatively low hazard site or activity poorly managed has potential for greater risk to the environment than a higher hazard site or activity where proper control measures are in place. There are, however, high hazard sites (for example, nuclear installations, some major chemical plants, or some waste disposal facilities) which will receive regular visits so that the Agency can be sure that remote risks continue to be effectively managed. The Agency will continue to develop models and tools to enable risks to be assessed and compared.

PROSECUTION

Purpose

19. The use of the criminal process to institute a prosecution is an important part of enforcement. It aims to punish wrongdoing, to avoid a recurrence and to act as a deterrent to others. It follows that it may be appropriate to use prosecution in conjunction with other available enforcement tools, for example, a prohibition notice requiring the operation to stop until certain requirements are met. Where the circumstances warrant it, prosecution without prior warning or recourse to alternative sanctions will be pursued.

20. The Agency recognises that the institution of a prosecution is a serious matter that should only be taken after full consideration of the implications and consequences. Decisions about prosecution will take account of the Code for Crown Prosecutors.

Sufficiency of evidence

21. A prosecution will not be commenced or continued by the Agency unless it is satisfied that there is sufficient, admissible and reliable evidence that the offence has been committed and that there is a realistic prospect of conviction. If the case does not pass this evidential test, it will not go ahead, no matter how important or serious it may be. Where there is sufficient evidence, a

prosecution will not be commenced or continued by the Agency unless it is in the public interest to do so. Public interest factors that can affect the decision to prosecute usually depend on the seriousness of the offence or the circumstances of the offender.

Public interest factors

22. The Agency will consider the following factors in deciding whether or not to prosecute:

- **Environmental effect** of the offence,

- **Foreseeability** of the offence or the circumstances leading to it,

- **Intent** of the offender, individually and/or corporately,

- **History** of offending,

- **Attitude** of the offender,

- **Deterrent effect** of a prosecution, on the offender and others.

- **Personal circumstances** of the offender

23. The factors are not exhaustive and those which apply will depend on the particular circumstances of each case. Deciding on the public interest is not simply a matter of adding up the number of factors on each side. The Agency will decide how important each factor is in the circumstances of each case and go on to make an overall assessment.

Companies and individuals

24. Criminal proceedings will be taken against those persons responsible for the offence. Where a Company is involved, it will be usual practice to prosecute the Company where the offence resulted from the Company's activities. However, the Agency will also consider any part played in the offence by the officers of the Company, including Directors, Managers and the Company Secretary. Action may also be taken against such officers (as well as the Company) where it can be shown that the offence was committed with their consent, was due to their neglect or they 'turned a blind eye' to the offence or the circumstances leading to it. In appropriate cases, the Agency will consider seeking disqualification of Directors under the Companies Act.

Choice of court

25. In cases of sufficient gravity, for example serious environmental damage over a wide area, where circumstances allow, consideration will be given to requesting the magistrates to refer the case to the Crown Court. The same factors as listed in paragraph 22 (above) will be used, but including consideration of the sentencing powers of the Magistrates' Court.

Penalties

26. The existing law gives the courts considerable scope to punish offenders and to deter others. Unlimited fines and, in some cases, imprisonment may be imposed by the higher courts. The Agency will continue to raise the awareness of the courts to the gravity of many environmental offences and will encourage them to make full use of their powers. Examples of penalties presently available to the courts for certain environmental offences are:

- Magistrates' Courts; up to 6 months imprisonment and/or £20,000 fine.

- Crown Court: up to 5 years imprisonment and/or an unlimited fine.

27. The Agency will always seek to recover the costs of investigation and Court proceedings.

Presumption of prosecution

28. Where there is sufficient evidence, the Agency will normally prosecute in any of the following circumstances:

Incidents or breaches which have significant consequences for the environment or which have the potential for such consequences. The Agency takes seriously such incidents or breaches.

Carrying out operations without a relevant licence. It is a pre-requisite to successful regulation that those required to be regulated come within the appropriate licensing system.

Excessive or persistent breaches of regulatory requirements in relation to the same licence or site.

Failure to comply or to comply adequately with formal remedial requirements. It is unacceptable to ignore remedial requirements and unfair to those who do take action to comply.

Reckless disregard for management or quality standards. It is in the interests of all that irresponsible operators are brought into compliance or cease operations.

Failure to supply information without reasonable excuse or knowingly or recklessly supplying false or misleading information. It is essential that lawful requests for information by the Agency are complied with and that accurate information is always supplied to enable informed regulation to be exercised.

Obstruction of Agency staff in carrying out their powers. The Agency regards the obstruction of, or assaults on, its staff while lawfully carrying out their duties as a serious matter.

Impersonating Agency staff. The Agency regards impersonation of staff, for example, in order to gain access to premises wrongfully, as a serious matter.

Alternatives to prosecution

29. In cases where a prosecution is not the most appropriate course of action, the alternatives of a caution or warning will be considered, the choice depending on the factors referred to above.

30. A caution is the written acceptance by an offender that they have committed an offence and may only be used where a prosecution could properly have been brought. It will be brought to the Court's attention if the offender is convicted of a subsequent offence.

31. A warning is a written notification that, in the Agency's opinion, an offence has been committed. It will be recorded and may be referred to in subsequent proceedings.

32. As with a prosecution, additional enforcement mechanisms may also be used in conjunction with a caution or warning.

Working with other regulators

33. Where the Agency and another enforcement body both have the power to prosecute, the Agency will liaise with that other body, to ensure effective co-ordination, to avoid inconsistencies, and to ensure that any proceedings instituted are for the most appropriate offence.

PART 4
CONDUCTING ON-SITE VISITS

PART 4
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CHAPTER 4.1
CRITICAL POINTS IN ORGANISING ON-SITE VISITS

This Part of the Toolkit discusses practical aspects of inspection. Field inspectors are its main target audience.

4.1.1 Purpose and core requirements for organisation of on-site visits

The major purpose of an on-site visit is to assess compliance with environmental requirements. Inspections may involve the examination of real estate or personal property, equipment, buildings, records, by-products, wastes, processes, activities, environmental conditions (*i.e.* air, soil and water quality), etc. During the visit, the inspector checks whether his/her observations in the field are consistent with the data collected during the preparation stage. Inspections may include, but are not limited, to the following activities: observation; sampling; measuring; photographing; coring; drilling and excavating; reviewing and copying records; and seizing equipment, products, material or records. Within a modern inspection system, scheduled on-site visits should cover not only compliance checking, but also elements of compliance assistance to promote operators' knowledge and understanding of their environmental obligations.

The organisation of on-site visits should follow a core set of requirements:

- The on-site visits should be regularly carried out according to well-prepared schedules;
- The practice of conducting on-site inspections should comprise both announced and unannounced visits;
- The full range of regulated environmental impacts should be examined, and, preferably, the visits should be carried out through an integrated approach;
- Timely response to incidents should be assured;
- When site visits are carried out by more than one department of the inspectorate, or by different enforcement authorities, co-ordination should be ensured;
- Every site visit should be recorded and the record filed; a duly-made inspection report should be prepared shortly after the visit;
- Findings of the on-site inspection should be communicated to facility operators and the inspection report made available to the general public;
- After the evaluation of findings, conclusions regarding further action should be made. Appropriate non-compliance response should be provided;
- Incidents, accidents, or violations should be followed up.

While the decision to conduct an inspection belongs to the management of the inspectorate, field inspectors will implement this decision according to certain procedures and performance standards, and strictly in the limits of their mandate to inspect and provide non-compliance response. They will provide feedback to their managers on bottlenecks and possible improvements in legal provisions, inspection, and enforcement strategies.

4.1.2 Major stages of on-site visits

A field visit will generally comprise the following major stages:

- Entry and the opening meeting;
- Examination of the facility or any aspects related to the compliance status;
- Preliminary evaluation of findings;
- closing meeting.

These stages will have limited effect without adequate planning prior to the field visit and follow-up upon completion.

Sections 4.2 and 4.3 introduce the basic procedure that has to be followed during the preparation and execution of a field visit. In addition, the annexes to Part 4 present several internal guidelines to environmental inspectors on the procedures to be followed during on-site inspections. They are nothing more than examples that can be followed and therefore need careful adaptation to the specifics of country's regulatory system.

4.1.3 Right of entering a facility

The legal authority of entering a facility or private property is a pre-requisite for conducting inspection; this authority is commonly specified by the law. Under no circumstances should the inspector assume authority without thorough knowledge of the law and adherence to required procedures of entry on-site. For instance, there may be legal requirements for the inspector, such as notifying the facility prior to the inspection and entering the private property only after receiving the owner/operator's consent, or through due process by a court of law.

Most inspectorates' policy is to seek consensual entry first. "Consent" means authorisation given voluntarily by the owner or the operator to conduct an inspection. The consent for inspection may be related to, for example, an activity requiring a permit, licence, or other approval from the environmental authorities. Under different regulatory regimes, obtaining consent for entry may be formalised to a different extent, and verbal or written form Consents may be obtained from facility operators during the permit application process; they may not be revoked on-site at the time of inspection and may only be revoked in writing by withdrawing the underlying application(s). The consent may be subject to certain limitations of scope and the inspection will usually not exceed this scope.

If consensual entry is denied, the inspectorate should request a court to enforce the inspectorate's legal authority by issuing an inspection warrant, *i.e.* an order authorising the inspectorate to enter an otherwise legally protected area to inspect, search and/or seize property or evidence of a possible violation of an environmental law or regulation. There are two kinds of warrants an agency may seek: for either civil administrative or criminal proceedings. A civil administrative warrant may be issued if: (1) a reasonable cause exists to believe that a violation has occurred, is occurring, or is likely to occur at the facility; or (2) the facility needs to be inspected because of a pre-existing inspection plan. Criminal warrants are granted for "probable cause" that a crime has been or is being committed. The inspector is then strictly limited to the tasks identified in the inspection warrant.

4.1.4 Team work during on-site visits

In the framework of complex inspections, teamwork is the cornerstone to effectiveness. A single team member who acts alone and without consideration and respect to others, may jeopardise the entire effort.

Facility staff quickly learn that they can disrupt an inspection by dividing team members and creating confusion, therefore coordination and planning are critical to the smooth execution of any inspection. It is especially important where an enforcement action is envisaged. A chain of command is necessary for coordination, and to deal with issues affecting two or more team members, or between the facility and the team. The team leader should serve as the central focus of critical information and encourage team members to share information within the bounds of the team and its objectives.

Communication must be maintained through all phases of the planning, preparation and execution of the inspection, case development, and potential enforcement. At the same time, confidentiality must be maintained throughout the entire exercise, from planning to enforcement referral. This applies to all activities and communications outside the team.

4.1.5 Code of conduct during on-site visits

With due respect to her/his role, while conducting a field inspection, the inspector should maintain a good working relation with the company and respect its rights, constraints, and rules. The following are the main principles that should be followed:

- The inspector represents the inspectorate, and thus must conduct him or herself in a professional manner and maintain credibility. Polite and rational discourse is a mandatory skill. As an agent of the government, the inspector should constantly strive to maintain the highest standards of thoroughness, ethical conduct and quality assurance;
- Cooperation between inspectors and facility management generally is the best way to reach good results. As much as possible, inspectors should restrict their on-site activities to the normal working hours of the company and minimize the disruption caused by the on-site visit;
- The inspection team should implement appropriate field note-taking methods and proper document control procedures. Respect for the company's request of confidentiality of their business information should be the rule as long as it does not affect the conduct of the inspector's duties. There could be severe consequences if proprietary information is released to the public or to competitors;
- Confidentiality is also important for inspectors who must assure that important documents are not left unattended at the company. All inspectors should maintain sensitivity to multimedia issues and implications and freely discuss, with other inspectors (of the inspecting team), observations/findings relating to one or more fields covered by the environmental laws and other relevant laws. Sensitive discussions, however, should not take place in front of company personnel or on company telephones;
- Fairness and equity must be inherent to the inspector's work. The tendency to become obsessive of the authority and power given to them should be prevented, and literally fought, by all means. The power of authority should always be preceded by the power of knowledge and thorough work;
- Inspectors must set an example in the implementation of proper procedures to demonstrate the credibility of their findings.

Based on such general principles, and the specific requirements of national regulatory regimes, the inspectorate should develop a handbook to provide detailed guidance to inspectors for preparing and conducting on-site visits. Furthermore, inspectors should be trained not only in legal and technical aspects of inspection, but also in such matters as communication, negotiation techniques, and conflict handling.

4.1.6 Management of inspection-related data

The proper management of data relevant for compliance assurance is extremely important. Such data can be instrumental in preparing for a site visit or carrying out any other inspection activities. They can be used as background information for priority setting or reporting, for monitoring purposes, as well as for building up pressure against violators and for stimulating those who do comply.

Records on compliance and enforcement history are indispensable for the inspectorate's memory and should not be "stored" in the brains of inspectors only. In the absence of a proper data recording system, a change of staff for instance, the situation could arise where companies are able to offend the rules without the inspectorate realising that the violations are recurrent.

Storage of information can both be done in written form (paper administration) and electronic form (computer system). Whatever mode is chosen, the accessibility of the information must be well arranged. Using a central system of data storage and uniform procedures governing data production and flows can strengthen the quality and accessibility of data. For the management of a data system it is generally useful to have a high degree of central storage. Working dossiers however could – under certain conditions safeguarding confidentiality – be stored in the direct vicinity of the inspector using the dossier at that very moment. This however should not lead to a pile up of dossiers in or around the workplace of the inspector. If a paper dossier is taken from the central data storage to the inspector's workplace, this should be clearly indicated in a special register. At any time it must be possible to locate a dossier. In automated data storage systems dossiers generally will not have to be moved physically, but can be consulted electronically through local area networks.

Access to the information should be protected from accidental public release but should be available to others in the inspectorate or in related organisations. For example, a permit-writer may find very useful information in inspection reports even though that information will not be used for enforcement or subsequent inspections. To distinguish the different types of information, a validation procedure is generally desirable before its storage.

To prevent the inspectorate from drowning in documents/data, they generally set terms for storage of information. Some information (*e.g.* the minutes of internal meetings) is destroyed after one year. Other information may be stored for 10 years or more, like reports on non-compliance or fines that were imposed.

The inspectorate management should set guidelines for the clean-up of data stored. Clean-up should be done in a professional manner, *i.e.* destroying the document in such a way that they cannot be found (*e.g.* in a garbage bin) by third parties and that they are completely cut into pieces and/or burnt. This is especially important for documents that (may) contain confidential information, either on individuals or on industrial processes.

CHAPTER 4.2
PREPARATION OF AN ON-SITE VISIT

4.2.1 Steps in preparing an inspection

After the decision to conduct an inspection is taken, the inspector will have to prepare the on-site visit. The effort invested in the preparation depends on the type of inspection (integrated or single-medium) and the size, scale, and complexity of the installation.

In general, several steps will be necessary to follow:

- **Step 1 : Surveying the compliance history and other data available.** The inspector should gather information that can help develop a good understanding of the technical, regulatory, and enforcement aspects of the site or facility.
- **Step 2 : Focusing the inspection.** The inspector should determine the most important issues for the inspection; identify inspection approaches and its focus. The outcome of this activity takes the form of an inspection plan that is consistent with the overall compliance assurance strategy.
- **Step 3 : Deciding on the need for prior notification**. The inspector should decide whether he/she needs to announce the inspection and, if so, send the notification.
- **Step 4 : Obtaining clearances, and performing liaison and co-ordination**. The inspector should co-ordinate the field visit internally and with other enforcement partners.
- **Step 5 : Preparing the inspection tools.** The inspector should identify and prepare any equipment and documents that will be needed to conduct the on-site inspection.
- **Step 6 : Taking safety precautions.** The inspector should identify all risks that may exist, plan the safety measures to be taken and prepare protective equipment.

4.2.2 Information sources

An inspector who is well-informed about the company will be a credible partner for the company's management and will thus be respected by his counterparts. Therefore a key to successful on-site visits is awareness about the situation, activities and processes, compliance history, and other aspects of the site to be visited.

Much information about the site or company is available, be it in the files of the inspectorate, or publicly. The key sources of information to be consulted prior to the on-site visit are:

- Reports and correspondence on former inspections;
- Notices sent to the company, including former infringements;
- Reports on the company from other authorities (including those abroad);
- Permit applications and permits(s);

- Discussions with colleagues and managers;
- ISO 14001 certificates and any other certificates;
- Police files or reports;
- Information from the chamber of commerce;
- Organisational chart of the company;
- Company's business partners;
- Notifications on environmental incidents;
- Company environmental reports;
- Citizen's complaints;
- Research reports or audit reports;
- Internet: company-specific information, relevant legislation and best available techniques (for instance, data on latest developments in techniques are available on the web site http://eippcb.jrc.es);
- Press releases concerning the company, including advertisements and vacancies;
- Information from the Fiscal Inspectorate;
- Other sources.

Complaints of citizens, but also of (neighbouring) companies can be important indicators for inspectors in the preparation of their site visits. Citizen complaints sometimes lead to a sort of "fire brigade approach", meaning that every complaint is followed by a reaction of the inspectorate by carrying out a site visit. This approach can, in spite of the (temporarily) positive radiation towards the public, be rather risky for several reasons:

- Not all complaints reflect a situation of non-compliance;
- Not all situations of non-compliance indicated by a complaint are equally relevant;
- Complaints can be "revenge-driven";
- Complaints can be "competition-driven";
- Complaints often will not reflect the real environmental priorities and can draw limited resources away from strategic approaches.

Therefore complaints should not be a main driver in carrying out inspections. They should be carefully used for inspection planning and preparation purposes.

4.2.3 Development of the inspection plan

The development of a sound inspection plan prior to going on-site is as important to the total compliance monitoring and enforcement process as the generation of a high-quality, well-documented inspection report. The inspection plan serves several purposes:

- States the reason for inspection: a brief history of why the inspection is taking place and the inspection objectives (*i.e.* what is to be accomplished);
- Records the scope of the inspection: identifies the functional areas, assessment topics, and level of inspection;

- Specifies inspection procedures and associated rationales to the extent known beforehand: which field and analytic techniques will be used to collect what information; what record-keeping systems will be reviewed; which personnel will be interviewed; which samples will be collected; and for each step, why they should be collected;
- Defines task assignments within the inspection team, objectives of each team member, and time scheduling;
- Details resource requirements (costs) based upon planned activities and time allocations;
- Provides clear guidance for what evidence should be collected and documented;
- Identifies a safety contingency plan, where required. This is particularly relevant if inspection takes place upon the occurrence of an accident;
- Informs management of the inspectors activities ensuring clear expectations and an understanding of resource implications;
- When appropriate, includes a sampling plan and a safety plan as annexes.

Box 4-1. Some basic elements of the inspection plan

While the length and complexity of the plan may vary, it should include at least the following elements:

OBJECTIVES

- What is the purpose of the inspection? What is to be accomplished?

TASKS

- What records, files, licenses, regulations will be checked?
- What co-ordination with laboratories, other governmental or local authorities is required?
- What information must be collected?
- What samples will be taken and/or tests will be conducted?

PROCEDURES

- Announced or unannounced inspection?
- What specific company processes will be inspected?
- What procedure will be used?
- What are responsibilities of each member of the team?
- How will the reporting be organised?

RESOURCES

- What personnel will be required?
- What equipment will be required?
- What laboratory analysis will be required?
- What findings will be required for travel or other expenses?

SCHEDULE

- What will be the time requirements and order of inspection activities?
- What will be milestones? What is essential/what is optional?
- Is any follow-up to be anticipated?

Source: IMPEL (1999), Reference Book for Environmental Inspection.

The inspection plan should be based on in-depth knowledge of the available dossier of the installation(s) to be inspected. The investment of time required to produce a quality inspection plan is worth the effort because it will save time and resources during the actual inspection. The plan will also demonstrate the professionalism and credibility of the inspectors to the facility personnel. At the same time, the inspector must assess precisely what issues are appropriate to address in a short planning document. For short inspections of small sites a detailed inspection plan may not be required. A standard format can make the preparation of the plan easier and more streamlined.

The inspection plan should recognise and allow for changes throughout the inspection should unexpected events or observations occur. The plan must not stop the inspector from responding to new information, but anticipate the need for flexibility on-site.

4.2.4 Inspection notification

During the preparation phase, a decision will be taken as to whether or not to announce the field visit. Both announced and unannounced inspections have clear advantages. Announcement will offer the operator and inspector the opportunity to discuss informally the scope of the inspection and other points. It will also allow the facility to gather appropriate documents and personnel. The advantage of an unannounced inspection is that the installation can be seen in its actual state, without any of the improvements that are commonly done by operators in the period between the inspection notification and the on-site visit.

Prior inspection notification should be given with the least forewarning possible to prevent destruction of evidence of non-compliance. Most major violations are not easily covered up in a short span of time. On the contrary, it is not so difficult to hide apparently lesser issues that can eventually lead to major concerns if undetected. Illegal disposal, irregularities of housekeeping and day-to-day operations may only take minutes to disappear.

4.2.5 Clearances and liaison work

All administrative clearances should be taken care of during the preparation phase. The inspector should obtain all necessary credentials to enter the facility. The inspector should make his immediate chain of command familiar with the objectives and schedule of the inspection, and the inspection plan should be approved by management. If another person but the “usual” inspector performs the inspection, the latter one should be informed, consulted, and involved.

There may be other local or national agencies that have information on the facility to be inspected, as well as overlapping or parallel responsibilities. They should be notified about the inspection and involved in its planning. Especially where these entities feel territorial about a facility, there may be serious repercussions if co-ordination is disregarded.

4.2.6 Inspection tools

The inspection kit should contain all of the necessary documents, notices, a notebook, and any checklists that might be needed during the inspection. All necessary equipment should be collected, checked, and provided with back-up where necessary.

Inspection notebook

It is advisable that the inspector opens a site-specific or event-specific "notebook" to record the information learned during the inspection. There are simple reasons for this: (1) it may become evidence and it becomes burdensome to maintain the confidentiality of other sites and events that may be in the same notebook; (2) contrary to common perceptions, a dedicated notebook saves paper and money. If there is more than one site or event entered in a single notebook and it becomes necessary to copy notebook entries or edit other information, the labour, potential for litigation, and cost of materials quickly exceeds the cost of separate notebooks.

The notebook should be small enough not to impede the normal activities of an investigation. Most inspectors prefer a notebook they can store easily in a pocket or briefcase. Some notebooks are available with water resistant paper. Pagination is required to show that nothing is missing and for easy access to entries.

The inspector's notebook is a unique document, intended for the personal use of the inspector to assist in constructing a more detailed final report. The name of the site or event and the date should be recorded on each page, as well as the inspector's name or initials. The following are some practical considerations in taking and keeping field notes in a notebook:

- Write initial entries on only one side of the notebook. The opposite page can then be used to add further details as they become available, allowing the inspector a means of going back to add information in the appropriate location;
- Entries in the notebook should be objective, factual, and without subjective conclusions. Professional opinions may be noted, such as an engineering analysis. Inspectors also may write a subjective opinion as a reminder for further follow up. In either case the reasoning should be identified;
- Inspectors have to be careful about the language they use because notebook entries may be disclosed in future litigation;
- Field notes should be made with as much contemporaneity as possible;
- Anything given to the facility or taken from the site, including samples and documents, should be thoroughly and accurately logged;
- Business cards should be clipped/stapled in the notebook for later reference;
- Photographs should be identified in the inspector's notebook;
- The notebook should be protected from moisture. There are several types available that are resistant to rain but still accept pencil or ink.

What should go into the notebook?

1. Inspector's name;
2. Any information relative to the site or event;
3. Site entry procedures, events, and contacts, especially if there were problems;
4. The names of site contacts should be recorded, as well as their titles and phone numbers or means of contacting them at a later date;
5. Times and dates of specific events should be recorded in the notebook;
6. Deviations from any established protocol or procedure should be thoroughly recorded;
7. Interview notes;

8. Names and contact information of anyone interviewed;
9. Discussion of unusual conditions;
10. All sampling information;
11. Photograph/video log;
12. Items or material taken or given, and who gave and/or received it.

The notebook or field notes should be kept as part of the inspection file. Even after the final report is completed, in some countries the inspector's notes can be an important reference if questions arise later in the enforcement process.

Checklists

A checklist is a tool to assist the inspection process and should make clear, for instance, the items and/or situations that require attention. Developing site-specific checklists is not always advantageous: after a certain period of time, the checklist will become out-dated. Also this implies the risk of ignoring subjects that were not included in the list. Drawing up sector-specific checklists is considered to be more useful. Such lists can help an inspector to keep track of all the different relevant environmental aspects of a certain sector of industry. It must be kept in mind that checklists are an important tool but cannot replace the critical mind of an experienced inspector. They can serve as a useful road map or reminder but should not restrict the inspector from changing direction based on unexpected observations.

4.2.7 Risk identification and safety precautions

There are tens of thousands of chemicals produced, stored, transported or used annually. Industrial sites producing or using these chemicals have process machinery, transporting equipment, structures, and conditions that present their own hazards. Therefore environmental compliance inspections are potentially dangerous and inherent danger must be minimised through adequate knowledge and planning. Inspectors should arrive at the site well prepared as regards their own safety; they need to be aware of risks related to on-site visits and take proper precautions.

To find out which preventive or corrective measures could be taken, the dimensions of the risk should first be identified. Such an analysis can be performed by the inspector himself/herself. After conducting the analysis, the inspector will be able to evaluate the different levels of risk. For example, the Dutch Inspectorate distinguishes three levels of risk as concerns sampling on-site (Box 4-2). The reader should note that these are just examples, not all situations are mentioned and actual circumstances may mean that another risk level is more appropriate.

Box 4-2. Three levels of risk distinguished by the Dutch Inspectorate for the environment

Risk level 1 (Low)
Waste water treatment plants;
Restaurants, pubs;
Routine inspections of ship yards;
Waste water sampling at dairy farms;
Bilge water under good circumstances;
Assisting at environmental inventories;
Thermally polluted waste water;
Routine inspection at a high altitude (storage tanks);
Suspected soil and waste;
Chemical process industry/metallurgical industry with good provisions concerning labour circumstances.

Risk level 2 (Medium)

Chemical process industry/metallurgical industry;
Non-routine inspection at high altitude;
Near traffic;
Bilge water under unfavourable circumstances;
Possibility of dangerous gasses being given off; and/or aerosols;
Sampling of unknown facilities;
Surface water sampling from the shore, gangway inspection of ships etc.;
During weekends, evening, and night time;
Near waste water streams with a possible very high pH value (pH ≥ 10) or very low pH value (pH ≤ 3);
Site inspections with possibly increased concentrations of dangerous substances in the streams to be sampled;
Manure in storage tanks or ships.

Risk level 3 (High)

All **non-routine** investigations;
Unforeseen circumstances, like disturbances in the manufacturing process, or fire;
On discovery of peculiar situations;
Chemical process industry/metallurgical industry, other than level 2;
Sampling tank trucks or tank boats;
Circumstances/working under pressure;
Inspection of facilities that utilise highly toxic or dangerous chemicals.

Unless the law says so, it may not be expected that the site-owner will provide the required safety equipment. The inspector should be aware of the facility's safety requirements and basic first aid available. It is advisable that the inspector be familiar with the location of medical assistance in the event of an emergency. Safety requirements can be gathered from internal operation rules, personnel that have previously taken samples or conducted inspections at the facility, or by contacting the facility. Many facilities require that all visitors be briefed on site safety which will help familiarise inspectors to the specific hazards.

Appropriate protective clothing and safety equipment must be prepared (and used) to minimise risks during on-site visits. Protective gear must be adequate to prevent accidental exposure to chemicals, pesticides, etc. through the eyes, nose, mouth, and skin. Selecting the appropriate safety equipment for sampling depends on the type and volume of material to be sampled.

The following protective equipment should be available, when necessary:

- Hand protection – organic liquid-proof gloves, preferably of latex or synthetic rubber, long enough to protect the wrist; always match the sort of glove to the material to be sampled. Gloves should not be folded; this will weaken them. Also they should not be put away inside out. While still on hands, the gloves should be washed with water before storing them in a cool and dry place;
- Eye protection – safety glasses, goggles, or face shield;
- Ear protection;

- Protective footwear – in the form of rubber soled, non-skid, metal soled and toed shoes, and plastic disposable shoe covers, or rubber/neoprene boots. Always pay attention that the sole is resistant to chemicals, oil, and grease;
- Hard hat;
- A container with plain water;
- Life vest (in case of dangerous situations when sampling surface waters);
- Coveralls or long rubber apron;
- Respiratory protective device when exposed to toxic materials.

Inspectors must beware that the use of protective devices requires appropriate training and fit-testing. Before using this type of equipment, the inspector should ensure that their training and fit-testing is current. Wrong use can be dangerous.

Below, several safety hints addressed to inspectors are listed:

- Study the safety situation and prepare your safety equipment before the sampling trip;
- Do not enter confined spaces, unless properly trained;
- Take regular health and safety training courses;
- Read safety labels;
- Be aware of the facility's safety requirements and emergency treatment (first aid);
- Not only have, but use your safety equipment;
- Be prepared for improperly stacked materials, bad lighting, poor ventilation, moving equipment, and spilled materials;
- Always use the proper tools, do not improvise;
- Have clean water at hand during the sampling;
- Have a cellular telephone and emergency numbers at hand during the sampling.

Above all, the inspector should not put himself/herself in a situation they believe is dangerous. Facility personnel may not recognise all hazards, and the inspector should not follow them into areas where the inspector believes the risks are too high. The inspector's health is more important than any observation or finding that would put him in jeopardy.

Figure 4-1. International symbols of danger

Explosive

Substances that can explode through contact with fire, or are more sensitive to bumping and rubbing than dinitrobenzene.

Oxidizing

Substances that can, through contact with other substances, especially flammable substances, react strongly in an exothermal way.

Inflammable

Liquids with a flash point of less than 0° C and a boiling point of 35° C or more, as well as substances that at normal temperature exposed to the air, without supply of energy, can rise in temperature and can finally catch fire in solid condition; by short impact of an ignition source, can easily be ignited, and after removal of the ignition source continue burning and glowing in liquid condition; have a flash point of less than 21° C in gaseous condition under normal pressure; are inflammable with air by contact with water of humid air; develop easily inflammable gasses in a dangerous quantity.

Toxic

Substances that by inhalation or by entering through mouth or skin, can cause very serious, acute, or chronic danger or even death.

Harmful

Substances that by inhalation or by entering through mouth or skin, cause danger of a limited nature.

Corrosive

Substances that, through touch, have a destructive effect on living tissues.

Dangerous for the environment

Substances of which the use has or can have an immediate or delayed effect on the environment.

CHAPTER 4.3
CONDUCTING THE ON-SITE VISIT

4.3.1 Entry and the opening meeting

On-site inspection is the primary face-to-face interaction between an inspectorate and a company. The credibility and respect that the operator of the company has for the inspectorate depends, to a large extent, on the behaviour, appearance and professionalism of the inspector during field visits. In this regard, the first impression is important.

If the inspection has been announced and appointments made, it is good practice to arrive a few minutes ahead of schedule and wait patiently at reception. This is not time wasted. Much can be learned about an organisation by standing in the reception area and looking, listening and, in some cases, smelling. In the case of an unannounced routine or reactive inspection, which may cause some inconvenience, the inspector must be firm but above all polite and reasonable.

On arrival at the installation the inspector should signal his presence on-site according to normal site procedures. He or she should be aware of the operator's on-site safety arrangements and should comply with them. The instrument of the inspector's authority, *i.e.* warrant or identity card, should always be carried and produced when identification is required.

Upon meeting the operator's representative on-site, the inspector should allow about 15-30 minutes for an explanation of the purpose, scope, and expected duration of the inspection. A **typical agenda for an opening meeting** is as follows:

- Introduction of personnel involved (meeting participants);
- Explanation of his authority to inspect the facility;
- Objectives and scope of inspection, together with any brief, explanatory review of past compliance and enforcement history;
- Plan and schedule for inspection;
- Any limitations, constraints, or exceptions;
- Administrative arrangements;
- Arrangements for covering matters that involve confidential business information;
- Arrangements for the closing meeting;
- Questions.

The inspector should record the names and positions of participants in this meeting and other relevant information for the inspection report.

If the person exercising control over the property denies access to property, then the inspector should not attempt to continue the inspection without first contacting the inspectorate for further instructions and/or assistance. If a situation arises on-site that threatens the safety of an inspector, then all inspectors should leave the site and immediately contact the inspectorate. If access is denied in an emergency situation and the inspector believes that an imminent or serious threat exist to public health, welfare, and the environment, then the inspector should contact fire and/or police authorities for their assistance in stabilising the situation.

Where an inspector is unable to obtain lawful access to a site, the inspector may make observations from adjacent public areas, open fields, or from neighbouring private property, provided the inspector has permission from the owner, operator, or person having apparent control or authority of the neighbouring property.

Under some regulatory regimes or specific laws, denying access for inspection is a criminal offence. The inspector should be well-informed about such cases and ask inspectorate management to follow the standard procedure of non-compliance response.

If no owner, operator, or other person having authority or control over the property is present the inspector should leave a calling card identifying himself and, when possible, should provide other information explaining the purpose and scope of the investigation.

4.3.2 Examination of the facility

Guided by the inspection plan, the inspector should proceed directly with checking compliance with the terms of the installation permit(s) and with any agreements made, or, in the case of a reactive inspection, with appropriate investigation of non-compliance. If, for any reason, it becomes obvious that the inspection cannot be carried out according to the prepared plan, the inspector should modify the immediate objectives without, if practicable, losing sight of the overall goal and priorities.

Generally, the inspector will have powers to inspect any aspect of the installation. Although not exhaustive, the following list illustrates the main areas of inspection:

- **Compliance status from the technical point of view**
  - The operating plant;
  - Abatement systems and the associated control and alarm systems;
  - Control room;
  - Alarm testing log books;
  - Drainage systems;
  - Sample points and sampling equipment, both liquid and gaseous;
  - Storage areas;
  - Analytical laboratory, testing and calibration procedures;
  - Compliance monitoring results log books;
  - Abnormal incident reporting log book;
  - Public complaints log book;
  - Process operation procedures.

When assessing compliance with the terms of the permit(s), the inspector must first check that no new process or equipment has been installed without having been authorised. He or she then needs to check whether the plant is operating according to the provisions of the permit(s) and/or regulation(s). The inspector will address, for example, the following questions:

- Do the installation and its pollution control equipment correspond fully to those described in the permit(s), or in the related application(s)?
- Is the installation well maintained and fully operational?
- Does the personnel follow all operating instructions referred to in the permit(s)?
- Are the notebooks and administrative records required by the permit complete and up-to-date, without any corrections being unclear and countersigned?

– Operator self-monitoring and reporting

Self-monitoring must be scrutinised, including the following issues:

- Coverage of emissions by self monitoring;
- Compliance with prescribed frequency and protocols of self-monitoring;
- Reliability of the system;
- Adequate reporting to the authority;
- Compliance with Emission Limit Values, based on actual measurements

– Noise and emission levels

Measurements of, for example, the noise level or emissions, might also be conducted on-site to check whether the company complies with the relevant requirements. These measurements are normally done by specialised inspectors or by other authorised people.

In addition, the inspector may take samples, for example, of liquid discharges, waste materials, or soil. In some cases inspectors may be empowered to take all the samples and make relevant measurements for compliance checking purposes. In most cases, however, the results of the analyses of samples taken by the inspector, and his or her measurements, will be considered as only indicative, as sampling, analysis, and measurement for compliance checking purposes, will normally involve certified systems, procedures, and personnel.

Many questions arise concerning the procedure of inspecting companies that have adopted ISO 14 000 series standards and implemented an Environmental Management System (EMS). With regard to this specific case, the inspector should realise that even if a company has a certified EMS, this does not automatically mean that the environmental performance of the company is good. It only means that the company takes its environmental responsibilities seriously and addresses them in a systematic manner. To reward this attitude, the company may be granted with a decrease in the number of inspections. However, the existence of an EMS certificate is not a warrant against violations and inspections need to be carried out even at companies that possess such certificates.

4.3.3 Preliminary evaluation of findings

After physical examination of plant, equipment, records, etc., or after particular parts of the examination, the inspector should take some time to make and record a preliminary evaluation of his or her findings, and to resolve any points of doubt. Where it appears, on preliminary evaluation, that there is some non-compliance, it should be drawn to the attention of the operator's representative and recorded in the inspector's notebook for further consideration.

Where the inspector considers that there is a significant risk of release of any substance likely to have serious consequences for the environment, he or she should consider the courses of action open to him or her under the law, and within his or her powers. If the law and the inspector's powers allow for ordering the shut-down of the installation or process, and if it is the appropriate course of action, this is the time to prepare the instruction or order, which will need to describe the fault or likely failure, the associated hazards, and the actions that need to be taken by the operator. In the absence of such powers, he or she will have to take such action as is appropriate under the law.

4.3.4 Closing meeting

The closing meeting is the formal completion of an on-site visit. Its purpose is to maintain constructive dialogue with the operator and his staff by giving them immediate feedback on the results of the inspection and explaining the procedures of the inspection follow-up. During the closing meeting, the inspector should ensure that the operator's representatives are aware of and fully understand the initial findings, their implications, and the likely follow-up action. The inspector should be friendly and open, but refuse to make any statement that might be interpreted as a formal statement by the inspectorate. The inspector should avoid speculating on subsequent enforcement or penalties, unless that is solely within the inspector's discretion. Reference should be made to the documents and correspondence that will be provided to the company after completion of the inspection.

A **typical agenda for a closing meeting** is as follows:

- Introduction of personnel, if different from opening meeting;
- Thanks for co-operation, administrative arrangements, etc.;
- Summary of objectives for inspection, with any modifications that might have been made during its conduct;
- Summary of general findings;
- Indication of preliminary evaluation of any non-compliance found;
- Indication of any corrective actions required, and of any other follow-up activity, that will be formally notified by letter in due course.
- Issue of any formal instruction or order in the case of a significant risk being found, and depending on the law and inspector's powers;
- Questions.

The inspector should prepare the minutes of the meeting for future reference. The inspector should also note the names and titles of company officials and other personnel who were interviewed. He or she will review and make a written record of the documents and other information that was handed over by the company and summarise the activities that were done. The results of the site visit will be recorded in an official inspection report (see section 4.7).

Personal incidents or accidents involving the inspector in the course of on-site inspection, no matter how trivial, should be recorded in the installation's accident record book before leaving the site and should also be reported to the inspector's own management.

4.3.5 Particularities of visits in response to incidents

Where a reactive inspection is made because of some incident, accident or abnormality on the installation, the extent and character of the incident should be determined as quickly as possible. In the case of serious or extended incidents, involvement of and co-ordination with fire brigades, emergency services etc. should take place. In the case of a public emergency the inspector should be aware that issues of safety and the work of the emergency services might take precedence over his or her environmental concerns and issues.

In cases of more limited or local incidents, the following procedure may be followed:

- The inspector should ask for the responsible site representative. In most cases this person is known from previous visits or from previous correspondence with the company;
- The inspector should explain the purpose of the inspection;
- The inspector should question the site representative and other site operators/staff as necessary to establish the exact details of on site-operations and potential problems that have resulted in the incident. Also, the installation's fire brigade and/or Environment, Health and Safety department may be involved;
- If the incident is more serious, the inspector should be accompanied by a colleague in order that corroborated legal evidence may be collected if necessary, and any staff being questioned should be given the caution that any information given may be used in evidence in court;
- The inspector should check all relevant areas of the installation and the neighbouring area unless the incident has resulted in conditions which are unsafe;
- The inspector must follow the site safety requirements;
- The site representative should be given the opportunity to accompany the inspector on the inspection (in some large sites the inspector should not enter the site unless accompanied by a site representative);
- Where appropriate, the inspectors (or any other authorised person) should take samples, if necessary, in accordance with the legal procedures (which differ from country to country) for use as evidence;
- The inspector should write down all statements made by the site staff and if appropriate take photographs or video recordings as information or as evidence;
- Where appropriate, the inspector should give information and advice to the site operator regarding action that may stop an ongoing incident, prevent a recurrence, or remedy damage caused. In some circumstances, depending on his or her legal powers, the inspector may strongly recommend or insist that certain action is taken to stop an incident and/or prevent further pollution;
- Before leaving the site, the inspector should ensure that the site representative is aware of any further action that is required by the operator, and that the inspector's course of further action is clear.

Effective follow-up of such a visit is important in order to assess the operator's response to any instructions or guidance from the inspector.

4.3.6 Checklists guiding on-site inspection

Checklists may guide on-site inspections and this section includes an example of such an inspection tool. The list of points of attention will always be country-specific and very much dependent upon legal requirements and adopted compliance assurance strategy. However, inspectorates will be able to make an informed decision on the need for producing this kind of inspection tool, and, if so, use the checklist below as a starting point for developing their own checklists.

Checklist 4-1. Major points for attention as part of an on-site visit

What character the inspection will have?

- ❒ Integrated inspection
- ❒ Single-medium inspection
- ❒ Target inspection (boiler house, furnaces, measuring equipment etc.)
- ❒ Inspection on the use of energy; transport of waste
- ❒ Other

Is the visit part of an overall compliance assurance strategy?

❒ Yes(*) ❒ No

* If so, make sure that the visit covers both compliance checking and compliance advice

Is the visit a routine announced inspection?

❒ Yes(*) ❒ No

* If so, make sure that

- ❒ The responsible contact at the location is notified
- ❒ The purpose and the procedure of the inspection is explained

In the case of a single-medium inspection, which medium are you going to inspect?

- ❒ ……..

In case of an integrated inspection, ensure that expertise is available to inspect

- ❒ Water and waste water
- ❒ Soil
- ❒ Air
- ❒ Solid waste
- ❒ Hazardous waste
- ❒ Storage tanks and spill prevention
- ❒ Pesticides
- ❒ Toxics – polychlorinated biphenyls
- ❒ Energy efficiency
- ❒ Noise
- ❒ Radiation
- ❒ Awareness and preparedness for emergency cases
- ❒ Biological diversity; wetlands
- ❒ Other

Will compliance with environmental permit(s) be checked?

❒ **Yes(*)** ❒ **No**

❒ If so, check the following

- ❒ Permit provisions are well understood
- ❒ Permit provisions are properly implemented
- ❒ Facility staff follows the operation and maintenance instructions included in the permit(s)
- ❒ Registers and administrative records (stated in the permit) are up-to-date
- ❒ Required self-monitoring programme has been carried out, and the results are well documented
- ❒ Other

Will samples be taken and measurements carried out?

❒ **Yes(*)** ❒ **No**

❒ If so, which samples (measurements) will be taken

- ❒ Wastewater
- ❒ Surface water
- ❒ Groundwater
- ❒ Soil
- ❒ Air
- ❒ Waste materials
- ❒ Other media / substances
- ❒ Noise
- ❒ Radiation
- ❒ Other samples/measurements

Are you familiar with the enforcement options that are available to the inspector for immediate action?

❒ **Yes(*)** ❒ **No**

❒ If so, which of the following options are likely to be used

- ❒ Injunctions
- ❒ Fines
- ❒ Permit revocation
- ❒ Sealing of (parts of) the process or specific equipment
- ❒ Shut down (parts of) the process
- ❒ Other

Does the company have an Environmental Management System?

❒ **Yes(*)** ❒ **No**

❒ If so, check whether

- ❒ EMS Certificate is valid
- ❒ Environmental performance of the company is assessed by means of external audits
- ❒ Corporate reports are produced and publicly available

Will you co-operate with other authorities?

❒ **Yes(*)** ❒ **No**

❒ If so, which of the following authorities:

- ❒ …….
- ❒ …….

Is the inspection a response to a pollution incident?

❒ **Yes(*)** ❒ **No**

❒ If so, make sure that

- ❒ The visit is co-ordinated with the emergency services
- ❒ In the case of a serious incident, the inspector is accompanied by a colleague
- ❒ The company's responsible person is present
- ❒ The purpose of the visit is explained
- ❒ The contact person in charge with environmental matters and other site staff are questioned in order to establish the exact details of on-site operations and potential problems which might have resulted in the incident
- ❒ The contact person is given the opportunity to accompany the inspector on the inspection
- ❒ All relevant areas of the process site are inspected; this must be the case unless the inspector must follow the site safety requirements
- ❒ Appropriate samples are taken for use as evidence
- ❒ All statements made by the contact person are well documented
- ❒ Appropriate photographs or video recordings are made as information or as evidence
- ❒ Information and advice is given to the site operator (if appropriate) regarding action which may stop an ongoing incident, prevent a recurrence, or remedy damage caused (in some circumstances, the inspector may strongly recommend or insist that certain action is taken to stop an incident and/or prevent further pollution)
- ❒ The site contact/management is aware of any further action required on their part, and of further action, before leaving the site

Which of the listed items should be available at completion of the on-site visit?

- ❒ A summary of inspection results including a list of infringements and non-compliance items, as well as a list of positive observations/improvements
- ❒ A summary of required actions and measures, including time limits to improve the situation
- ❒ A list with the consequences of repeated non-compliance in case of a follow-up inspection (e.g. proposed fines)
- ❒ Additional information on possibilities to implement cleaner technology/waste minimising techniques/precautionary activities and/or the provision of information on self-monitoring possibilities and related items
- ❒ The official inspection report

Source: Based on IMPEL (1999), Reference Book for Environmental Inspection.

CHAPTER 4.4
EVIDENCE: THEORY AND PRACTICE[54]

The inspector plays a central role in initiating and building an enforcement case. Environmental inspectorates, or their partners, will not initiate such cases unless they believe they have solid evidence of non-compliance. Therefore, inspectors should prepare to conduct and document their investigations so thoroughly that the case successfully stands up in a court of law. They should anticipate arguments for the defence and, while on-site, collect evidence that addresses possible arguments; after return to the office, it is difficult or impossible to correct mistakes and major oversights made in the field. Finally, the inspector must have a thorough understanding of the difference between just information and good documentation.

4.4.1 What is evidence?

Evidence is documentation that satisfies the rules of evidence for admissibility in a court of law. Documentation is anything that provides verifiable information used to establish, certify, prove, substantiate, or support an assertion. Photos, notes, reports, statements, samples, diagrams, models, and records are all examples of documentation.

- Best evidence rule: prohibits the introduction into evidence of any secondary evidence (i.e. copy) unless it is shown that the original document has been lost or destroyed. Where the terms of a written document are material to the case, the original should always be produced if possible. Certified identical copies are called conformed copies.
- Authentication: Before information is received into evidence, it must be authenticated with proof that shows it is what it claims to be. (*i.e.* a sample must have proof that it came from a specified place and has not been altered on purpose or by mistake.)
- Chain-of-custody: This is the complete, unbroken record of all individuals who have maintained control over the evidence since its acquisition. Without a complete record of custody it becomes impossible to prove the evidence has not been compromised and therefore may not be authentic.

Inspectors should be aware of any relevant rules of evidence specified in national laws. The inspectorate will ensure that these rules are described in inspection handbooks.

4.4.2 Classes of evidence

Commonly, evidence may be placed in two major classes:

1. Direct evidence tends to establish a fact without inference or presumption. It may involve a witness or take the form of a photograph, signed statement, film, or record.
2. Circumstantial evidence proves a fact indirectly by proving another fact from which an inference or presumption may be drawn.Direct or Circumstantial evidence may take several forms:

[54] Based on USEPA (2002), Compliance Inspection Training Course, USEPA, Washington D.C.

Real Evidence consists of tangible objects that can be seen or felt. The "trier-of-fact" (hearing officer or judge) can reach a conclusion without recourse to witnesses. Real evidence may be documentary, physical, or scientific:

- **Documentary evidence** is written material that "speaks for itself";
- **Physical evidence** is something tangible that is part of, or related to an actual event;
- **Scientific evidence** consists of an analysis based upon known and established methods, materials, and means of measurement. Authentication is required to establish precision and accuracy of the analysis. Quality assurance (QA) and quality control (QC) are critical requirements.

Testimonial evidence consists of information supplied by witnesses rather than objects, documents, or scientific analysis. In general a witness may testify to the limit of his five senses and competency. An oath or affirmation is required.

- **Lay or fact witnesses** are allowed to testify only to experiences detected through their five senses. They heard, saw, smelled, touched, or tasted something. Opinions are allowed only under very limited circumstances.
- **Expert witnesses** are used where the average person would not be able to make a reasonable judgment based on facts or data presented. These are frequently highly complex or technical issues where professional standards and credentials are required. Other experts are often introduced to challenge the first expert's credentials as well as their competency.

An inspector is usually called upon to be a **fact witness** unless they are an engineer, chemist, or carry other professional credentials. Caution should be taken if an agency wishes to establish an inspector as an expert witness because it places unnecessary emphasis upon the inspector's level of professional competency rather than the credibility of the evidence brought to court by the inspector.

Demonstrative evidence is a diagram, photograph, model, representation, or illustration used to help prove a fact. In some cases it may include summaries of large or highly complex documents. It is usually used to assist testimonial information and make it more understandable to the "trier-of-fact".

Judicial notice refers to things so commonly known or recognized that the "trier of fact" does not require authentication. An example of this might be the length of a metre. However, an inspector should never assume that the trier-of-fact has the same education and experience as he.

4.4.3 What should be documented?

The short answer is **everything**. It is the inspector's responsibility to keep track of all notes that contribute to the inspection report. Inspection reports must be written "near in time" to the inspection so that relevant information can be documented while it is still fresh in the inspector's memory. The longer the time between the inspection and the report the greater the possibility that the inspector's memory or credibility will be brought into question.

There is good documentation and poor documentation but there is seldom too much documentation. The only restraint is time and resources. It is better to document something from several approaches than just one. Taking a sample may be good, but a sample, combined with a thorough record and a photograph is better. If one piece of documentation fails the others may be enough to establish the facts. The inspector should not assume that one piece of documentation is conclusive in itself. The q**uantity of evidence** is important but so is the **quality of evidence**. The quantity and quality of documentation brought forward by the inspector will be compared with that of the defendant.

4.4.4 Interviewing

Interviews are a highly valuable, but often under-used means of gathering information during an inspection. Oral and written statements obtained from company personnel may be admissible evidence in some countries (provided that the statements have been made after a caution has been given). An inspector with good interviewing skills can obtain information and develop important facts that might otherwise be missed. Important aspects in relation to interviewing are:

- Statement of evidence;
- Procedures for how to prepare a written statement;
- Planning and conducting interviews; questioning techniques;
- Creating an atmosphere conducive to a productive interview.

Section 4.5 discusses some basic interviewing techniques; moreover, approaches to negotiation and conflict handling are introduced.

4.4.5 Field notes

As already mentioned, the inspector's field notes document what the inspector saw, heard, smelled, or touched. They serve as evidence to corroborate other forms of evidence, such as physical samples or photographs, and as a foundation for preparing inspection reports and refreshing the inspector's memory about inspection prior to giving testimony. Details of any non-compliance recorded should include the date, time, names of those present, and any comments made.

Field notes may be subject to disclosure to the opposing side and may be entered as evidence in a trial. Therefore they must contain just the facts. Even if the inspector believes the inspected company is clearly in violation, that conclusion must be omitted. Instead, all the observed conditions that led the inspector to that belief should be meticulously recorded in the notebook. Field notes may be taken either in written form in a field notebook or in spoken form on an audio recording device, such as a portable tape recorder or dictating machine. Language in the notebook should be objective, factual, and free of personal feeling.

The inspector's notebook is a record that should be acceptable as a reference document in a court of law. Hence all entries should be made in permanent ink and where entries are deleted or corrections made, the previous entry should be struck through by a single line to ensure that the original entry is still legible. Re-instatements of deletions should be made by inserting the word "stet" adjacent to the deletion.

4.4.6 Photographs and videos

Increasingly, photography has played an important role in the process of information gathering. Photographs provide inspectors not only with visual documentation contributing to more accurate inspection reports, but also with evidence for enforcement proceedings and objective descriptions of conditions found at a company. Photographs can also be helpful to the field team during future inspections, informal meetings, and hearings.

Photographs are some of the best physical evidence, and easiest to authenticate and therefore admit into evidence in court. When enlarged and placed in view in the courtroom, photographs can be the best means of duplicating what occurred months or years earlier during an inspection. Clear

photos of relevant subjects, taken in proper light and at proper lens settings, provide an objective record of conditions at the time of the inspection. In this respect, photographs can be the most accurate demonstration of the inspector's observations.

When using film-based cameras, a copy of the prints may be provided for the facility after the inspection, but the inspector should retain the original negatives. The inspector should not allow the company to develop the film to ensure the film is properly developed.

In the case where a Polaroid-system is used, it is good practice to take two pictures of the same subject at the same moment. The inspector may hand one copy to the company. If a digital camera is used, the copy of the picture-files should be left with the company. Inspectors are advised to use a camera that registers automatically the date and time of the picture, or registers this information through other means.

Digital images may be easily altered, so a permanent, unaltered copy of the image file should be maintained. If the image is altered in any way, such as to adjust the lighting or contrast, the inspector should document those changes. Even altered images may be entered as evidence with the confirmation by the inspector that the image, in whatever medium, is a true and accurate representation of what the inspector observed on-site.

4.4.7 Samples

Sampling can be an important element in the collection of evidence. A considerable amount of data may result from samples collected in the field. This data is of little value unless it is of good and verifiable quality. The requirements that should be met to ensure sample quality are described in Section 4.6.

CHAPTER 4.5
PERSONAL COMMUNICATION AS AN INSPECTOR'S TOOL

4.5.1 Basics of effective personal communication

The spoken word and good listening are important tools for inspectors, both bringing a lot of useful information. International experience tells that good communication, as a tool, should not be neglected and communication deficiencies generally indicate a lack of professionalism. Unfortunately, only very few people have a natural talent for good communication; the majority need knowledge of theory and practical training to assimilate this skill.

Communication can be defined as the exchange of information between two parties. All communicators give information and receive information. A message can be transmitted without any words, only through body language. The typical human form of communication is through words (verbal). In practice, our words do not always appear to reflect what we meant: communication can have bottlenecks, which generate misunderstandings. Sometimes this happens unwanted *e.g.* when words have more than one meaning. In many instances conveying false messages is deliberate: we use words that hide what we feel or think; we cover things up with the language.

The non-verbal and verbal types of communication are complementary to each other, but there are situations when they contradict each other. It can be the non-verbal communication that makes us understand the proper value of this kind of message.

Effective communication requires several elements:

(a) A sender;

(b) A receiver;

(c) A message;

(d) A communication channel or medium;

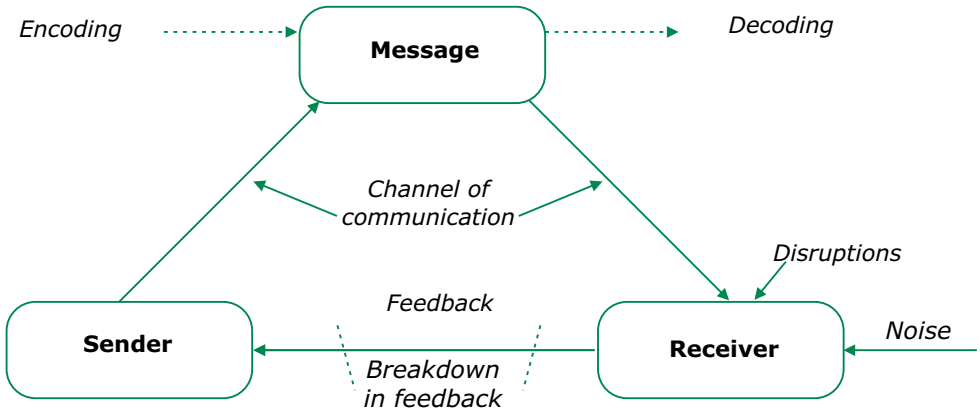
(e) A feedback mechanism.

The "message" consists of those images (signs) two communicators transmit to each other. The message has to be encoded and accurately decoded if it is to be effective. The verbal codification often may lead to disturbance in communication. For instance, even native speakers of one single language have major differences in profession, education level, social status, dialect, etc. These differences sometimes give words a different meaning for the sender and the receiver. The knowledge of this fact gives us the understanding that the meaning of words is not easily conveyed. This should always be taken into consideration in communication.

Besides verbal signs, coding also contains non-verbal signs. The latter ones are so numerous that a full listing is impossible, but examples are silence, gestures with hands and feet, expression, and non-linguistic sounds like yawning, intonation, etc. The non-verbal signs are as important as verbal ones, but are even more difficult to interpret correctly.

The communication is successful if the reaction of the receiver is in conformity with the intention of the sender. The sender will often have to check whether with his message, and the way in which it was offered, achieved what he wanted. In all cases of interference, it is better to stop the transport of signals until the interference is over.

Figure 4-2. Diagram of the communication process



Source: Based on The Shannon Diagram: The Elements of Communication Processes, www.people.deas.harvard.edu/~jones/cscie129/nu_lectures/lecture1/Shannon_Diagram_files

The sender himself can generate disturbances, e.g., when he fails to structure his thoughts in a logical manner, or does not know his own intentions properly. Stuttering, talking too loudly or too quietly, mumbling, fiercely gesticulating - all these and other disturbances can make the receiver misinterpret the message or not comprehend it at all. Therefore **the sender must avoid creating blockades that complicate the reception (the listening to) of the message**. To this end, the sender has to choose the right channel of communication. For example, additional filters can appear when a personal visit replaces a simple telephone call.

If the sender encodes the message correctly and the interference during the trasfer is minimal, this will not necessarily mean that the message is received (correctly). A so-called "filter" causes a receiver to be untuned to the sender. For instance, at a moment when the receiver does not want to listen to the message, because he is busy with other things, the filter starts to function: the receiver hears the sound, but does not transpose that into a meaning. The stronger the distortion by the filter, the smaller the chance of a successful communication. Therefore, as a receiver, one needs to listen as openly and with as little prejudice as possible and "switch off" filters to a maximum.

The "frames of reference" are important reasons for poor interpretation or misinterpretation of messages. Every human being possesses a unique frame of reference, formed by (personal) values, norms and convictions that are based on his education, training, social contacts, individual talents, interests, experiences, etc. This frame of reference develops continuously, since people "learn" every day. Not only every individual has a frame of reference, also groups (associations of professionals, political parties), and even whole cultures have their own frame of reference. The frame of reference determines to a high extent the way in which communication takes place. At the level of codification, for instance, people can talk about "plant protection" (the farmer), about "fighting diseases" (the biologist), or about "spraying poison" (the conservative environmentalist). For an effective (and successful) communication it is necessary that the frames of reference of the sender and the receiver have something in common.

The context, in which the communication takes place, plays an important role. "Context" means the influence from the outside world on the communication situation.

The sender must continuously watch the reaction of the receiver, which is called feedback. The purpose of feedback is to clarify the communication situation between two communicators. The strength of a good communicator lies in the ability to adjust the message in response to feedback so as to convey the message.

4.5.2 Interviewing

The interview is one of the most significant, although often undervalued, tools to conduct an inspection or investigation. In this subsection, which builds upon the basic rules of communication presented above, a brief overview of interviewing techniques will be given to enable inspectors to improve their interviewing skills.

Within an interview the inspector has a number of goals:

- Gather factual data or other information from the interviewee;
- Determine if the interviewee is truthful and, if not, identify the form of the deception;?
- Change the interviewee from deceptive to truthful.

To this end, the interviewer must have the ability to question. A question is an activating event. If the employed questioning strategy is not productive, then the interviewer must have the ability to use additional approaches until the strategy most appropriate to the interviewee is found.

Once the interviewee begins to talk, the interviewer must be able to detect deception. The form of the deception and the specific elements of deception have to be identified. The interviewer must have more than a "feeling" that the interviewee is not truthful. The interviewee may be truthful with regard to three out of four of the salient topic areas. Consequently, the interviewer must know specifically where and how in the discourse, the interviewee is deceptive and direct the questioning accordingly. If deception is detected, the interviewer must have the ability to gain confidence. The interviewer must then be able to change the goal of the interviewee from deceptive to truthful.

After the interview, the interviewer must have found the answer to the six "golden" questions:

- Who told you and/or was involved?
- What happened?
- Where did it happen?
- When did it happen?
- Why did it happen (what was the reason or cause)?
- How did it take place?

Interviewer's qualifications

Decorum, politeness, attentiveness, responsiveness, friendliness, pleasantness, gregariousness, neighbourliness, sociability, and a good sense of humour. Application of these attributes will ensure the success of your inquiries.

Preparing for the interview

Whether you will interview in person or use the phone, fax, etc: **be prepared**. Whether you are conducting a background check, an assets search, a relationship or custody investigation, acquire and organise data in advance – important facts as well as seemingly mundane, trivial details.

It is useful to learn as much as you can about your subject's personality, preferences and dislikes, occupation, schooling, relationships, leisure activities, clubs, organisations, and interests. Especially as a debutant interviewer this is very important. After gaining experience interviewing will become easier and you will gradually need less time for preparation.

How to prepare for an interview?

1. Make an appointment with the person (it is rude to just arrive and expect the person to give you their time).
2. Learn a little about the person before meeting him/her.
3. Know what you want to gain from the interview.
4. Write your questions down before the interview, but be prepared to take a different path of questioning if necessary.

Interviewing in person

When interviewing in person, you will have the advantage. The person you are interviewing will find it harder to refuse you in person and you will have more time to state your case. There are a few guidelines to remember when first interviewing someone. They are:

- Establishing a rapport (being friendly but at the same time down to business is a matter of experience);
- Do not emphasise your note taking: it can be intimidating;
- Give people time to answer and **listen**;
- Do not make promises of confidentiality or protection: stress honesty.
- Try to have privacy for the interview;
- Obtain interviewees name, position, and contact information;
- Give them your name, position and how they get in touch with you at a later date;
- Enforcement should not be mentioned;
- Avoid leading questions;
- Avoid double negatives and complex phrases;
- Avoid multiple subjects in your questions.

Free narrative questioning generally provides more information, but is more time-consuming. Work from the general to the specific. Direct examination (general to specific) may be more successful in saving time or working with subjects who tend not to volunteer information. What you should keep in mind during an interview is:

1. Keep your time sequencing consistent. Work backward or forward in time. Avoid mixing it up;
2. Work from the known to the unknown;
3. Use standard known references to establish a connection or relationship between things and pieces of information (see the example).

Inspectors may use the following **line of questioning** which leads **from the general to the specific:**

Q. Who do you work for?
A. Acme Polluters.

Q. How long have you worked for them?
A. About 6 years.

Q. What do you do?
A. I open bungs on drums from Mega Chemical Corp. Then I pump them dry.

Q. What happens to the contents?
A. They are pumped into a tanker truck.

Q. What happens after that?
A. The truck takes it to the landfill.

USING KNOWN REFERENCES

Q.: What was the liquid contained in?
A.: A big tank kind of thing.

Q.: How big was it?A.: Pretty big.
A.: Pretty big.

Q.: Was it larger than a 55 gallon drum?
A.: Oh yeah. It sure was.

Q.: Was it more like a home oil tank?
A.: Uh huh, but bigger.

Q.: Was it larger than a car?
A.: Yes.

Q.: Was it as large as a rail road tank car?
A.: Yes, that's what it was.

Q. Which landfill?
A. The country landfill mostly.

Q. Where else?
A. The old quarry near the water tower.

Q. What is in these drums?
A. Usually solvents like trichlor, collected from print shops.

Q. Are there labels on these drums?
A. Sometimes.

Q. For example?
A. There are hazardous waste labels and sometimes there are company labels that say what the stuff is.

Be aware of your personal appearance and grooming. Dress for the role you intend to play. If e.g. you want people to think you are a "business person", consider every detail: dress, demeanour, and manner of speech. Act like a business person. Be a business person.

In all interviews, you must make a good first impression. Studies have shown that many interviewees are most influenced in their decisions within the first few minutes of the interview. This means arriving on time, being properly dressed and groomed, exhibiting positive non-verbal behaviour (firm handshake, good eye contact, smile, and confident manner). Even the initial "small talk" conversation is very important. It is difficult to recover from a bad beginning.

Interviewing by phone

Interviewing by phone offers some advantages over in-person interviewing, because the person you are interviewing cannot see your nervousness and you can take on whatever character you think will best achieve your objectives. You can use another voice or be a person who is a different age. You can make use of notes to guide you and help you through the questions.

Interviewing techniques

The first technique needed is to appear neutral. Never give your own answers to or opinions of the survey questions. The hints in the box provide suggestions for neutral phrases interviewers can use to keep the respondent talking, and a few phrases to avoid because they might imply approval or disapproval of the response. Try not to give a possible answer within the question itself (*i.e.* ask a so-called "open-ended" question). The inspector should avoid using one of the following awful ways to phrase a question if they want to get information:

"You do not have any toxic materials around here, do you?"

"There aren't any buried drums on your property, are there?"

"You have all the necessary records, do not you?"

"Your Environmental Management Plan is up-to-date, isn't it?"

Better questions are for instance:

"What kinds of materials do you handle?"

"Have there been any materials buried on your property?"

"Where do you keep the ……records?"

"May I see your Environmental Management Plan?" (follow this up by asking an employee about procedure to verify the plan's application).

You must verify statements made by company staff. A statement that something exists is not the same as verifying by sight or measurement.

Interviewers should be aware how easily something as simple as tone of voice can influence a respondent's answers. Voice quality is an important factor. If time is available the inspector could consider taking a few minutes to mentally prepare him/herself at the beginning of each interview.

Be careful that nothing in your words or manner implies criticism, surprise, approval, or disapproval of the respondent's answers. If you have a normal tone of voice, an attentive way of listening, and a non-judgmental manner you will maintain, and even increase, the respondent's interest in providing information. Never disagree or argue with the respondent on any matter, even where the respondent expresses views with which you simply cannot agree, or find revolting, or unacceptable. You must remain neutral. By the same token, do not agree with their opinion by saying 'fine' or 'good' after their response.

Good Feedback:

- I see...
- That's important to know
- OK... now the next question is
- It's important to find out what people think about this
- That is useful/helpful information
- Thanks, it's important to get your opinion on that

Bad Feedback:

- Yes, a lot of people say that
- Oh, really?
- Gee, that's the first time I've heard that
- I don't know anything about that

Another interviewing technique you might use is to present the wrong information, then allow yourself to be corrected. This is called the "erroneous conclusion". The interviewee will invariably give you the information you need – you will not even have to ask for it. Get answers to your questions by playing ignorant, a tactic many people confuse with stupidity. For instance, imagine you wish to know the interviewee's middle name: address the person by wrong name – Mary Jane; the interviewee will correct you – Mary Jean. It is a natural reaction to correct wrong information. If however the person wishes to hide this from you, he/she will not correct you, and you will realise he/she is shielding information.

Recording responses

Recording responses is part of the basic interviewing techniques. The interview information should be recorded accurately in your notebook:

Who were you talking to? **What** did you ask them? **What** did they say?

Closed-ended and open-ended questions should be treated separately. For closed-ended questions interviewers should listen carefully to the response given to be sure that it is one of the predetermined answers to the question.

Recording answers to open-ended questions is a bit more involved. You must record the respondent's replies in the very words which he/she uses. Try to note the phrases, dramatic usage, and peculiarities of speech which are characteristic of each respondent, so that the interview will reflect something of his/her individual personality. Include everything that pertains to the question. Irrelevant disclosures should be omitted from the answer. A good technique for holding the respondent's interest while taking notes is to start repeating the responses as you are writing them down. This lets the respondent know you are listening to every word, and occasionally serves as a probe.

When documenting an interview, accuracy is very important. The following represent common methods of recording a statement:

- A narrative summary of the interview written from memory;
- Legally obtained tape or video recording (if available, video is best);
- Exact transcription, read, signed, and dated by the interviewee;
- Written statement, signed and dated

4.5.3 Negotiation

In some countries, inspectors may need to negotiate the terms of achieving compliance by the regulated community, for example, where there inspectors are involved in permitting or where the inspection and enforcement strategy can leave room for negotiated compliance schedules, as already described in Part 3. How can an inspector handle these in a professional manner?

Box 4-3. Conducting the interview: some general tips

- Start on time, and be prepared with paper and pen/pencil;
- Be friendly and courteous - remember they are giving you their valuable time;
- Ask your questions clearly;
- Do not interrupt;
- Ask specific, thought-provoking questions. Avoid yes/no questions;
- Try to stay focused, but if something interesting comes up go with it;
- Take good notes. Ask the interviewee to repeat what they said if necessary, but only do this when it is something important;
- Do not volunteer information unless it is to get the interview going, to get it back on track, or to give background information relevant to your goals;
- Obtain all the information needed before ending the interview. If necessary, review your notes with the person;
- Apply a little psychology. Consider the sensitivities, attitude, and mind-set of each individual you interview;
- Thank the interviewee for his/her time.

Source: USEPA (2002), Conducting Environmental Compliance Inspections, US EPA, Washington D.C.

Context for negotiations

It is important to recognise and give proper weight to the context in which negotiations take place. The inspectorate may have an interest in keeping an open communication with a company, e.g. because it does not only want to focus on legal requirements, but also on voluntary company actions to improve the environmental situation.

Industries, which depend on environmental authorities for licenses, may consider inspectorates to be "on the other side of barricades". Environmental authorities, which regulate industrial processes may have a similar view of industry. The reason for this is that the two parties have different interests: the authorities have an interest in improving the environment and implementing laws and regulations, whereas the main aim of an industry is to operate its activities as efficiently and economically as possible.

Industry is subject to a wide variety of pressure and incentives for development and change. Companies have a justifiable desire to be sure that the manner in which they are regulated will not lead to competitive disadvantage. While environmental regulators may direct and control certain activities or actions in industry, there may be situations in which there is a need to reach a position, which is acceptable to both parties, taking into account various other factors. In such situations, the inspector may be required to negotiate with company representatives in order to achieve the conclusion required by the regulatory authority. In negotiating, a particularly sensitive aspect which inspectors must be aware of, is the fact that a company may question the details of environmental regulations when compared with those applied to the company's competitors.

Setting the scene for negotiations

In setting the scene for negotiations, it is necessary to establish: (i) the contents of the negotiation; (ii) the balance of power; and (iii) the climate in which the negotiation will take place. The inspector can use communication to influence these aspects, as described below:

- **Contents of the negotiation**: By means of arguments, facts, views and conditions an inspector can try to influence the position of the regulated company, taking into account costs and benefits, to reach a result which is most profitable to the environment.
- **Balance of power:** The inspector may try to strengthen his power. The most successful tactics that can be used include proving that one is right by showing facts, expertise and, persuasion. Each of the tactics has advantages and disadvantages. In most cases persuasion seems to be the most effective. Persuasion is most effective if one's own views are explained in a clear and structured way and a relaxed but not indifferent attitude is adopted. Also variation in speech, the use of examples, the explanation of main lines supported by facts and visual aids contribute to successful persuasion.
- The **climate in which the negotiation will take place**: Although influencing the balance of power might be effective, often it is more profitable to create a climate of trust and faith. In all cases an inspector should avoid personally attacking (verbally) the company or its representatives. An inspector should carefully watch the choice of words, show appreciation if possible and use humour where appropriate. Finally, the inspector should strive to be credible and reliable in every aspect of his behaviour.

In reaching the conclusion of the negotiation, the inspector must be aware of the absolute baseline position from the point of view of the environmental authority. A clear understanding of what areas are flexible and what areas are fixed is essential. The inspector must ensure that the position of the regulatory body is not compromised.

The inspectors must be aware of the impact of **emotions** on the negotiating ability. Negotiations deeply touch our ego and our emotions. It is therefore important to always keep in mind that the nego-

tiation is not about people, but about an objective issue. Negotiators carried away by the emotion can undermine the result(s) of the negotiating process.

During the negotiation as such people constantly send **signals**. It is important to watch for these, since they can help you understand the other party's position. Sometimes the signals are overt and clear, but most of the time they are subtle and can be easily missed. Three varieties can be distinguished:

- People intend to send them and they are true (instead of speaking outright);
- People intend to send them and they are false (these are hints to mislead you);
- People do not intend to send them and they provide critical information on what they want or will accept.

Information required for negotiations

The negotiation process cannot function without proper information. Starting negotiations without information is to go in blind. It is best to gather information before the start of the initial contact with the company. The following sources can be distinguished:

- Databases (*e.g.* on the Internet, inspectorate's computer, files of other authorities, Chambers of Commerce, industry magazines, newspapers, complaints, and magazines and other sources with information on technical developments);
- Third parties (*e.g.* colleagues in the inspectorate or ministry, officials of the municipality or region where the company is located as well as other authorities, former employees of the company, non-governmental organisations, citizens living in the vicinity of the company, other companies);
- The company itself and its associates (*e.g.* by developing multiple contacts within the company and piecing together bits of information from all these sources).

Looking for information however will never stop. It will go on during the negotiation process itself and even after conclusion of the negotiation. It is important to keep informed *e.g.* to judge whether a license-update is necessary or whether the company complies with the existing license.

Handling stress

Negotiating can be a stressful process for many people, influencing long-term relationships. Stress and conflict in negotiations can be reduced and solutions that serve all participants can be reached by using a number of common approaches:

- Separate the person from the issue. Negotiation is about issues, but also about feelings and personal relationships. The relationship that is established surrounds and profoundly impacts the outcome of the negotiation. It is possible to behave in a tough manner and still establish a good relationship with high levels of credibility. It is essential to separate conflictual elements in the negotiation from personal ones that relate to you and the other party as people;

- What we want is to resolve the issue living aside personal viewpoints;
- Interests and positions should be differentiated;
- It is not only important to know "what the company wants", but just as much "why the company wants it". To avoid personal influence, you can also ask yourself these questions about your own views;
- Consider the best alternative to a negotiated agreement;
- If you do not reach an agreement, what is the alternative? In determining your best alternative, a straightforward review of your interests will give you the clearest picture. If you accept your best alternative, you know when negotiations can be interruptes. But of course you should not ignore the company's best alternative. The balance of power each party can exercise is determined by the relative strength of each party's best alternative;
- Pursue fairness. The outcome of the negotiation process is taken more seriously if all parties consider it as fair;
- Do not get angry. Avoid getting angry especially when the other party is. You may say things you regret afterwards. This will harm your position. If the other party is angry, this however gives a good opportunity to observe and gain information. Shouting and commanding is not negotiation, it is confrontation. There will be losers instead of winners;
- Silence is golden. Keeping quiet after the other party has finished speaking can be quite unsettling in situations where they were highly opinionated or emotional, threatening or extremely demanding. A good negotiator listens and understands what the other party is saying. Without understanding it is difficult to make an intelligent response. Do not spend time shaping a stinging response to put the other party in its place.

Tactics in negotiating

Tactics are an important part of the negotiating process. Negotiations should be planned in advance. This includes the information gathering mentioned above, but also determining your best alternative, as well as the tactics to be used. Sometimes during a negotiation the other party agrees on everything or almost everything you want, without complications. Close the deal and move on to the next. Since you never know in advance whether this will happen, it is no loss of time that you did your planning.

In the text below a number of tactics that an inspector can use during negotiations will be discussed. The company may also have experience in this field. As soon as they realise that you are familiar with these tactics, this may help to raise the company's respect for the inspectorate and the inspectors. However, never use a tactic you do not feel comfortable with or which you consider improper!

1 Limited authority

This tactic can be used in different ways. It assumes that the negotiator lacks the authority to conclude a final agreement, or claims to lack that authority. This tactic can be used to obtain a delay (*e.g.* to think through the situation) without asking for it.

Another way of using this tactic is to come back and indicate that it was hard to get approval, urging the company negotiator not to ask for any more concessions. Yet another use is to get a "no" from the authority even when you could have said so yourself. This can also help to urge the other party not to ask for more concessions.

The company negotiator may of course also use this tactic. Try to determine as soon as possible what his/her level of authority is. If it is limited, try to involve the decision maker. Here again the same approach may be used towards you. If you do not have the decision-making authority, the company negotiator might ask to talk with the person in the inspectorate who has. It will be obvious that clear mandates will have to be given to the negotiators on behalf of the inspectorate.

2 "What-if" questions

The company negotiator may ask "what-if" questions, like: "What if we install other technology?", or "What if we incinerate the waste ourselves?". Or for instance, "What if we do comply within three years time?", and "What if we added this element?".

These questions can either be tactics or a real interest in the matters. However, these questions can very well be used to get a general impression of the room for negotiation. It is up to you to be alert on how to answer them. All your answers have to be consistent. Take care not to give information that you do not want to give to the company.

3 Act

It is common to use some bluff in negotiations. Good acting can help in that. Train yourself in this kind of acting. Of course, as with other tactics, here also the company negotiator may be a trained bluffer. Keep that in mind, although you should also be careful not to consider all things said as bluff from the other party. It may reflect valuable information, feelings, or opinions.

4 "Play dumb"

"Playing dumb" is a specific form of acting. Very often people like to show how clever they are. In negotiations this characteristic may reveal a lot of information. It may even ruin one's negotiation position. A better tactic may be to play dumb. This reduces the chance of revealing information you do not want to reveal on the one hand and on the other hand it "invites" the other party to make explanations. This will give you information (*e.g.* on the negotiation room of the other party or to better understand the other party's interests, or technical aspects), but also gives you extra time, and it will let the other party give away (part of) its position. Be careful not to play this "dumb-game" too obviously. And of course be careful – perhaps those who appear dumb in the other camp are after all not.

5 Change the negotiator

Changing negotiators may be done for several reasons. It may be necessary to admit a new negotiator in order to remove a personality problem. Or perhaps the first negotiator did not do a proper job. But also it can be an attempt to throw the other party off-balance.

However, a new negotiator will mostly tend to "prove" him/herself. Discussions on certain (or all) issues that were negotiated before may start all over again. Avoid getting angry or negative. Do not allow substantial additional concessions because there is a new negotiator who wants more. Remember that there is always the option to start the negotiations all over again, although you have to be careful, since this may lead to a situation of continually changing negotiators and a never ending procedure of licensing or negotiating the compliance schedule.

6 Disrupting the negotiation process

This tactic should not be used too soon by an inspectorate negotiator, since it may harm the inspectorate's interests. However it can be kept for later use if there is no progress in the negotiation process. Of course the company negotiator can also use this tactic. There are a number of ways to disrupt the process, trying to undermine the other party's willingness to negotiate effectively. Some of these ways are *e.g.* to walk out, acting or appearing to be irrational, use of anger and intimidation, guilt peddling, use of professionalism by groups such as doctors, lawyers and engineers, use of jargon, etc. These tactics are also called "mind tricks".

Tips for negotiators

- Do not believe everything you see and hear;
- Before negotiating establish in your own mind what the other person needs, including personal and emotional aspects;
- Be able to walk away;
- Keep the whole package in mind all of the time;
- Do not offer your bottom line early in the negotiation;
- Be patient;
- Keep accurate notes and show that you are doing it;
- Keep searching for variables, concessions, incentives;
- Summarise and confirm understanding continually.

As long as you recognise the attempt of the other party, there is no problem. Beware however if you recognise real anger or other emotions within the other party. These emotions (if not faked) have to be settled first, before continuing the real negotiations.

7 Good guy, bad guy

This tactic can be used by having a negotiation team rather than a single negotiator. One person will be easier to get along with than the other(s). The good guy for instance provides more information or seems more anxious to make a deal than the bad guy. The difference between good and bad can be obvious, but also very subtle. It needs good acting skills from the negotiators in order to avoid them falling back into their natural roles.

The good guy generally has improved chances of obtaining concessions from the other party as long as they do not have to deal with the bad guy.

Box 4-4. Practical guidance for conducting tough negotiations

The following guidelines can be use in "tough negotiations". They are basically "win-lose" ploys used between adversaries who do not trust or care much for each other. This should be taken into account when using them.

- Start by getting all the information you need. Decide what your initial offer should be and how far you will go.
- It may be wise to first negotiate for something you do not really want, in order to get some more information on other aspects, to show your expertise as a negotiator, and to let them feel some more pressure in the real deal.
- Try to avoid making the first offer. If you do, always give yourself room to negotiate (and let the other person "win"). For example: if you want emissions reduced by 50%, ask for 65% or so. Before starting the bargaining, know for yourself the minimum reduction percentage you will accept and stick to it.
- Always know the difference between what a person needs (must have) and what he/she wants (would like). Put priority on getting what you need, not on getting everything you want. On the other hand, the other person may only mention what he/she needs and not what he/she wants. Thus, discovering and meeting his/her wants may be very helpful.
- After the "opening positions" are established, you should make concessions very slowly and in small, decreasing amounts. Give a concession only when the other person will not give you any more and only when you can get something in return.
- If possible, offer a concession that does not cost you anything but seems valuable to the other party, then ask for another significant concessions from him/her. It may be possible to make up a big issue or problem, discuss it at length, make it seem important to you, and pretend to make concessions in this area if the other side will make additional concessions to you.
- Shake your head and frown at the other party's offer. The silent treatment makes most people uncomfortable. In some situations, it is beneficial to keep the opponent mildly uncertain.
- Get as much information as you can about the object of negotiation, about the market, about the company, and give as little information as you can about yourself.
- Little decisions (with sometimes high impact) are made quickly and without much thought after a big decision is made. Be careful of that.
- Use your colleagues or boss to give you more time, *e.g.* "I have to consult with my colleagues as to whether this solution is technically feasible", or as a way to go back on an offer.
- A tough negotiator is willing to take risks. He/she must be willing to say "I'd like to talk to the manager to see if he/she will not make a better offer" or to say "no deal" and walk away.
- Communicate that you are at your bottom line by making smaller and smaller concessions up to that point, actually going back on (reneging) some concessions you have already made ("Oh, I went too far – I can't do that"), or by saying "I'm not going to give any more."
- In the end, help the other party look good, believe that you are at your rock bottom (the best deal possible), and feel that he/she has "won". Thus a "win-win" settlement (in appearance only) is frequently possible. Announce that the other party is the winner.

Source: Callahan, T. Twelve Tips for More Successful Negotiations, www.sitepronews.com/archives/2002/feb/11.html

Mistakes in negotiation

Mistakes are easily made in negotiation. Five common mistakes are:

- Believing that the other party must lose for you to win;
- Discovering too late that more information was needed;
- Making extreme demands, investing too much in getting your way, and thus becoming reluctant to back down;
- Consistent human tendency to think that you are right and are reasonable;
- Thinking mostly in terms of what you could lose, you are likely to hold out for more-and lose everything.

4.5.4 Conflict handling

It is inevitable that inspectors face conflicts in their work. This can happen in many places and in many situations. Conflicts should not simply be seen as unwanted, negative elements, but may present an opportunity for renewal and change.

Conflicts can be approached in different ways, depending on the situation. It should be noted that, where possible, win-win situations should be aimed at when solving conflicts.

Each inspector will have his own and preferred style to deal with conflicts and, in difficult situations, it is this style which will come to the surface. It is an asset if an inspector is able to adapt his style according to the situation. If an inspector thinks he is not able to solve a conflict he should ask a colleague, or his boss, or perhaps a good friend, to assist in order to prevent an impasse. However, an inspector should be part of the solution rather than part of the problem.

Types of conflict handling behaviour

There is no best way to deal with conflict. It depends on the current situation. Nevertheless a number of general styles can be distinguished that people use:

- **Avoidance**: Avoidance is unassertive and uncooperative. The individual does not immediately pursue his/her own concerns or those of the other party. He/she pretends it is not there or ignores it. This style can be used when it is simply not worth the effort to argue. Over time this approach tends to worsen the conflict.

- **Accommodation**: Accommodation is unassertive and cooperative. It is the opposite of competing. When accommodating, an individual neglects his/her own concerns to satisfy the concerns of the other party. This style should be used sparingly and infrequently. It can be used when you know that you will have another more useful approach in the near future. Over time, accommodation tends to worsen the conflict and causes conflicts within yourself.

- **Competition**: Competition is assertive and uncooperative. An individual pursues his/her own concerns at the other party's expense. This is a power-oriented mode, using whatever power appropriate (like e.g. argument, rank, economic position, sanctions) to win. It will be obvious that competitors love accommodators. This style should be used only when you have a very strong conviction about your position.

- **Collaboration**: Collaboration is both assertive and cooperative. It is the opposite of avoidance and it involves an attempt to work with the other party to find a solution which satisfies the concerns of both parties. Collaboration as a style should be used when the goal is to meet as many current needs as possible by using mutual resources or when the goal is to cultivate ownership and commitment.

- **Compromise**: Compromise is intermediate in both assertiveness and cooperativeness. The goal is to find some expedient, mutually acceptable solution that partially satisfies both parties. It lies in between competition and accommodation. Compromise gives up more than competition but less than accommodation. It addresses an issue more directly than avoidance, but it does not explore it in as much depth as collaboration. It means, for instance, splitting the difference, exchanging concessions, seeking a quick middle-ground position. It should be used as a style when the goal is to get past the issue and move on.

How to react?

In conflicts people tend to act and react emotionally. Being involved in a conflict you might walk into the same trap, *i.e.* become like the other party - get loud, get more hostile, or withdraw. The reactions are instinctively self-protective and throw you out of balance. A reaction to control the situation and prevent escalation, is to acknowledge that you heard them with a pause or a nod without taking sides or using blaming language. Stay calm and take a few breaths while maintaining eye contact, instead of moving of talking louder or faster yourself. This will give you time to think about what to do, and you also prove that you heard the other person. Your goal is to de-escalate the conflict. You can acknowledge by saying for instance "I understand there is a concern". Refer and show respect to other person's self-image. This will lead him/her towards rationalising his/her behaviour and giving you permission to state your view.

You can get the feeling that the other party is lying or you believe that the other party does not make sense. This may raise a feeling of conflict in you. It is generally better not to give in to this feeling, for instance by pointing it out to the other party. It is better to keep asking questions thus allowing the other party to save face for as long as possible. Try to softly corner the other party into self-correction, protecting you future relationship. Therefore express your feeling aloud but presume innocence.

How to offer your solution

- Picture each person benefiting in some way;
- Do not talk before you are prepared to reach agreement;
- Demonstrate continued good will;
- Do not leave your most important points for last;
- Ask another, mutually respected person to mediate when necessary;
- Stay flexible;
- Honour everyone else's role in coming to terms.

It may happen that the other party offloads his problems onto you. In that case do not interrupt, counter or counter attack. After he is finished could ask "Is there anything else you want to add?", then continue with, "What would make this situation better?" or "How can we improve this situation in a way you believe we can both accept?". In this way you urge the other party to think about solutions, which include your interests as well. In the case of a continued attack, acknowledge you heard them each time and repeat yourself in increasingly brief language variations, like "What will make it better". Do not attempt to solve problems others raise. They will be unhappy with your solutions. Instead try to steer them towards solving their own problems.

How to resolve conflicts: some tips[55]

Regardless of the type of conflict you are dealing with, there are several general rules of thumb you should follow whenever you are trying to bring harmony to a volatile situation. Here they are:

- Reflect your understanding of the other's position or opinion. This says, "I am listening to your opinion and I take your opinion into account before I state mine.";
- Let the other person know that you value him/her as a person even though his/her opinion is different from yours. "I understand (appreciate, respect, see why you feel that way, etc.)". This says, "I hear you and respect your opinion.";
- State your position or opinion. This says, "I don't agree, but I value you - so let's exchange ideas comfortably, not as a contest for superiority.";
- To manage conflicts in a good way requires a lot of practice. Just remember that the goal is to reach a compromise that both of you can live with as well as be happy with. In other words, find a way that both of you can walk away feeling like a winner.

Below you may find some other tips that will help you solve conflicts.

Conflicts in interpersonal relationships

Sometimes in interpersonal relationships, there may be a conflict that you are not aware of. If someone who is normally upbeat and friendly toward you suddenly begins avoiding you or being rude, there is usually a reason. If the person has remained cheerful with everyone else except you, chances are you are dealing with a conflict situation. In these instances, you will want to address the problem by proceeding through the following steps.

- Try to determine if there is a problem between you and the other person;
- If you think there is a problem, set up a private face-to-face meeting to discuss the problem with the other person;
- In a non-confrontational manner, ask the person if there is a problem. If his/her answer is "No", inform the person that you think there is a problem and explain what you think the problem is;
- As you talk, ask for feedback. Do not "attack" the other person with accusations;
- Try to listen to each other with open minds;
- Be sure to respect each other's opinions;
- Take a few minutes to recycle the other person's opinions in your mind;
- Try to determine why the other person felt the way he/she did;
- Avoid "finger-pointing";
- Try to work out a compromise that pleases both of you.

[55] Adapted from Internet page of the Texas Centre for Business Enterprise, Austin, Texas, August 1997.

Conflicts in meetings

Conflicts in meetings can be very disruptive. But they can also be very helpful. Remember, conflicts are disagreements. If the person who is disagreeing with you is raising valid questions, it may benefit the group to address the issues he/she is presenting. In fact, by listening to him/her, you may gain valuable insight into what is and what is not working within your organisation. However, if the person continues past the point of disagreement to the point of disruptiveness, specific steps should be taken. There are conflict resolution tactics that you can use for meetings that get "out of control":

- Find some "grain of truth" in the other person's position that you can build upon;
- Identify areas of agreement in the two positions;
- Defer the subject to later in the meeting;
- Document the subject and set it aside to discuss in the next meeting;
- Ask to speak with the individual after the meeting or during a break;
- See if someone else in the meeting has a response or recommendation;
- Present your view, but do not force agreement. Let things be and go on to the next topic;
- Agree that the person has a valid point and there may be some way to make the situation work for both parties;
- Create a compromise.

Conflicts in negotiations

During negotiations, most conflicts arise because one party feels like the other party is taking advantage of him/her. No one wants to feel like he is giving away something for nothing. In order to avoid these types of situations, there are certain principles you can apply to increase your chances of a successful negotiation.

- Avoid defend-attack interaction. This is non-productive every time;
- Seek more information – ask a lot of questions;
- Check understanding and summarise – make sure that you understand everything;
- Try to understand the other person's perspective – communication is more than just listening; try to see it the other person's way.

CHAPTER 4.6
BASIC SAMPLING PROCEDURES

4.6.1 When, why, and how to take a sample

Sampling and sample analysis may be necessary to document potential evidence of non-compliance. Sample analysis is expensive, therefore, inspectors should ensure that sampling is necessary and cost-effective in every concrete case. The inspector will take a decision on the questions "when" and "why" to sample. "How" to sample will be described in some standard operating procedures (SOPs); medium-specific guidance or manuals will provide more detailed instruction. The inspector must follow such standard operating procedures to ensure the quality of sampling.

By definition, SOPs are written general procedures (national or international) that should be used for the most common types of sampling. Each organization or agency should have SOPs on file that are followed for all routine activities. This insures defensible repeatability, consistency and a written record of approximately what was done when an inspector finds it necessary to take a sample of opportunity. Inspectors should be familiar with SOPs common to the subjects they work with. When an inspector must alter a procedure because of unique circumstances in the field, the inspector should document and explain how and why he/she altered the procedure.

"Why" a sample is taken may be subjective. Sampling may be undertaken if there is a lack of confidence in available data or because of incomplete data in the company or inspectorate's files. The law or a permit may require regular sampling, but equally the need to document an event can be a reason for taking samples.

Usually sampling is thoroughly planned in advance and meticulously executed. However, it may be necessary to take spontaneous samples of opportunity.

"When" to sample is determined by the best chance to obtain a sample that will be representative of the site, situation, or time that needs to be characterised. There are two fundamental types of sampling: composite and grab samples. Composite samples may be described as a uniform measure taken of a specified volume, area, or time. A grab sample may be described as a sample of a precise place at a precise moment in time.

The amount of the product(s) to be collected depends largely on the amount of material required for the anticipated laboratory analysis and to assure representativeness, including the quantity required for quality control purposes (*i.e.* splits, repeat examinations, and replicates). Considering these sampling needs, the sample size is to be kept to a minimum to reduce the burden of disposal of the unused sample portion and to mitigate potential human and/or environmental exposure.

Sampling procedures include designation of sample types, volumes, containers, and preservation methods to be used for each pollutant parameter as well as sample identification and documentation procedures. Specific information on each company should also be developed. This may include pollutant parameters to be sampled, sampling location and safety concerns. Obtaining this information before the sampling trip will allow the sampler to bring the proper equipment, know where to sample and what pollutants to sample for, and to be familiar with necessary safety precautions.

The procedures for taking samples are too complex to be discussed in detail in this toolkit. Only the most fundamental aspects will therefore be introduced. To become qualified in this domain, an inspector should undergo specialized training in sampling, shipping, analytical methods, quality assurance, and quality control.

4.6.2 Making a sample plan

A detailed sample plan has to be developed prior to sampling. This plan will serve as a guide in performing the sampling. The amount of detail necessary depends on the purpose of the sampling and to whom the results will be submitted.

The initial step in setting sample objectives is to clearly establish the ultimate use of the data that will result from it. This step sets the foundation for designing the sample plan and is a means to compare and assess the results. Data quality of a representative sample is referred to in terms of **precision** and **accuracy**.

Initially there should be a plan with the method identified to target a specific chemical (what chemical to look for). The inspector should clearly identify the minimum chemical detection limits (such as parts per million) required for the analysis. The inspector will also have to identify the **level of confidence** required in the analysis. This is usually expressed in terms of + or - percent. For example, it may be required to have more than 90% confidence that the analysis will detect all Polychlorinated biphenols (PCBs) greater than 50 parts per million.

At a minimum, **the plan will include the following:**

1. Introduction

- Identification of the **reason** for sampling;
- Identification of the **aim** of sampling, which can be:
  - Determination of the chemical substances in water, soil, air or waste. This requires a strategy aimed at representative samples. Important in this is the amount of sample points, the location, depth of sampling, and the question if composition samples should be taken;
  - Determination of the source of the pollutants. The strategy should be aimed at the relation between pollutants and emissions. Important in this is describing the situation, and to support this with grab samples at defined locations;
  - Determination of the dimension of the pollution. Important in this is to spread the sample points widely over the sample area;
- Description of the **location** (sampling point), including where the point is situated, what kind of surface, and what activities are taking place, orientation in space (the background).

2. Description of the object of sampling

- Overview of the regulatee: description of the compliance history and legal obligations; identification of any suspicions, complaints or statements about illegal activities;
- Description of the strategy: identification of the components that will be sampled and the strategy that has to be followed. If there is a criminal investigation in progress, the sample strategy will have to follow the criminal investigation procedures;
- Documentation of the situation before beginning the sampling by taking photos or videos. Further, sample registration forms should be used to describe the composition, the amount and the method of sampling. If any product (like pesticides) are being sampled, all necessary arrangements should be made for confiscating it ("chain-of-custody" requirement).

3. Description of the sampling equipment

– Definition of the necessary equipment, like sampling materials, registration material and tools.

4. Packaging and transport

– Description of containers and the packaging material for every kind of sample;

– Description of transportation methods: by whom, how, and when the samples will be transported; will the transfer to a laboratory take place right away or will the samples first be stored. Special international requirements apply if samples are shipped by air, and only certified, trained personnel can approve and organise this shipment;

– Description of storage conditions, including storage of the control samples.

5. Co-ordination

– Identification of co-ordination arrangements: a co-ordinator will be responsible for the progress of the sampling, the safety of the team, and, if necessary, for calling in other experts;

– Description of external contacts: the co-ordinator will maintain the contacts with the suspect and other people involved.

6. Safety issues

– Characterisation of the substance to be sampled: identification of possible pollutants and respective safety precautions to be taken;

– Description of measurements: when, which, and how measurement will take place;

– Description of personal protective equipment and other safety materials needed;

– Assignment of responsibilities: who is responsible for safety. This can be the sample co-ordinator or a special safety co-ordinator. Any instructions from the (safety) co-ordinator will have to be followed immediately.

7. Composition of the team

– Description of the composition of the sampling team (names, functions, or duties) and the workload, the way of communication, and the estimated timescale.

4.6.3 Sampling attendees

Good sampling requires a very professional approach in terms of technical knowledge (how to measure and how to draw conclusions from the acquired samples). It should be clear that experts should be used for complicated sampling, possibly even external experts hired by the inspectorate.

Depending upon the complexity of the process (and safety reasons), it is good practice that during sampling, inspectors are attended by others. Such a need may be determined by things like the place where the site is located (rocky area, swamp, industrial area, stack, hostile area, etc.), when the sampling will take place (daylight, night, snow, rain, etc.), the kind of sample (air, water, noise, soil, etc.), technical complexity. Taking these circumstances into account, the inspector may be attended by:

– Another inspector;

– Someone else from the ministry of environment;

– Local or regional officials;

– A technician from a laboratory;
– An (external) expert (or experts);
– One or more police-officer(s).

To safeguard the sampling quality it is recommended that at least two people conduct the sampling. In all cases leadership has to be established before arriving at the site. The leader is responsible for the coordination and the on-the-spot decisions.

4.6.4 Sample identification and documentation

The objective of sample documentation is to validate sample integrity. The sample must be uniquely identified through all subsequent activities. Additional necessary documentation regarding the nature and circumstances of each sample needed as evidence should be reported. At a minimum, the following items should be documented:

– Sample site identification and/or project number;
  - General location (*e.g.* address of facility);
  - Specific location (of sampled products in facility);
  - Area description and related observations;
– Date and time of sampling;
– Sample description;
– Container contents (specific material collected);
– Name of substance for which analysis is needed;
– Reason for collection;
– Quantity of sample collected (volume, number, weight);
– Identity (sample numbers) of related samples, if any;
– Sampling method;
– Composite, grab, or pre-packaged unit;
– Devices and tools used;
– Pre-cleaning of equipment and decontamination between uses;
– Storage and transport;
– Primary container and lid type and any pre-cleaning used;
– Packaging procedure;
– Preservation, if applicable;
– Method of transfer to laboratory (including date and time);
– Custody and document control records;

– Technical and professional remarks, photographs;

– Correspondance, phone logs, notes, etc. ;

– Other documentation;

A complete and accurate chain-of-custody record is a critical component of official sample documentation. The purpose of an irrefutable chain-of-custody is to trace possession and assure integrity of an official sample from the time it is collected until it is introduced as evidence in a legal proceeding. An accurate, written record of the movement of the sample should be maintained on a chain-of-custody form.

4.6.5 Safety precautions during sampling

An inspector should always be careful during the sampling. There is always the risk of unknown factors, mislabelling of products, or improper documentation or information from other people. The inspector should remain alert to hazards such as spilled or improperly stacked materials, moving equipment, poor ventilation, and bad lighting. The inspector should always use the proper tools, on the one hand to prevent contamination of the sample, on the other hand to safeguard his safety and that of others. During the sampling process it is advised to think about possible accidents, how to prevent them and – in the case of occurrence – how to minimise the risks for the inspector, other people and the environment.

The following safety precautions and actions can be useful during the sampling:

- In the case of a spill of chemicals on clothing or directly onto the skin, remove the clothing immediately and wash the exposed dermal area thoroughly with clean water. Always keep a change of clothing on hand for such emergencies;
- Wash your hands immediately after sampling (first with your gloves still on);
- Do not use the mouth to siphon;
- Do not put hands near the mouth and eyes during sampling operations;
- Keep a supply of clean water and waterless hand cleanser readily available;
- Know the limitations of the protective equipment being used, especially respirators;
- Do not smoke and do not use open fire during sampling;
- Do not mix substances where there is a possibility of or an uncertainty of a reaction;
- Have the phone numbers of local hospitals, doctors, or poison control centres available.

Confined spaces should not be entered unless the inspector is trained and has the proper equipment, such as rescue equipment and respirators. Confined spaces should be tested for sufficient oxygen and lack of toxic and explosive gases. Two people should be present, one to enter the space and the other one to be outside. The person entering should wear a safety harness attached to a retrieval system. This system can be used to rescue the sampler in the confined space without requiring anybody else to enter.

It is the responsibility of inspectors to protect themselves and others during the sampling activities associated with an inspection. Regularly repeated health and safety training is important for inspectors to remain up-to-date with the latest developments in this field.

4.6.6 Sample storage, transport, and preservation

Following collection, documentation, and initiation of chain-of-custody, the officially sealed samples should be stored in a secure area prior to transfer to the laboratory. All documentation will normally accompany the sample(s) to the laboratory. At a minimum, the laboratory should receive the label, an investigation summary report, any chain-of-custody forms, as well as any correspondence or records related to the products' ingredients, stability, or mixing for use. The inspector and/or laboratory personnel must maintain a record of how the sample was transferred, including all transport papers and receipts.

Regardless of which method is employed for sample transfer to the laboratory, several requirements need to be followed:

- Glass containers must never be packaged directly against each other, either within the same plastic bag or within the same transport container.
- The sample label should always be legible through the protective plastic bag.
- A copy of an investigative summary report or equivalent form should be included with the samples, protected in a plastic bag or sleeve.
- The laboratory director or a designee should be notified by telephone that the samples are being transported, the mode of transfer, and the expected arrival time.

4.6.7 Sampling equipment

The laboratory can provide information on the types and volume of samples needed for particular pollutant parameters, sample preservation methods and holding times, and shipping instructions. They may also provide equipment, such as samplers, pH meters, sample containers, chain-of-custody forms, sample labels, tags, and seals.

Prior to the sampling trip, any required sampling and safety equipment should be assembled, cleaned, and checked to ensure that it is in proper working order. All necessary paperwork should also be prepared prior to the trip. This may include assembling and marking, as possible, the required sample container labels or tags, forms and laboratory request sheets. Sampling and field analytical equipment such as pH meters should be calibrated.

Sample tools can easily be contaminated. Cleaning them is crucial under all circumstances to prevent cross-contamination. Oil or greases should be put and transported in sealed plastic bags. Clean sampling tools and protective clothing immediately after use and store them separately where necessary. The laboratory that will be performing the sample analyses may be contacted for specific cleaning instructions. Some laboratories may provide pre-cleaned sample containers.

To clean sampling materials and protective clothing the following cleaning products may be used: green soap, benzene, nitric acid (0,1 M), water, (soft) brushes, cleaning cloths, tube brush. Try to remove the contamination with cold or hot water using brushes, non-perfumed tissues, and cleaning cloths. Inorganic contaminations can be removed with water with some acid. Organic contaminations can be cleaned with gasoline, denatured alcohol, green soap or another phosphate-free detergent. High-pressure spraying pistols and steam cleaners are very good for cleaning drill pipes. In all cases the equipment should finally be rinsed out with water. Let the equipment dry in a warm or cold flow of air and store it dry and dust free.

If it is no longer possible to clean the equipment or if deficiencies are discovered, the equipment should be replaced as soon as possible. Some equipment has only a limited life-time and has to be regularly replaced. For example, gas tube filters, gas detections tubes, safety helmets. Other means (of detection), like the pH-meter, need calibration from time to time. Take care that you have an administrative system that ensures that this happens in time.

Inspectors should be aware of all requirements regarding the proper disposal of sampling equipment. Where equipment has been damaged or contaminated to the point that it is no longer usable, such equipment should be properly cleaned, sealed, and deposited in the appropriate waste containment facility. Broken glass bottles or jars require wrapping in multiple layers of newspaper prior to placing in bags. If contaminated, this broken glassware will require depositing in approved hazardous waste storage or handling facility. If it is necessary to reuse glass or metal sampling equipment, inspectors will need to decontaminate these implements after each sample. As described before, decontamination normally requires washing and rinsing, which creates a waste that should be disposed of in accordance with the applicable regulations.

4.6.8 Sample reporting

The report involves summarising and presenting the sample results. Besides the information documented during sampling, the following items should be reported:

- Comparison of test-results with legal requirements;
- Value of tests-results;
- Legal requirements;
- Comparison and conclusion about compliance.

CHAPTER 4.7
INSPECTION REPORT AND FOLLOW-UP

Under different regulatory regimes, inspection reporting and follow up may be quite different therefore the information presented in the current chapter cannot be directly applied in every country. However, this chapter summarises, in the most general terms, the practices existing in the OECD countries for conducting reporting and inspection follow up. This information can be useful for those countries that are just establishing compliance assurance programmes, but also where existing practices need improvement.

4.7.1 Characteristics and content of an inspection report

The findings of a field visit, throughout all its stages, are presented in some form of written report. The report will reflect all findings and evidence gathered in a comprehensive, useable manner. To meet this objective, information in an inspection report and its annexes must be:

- **Accurate**: All information must be factual and based on sound inspection practices. Enforcement personnel must be able to rely on the accuracy of all information;
- **Relevant**: Information in an inspection report should be pertinent to the subject of the report;
- **Comprehensive**: The subject of the report should be substantiated by as much factual, relevant information as is feasible. The more comprehensive the evidence, the better and easier the prosecution task;
- **Co-ordinated**: All information pertinent to the subject should be organised into a complete package. Documentary support (photographs, statements, sample documentation, etc.) accompanying the report should be clearly referenced so that anyone reading the report will get a complete, clear overview of the subject;
- **Objective**: Information should be objective and factual; the report should not draw conclusions;
- **Clear**: The information in the report should be presented in a clear, well-organised manner;
- N**eat and Legible**: The inspection report is a permanent record and a professional document subject to scrupulous review. In addition, it may become a publicly available document. Therefore adequate time should be taken to allow the preparation of a neat, legible report.

Inspection reports should contain only the facts about the inspection. The report to the inspectorate management should be **objective** and **complete**. When the inspection report is sent to the company, it is preferable that the personal opinion of the inspector is omitted. Although the inspector may communicate to the company his view on certain matters, **facts and figures** should not be mixed with personal opinions! If the inspector has concluded that there has been non-compliance, this information should be mentioned in the report sent to the company. All inspection reports should preferably be read and discussed by more qualified officials, before sending them out.

The extent and contents of the inspection report will depend on the question whether the inspection concerned is an integrated or a specific (single-medium) inspection. Although the specific information items will vary, the following outline for an inspection report and the checklist can be adapted to most situations. The inspector may make selective use of the format and content recommended below.

Checklist 4-2. A possible outline for inspection reports

Level 1 Headings	Level 2 Headings	Level 3 Headings
Summary	General information	Purpose of the inspection; Facts of the inspection (*i.e.* date, time, location, name of the inspector in charge, etc.); Participants in the inspection.
	Summary of findings	Brief summary of the inspection findings; Names and titles of company officials interviewed.
	History of company	Status of the company; Size of the organisation; Related firms, subsidiaries, branches, etc.; Type of operations performed at the company under inspection.
Inspection activities	Opening meeting	Procedures used at arrival, including presentation of credentials and written notice of inspection (the latter only if required); Special problems or observations if there was reluctance on the part of company officials to give consent, or if consent was withdrawn or denied; Topics discussed during the opening meeting; what is the inspector's objective?
	Records	Types of records reviewed; Any inadequacies in record-keeping procedures, or if any required information was unavailable or incomplete; Note if record-keeping requirements were being met.
	Evidence collection	Statements taken during the inspection; Photographs taken during the inspection; Drawings, maps, charts, or other documents made or taken during the inspection.
	Physical samples	Purpose for which samples were obtained; Exact location from which they were obtained; Sampling techniques used; Custody procedures used in sample handling; Results of laboratory analysis.
	Closing meeting	Receipts for samples and documents given to company officials; Procedures taken to confirm claims of confidentiality; Recommendations made to company officials.
Attachments	List of attachments	List of all documents, analytical results, photographs, and other supporting information attached to the report.
	Documents	Copies of all documents and other evidence collected during the inspection. All documents should be clearly identified.
	Analytical results	Sample data and quality assurance data.

Source: Based on IMPEL (1999), Reference Book for Environmental Inspection.

Box 4-5. Ten commandments for writing a good inspection report

1. Write in the first person. "I asked Peter what he did."
2. Write in the active voice. "Peter told me that he buried the drums behind the shop."
3. Write in logical order. Most inspectors write their reports in the same sequence that they conducted their inspections. Attachments and supporting documents should be identified appropriately and in logical relationship with the narrative. For example: "I reviewed the waste manifests and discovered a mistake in the number of drums in section 1(a) of the manifest dated 12 March 1998 (See attachment A-3)."
4. Write the report so that information is easy to access: use headings.
5. Avoid being excessively formal or technical. You should try to clarify rather than make it unnecessarily complex or technical. Clarity is far more important than sounding academic.
6. Avoid the use of colloquialisms, jargon, or offensive language.
7. If your professional credentials (engineer, chemist, scientist, etc.) and inspection objectives require you to reach a professional conclusion do so with a clear explanation of your logic, calculations, and supporting materials. This should be outlined clearly enough in your report so that any other individual with similar professional credentials can repeat your work and reach the same conclusion.
8. Provide supporting verifiable data for any calculations or summaries included in the report.
9. Avoid making assumptions by using words like "all", "never", "always".
10. Write an Executive Summary if the report is long. Most managers will not have the time to read the entire report, so a summary will quickly focus them on the conclusion.

Source: USEPA (2002), Conducting Environmental Compliance Inspections, US EPA, Washington D.C.

4.7.2 Inspection follow-up

An inspection may not be over after visiting the premises of a company. The inspector will need to review the recorded information, examine it for evidence of non-compliance and communicate the conclusions to the operator and/or public prosecutor or police as appropriate. At this point it may be necessary to arrange for further sampling or analysis to be carried out, or for some further investigation in order to verify details and draw definitive conclusions.

When conclusions have been drawn, and confirmed according to the inspectorate's inspection and enforcement strategy, items requiring action by the company, or significant issues resulting from the inspection, such as the need to modify a license, should be communicated to the company in writing, or notified to the appropriate enforcement or licensing authorities, if that is not the inspectorate itself.

The inspection report may also be followed by additional information on possibilities to implement cleaner technology/waste minimising techniques/precautionary activities. This enables the company to take action to improve the environmental situation. Depending on the attitude (pro-active or defensive) of the company towards environmental issues, the inspector can consider providing information on self-monitoring possibilities and related items.

Non-compliance response can only be initiated after the violation is proved based on field inspection and monitoring results. The adoption of different response mechanisms is strongly related to the stipulations of environmental laws and regulations and to the flexibility they provide to the inspectorate. However, such flexibility should be well controlled through the development of a clear enforcement policy to streamline the adoption of different responses.

Where a company has been required to carry out specific actions, such as remediation actions or changes to plant or procedures, the inspector should set a time for carrying out a check to confirm that the actions have been satisfactorily completed.

Checklist 4-3. Inspection follow-up

Are samples from the site visit analysed by accredited laboratories?

❒ Yes ❒ No ❒ Not applicable ❒ Not known

Have the analytical results from the samples being evaluated?

❒ Yes ❒ No ❒ Not applicable ❒ Not known

Is information submitted afterwards by the company been evaluated?

❒ Yes ❒ No ❒ Not applicable ❒ Not known

Were other inspecting bodies informed by sending the inspection report and/or a notification?

❒ Yes ❒ No ❒ Not applicable ❒ Not known

Is a follow-up inspection planned?

❒ Yes ❒ No

Was the company informed? ❒ Yes(*) ❒ No

* If so, (for companies observing the environmental rules) the company was informed by
  - ❒ a letter listing the findings of the inspection, the agreements, time schedules and/or the decisions made
  - ❒ an inspection report attached to the letter
* If so, (for companies not observing the environmental rules) the company was informed by
  - ❒ warning letter including:
    - ❒ the description of infringements
    - ❒ the measures that the company is obliged to take to improve the environmental situation and to undo environmental damage
    - ❒ a time frame
    - ❒ the punishments in the case of repeated non-compliance
  - ❒ the inspection report attached to the letter

Are follow-up inspections planned in co-operation with other enforcement authorities?

❒ Yes ❒ No ❒ Not applicable ❒ Not known

Are the dossiers (licensing dossier, compliance history, etc.) updated?

❒ Yes ❒ No

Source: Based on IMPEL (1999), Reference Book for Environmental Inspection.

When all details have been verified and actions completed, or satisfactorily under way, the inspector should bring the installation file up to date by recording all the relevant information. Where arrangements are in place for publication of environmental data, *e.g.* in a Pollution Emissions Register, he or she should also ensure that the necessary information is delivered to those responsible for compilation of such documentation. Finally, the inspector should review his or her experience of the on-site inspection and related activities to see if there are lessons to be learnt for the future and, if so, provide feedback to his/her supervisors.

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