



Benchmarking on Quality Parameters for Environmental Inspectorates

IMPEL workshop in Copenhagen 8 - 9 September 2005

The European Union Network for the Implementation and Enforcement of Environmental Law is an informal network of the environmental authorities of EU Member States, acceding and candidate countries, and Norway. The European Commission is also a member of IMPEL and shares the chairmanship of its Plenary Meetings.

The network is commonly known as the IMPEL Network

The expertise and experience of the participants within IMPEL make the network uniquely qualified to work on certain of the technical and regulatory aspects of EU environmental legislation. The Network's objective is to create the necessary impetus in the European Community to make progress on ensuring more effective application of environmental legislation. It promotes the exchange of information and experience as well as the development of greater consistency of approach in the implementation, application and enforcement of environmental legislation, with special emphasis on Community environmental legislation. It provides a framework for policy makers, environmental inspectors and enforcement officers to exchange ideas, and encourages the development of enforcement structures and best practices.

Information on the IMPEL Network is also available through its website at:
<http://europa.eu.int/comm/environment/impel>

<p align="center">Benchmarking on Quality Parameters for Environmental Inspectorates Workshop in Copenhagen 8th - 9th September 2005</p>	<p>Number report: <i>8/2005</i></p>
<p>Project Manager: <i>Gudmund Nielsen (Danish EPA)</i></p> <p>Preparatory Group: <i>Kia Regnér (Sweden), Bjørn Bauer (Denmark), Gudmund Nielsen (Denmark)</i></p> <p>Project Group Members: See attached list of participants (Attachment II)</p>	<p>Report adopted at IMPEL Plenary Meeting: Cardiff, UK, 30th November - 2nd December 2005</p> <hr/> <p>Number of pages: 65 Report: 18 Annexes: 4</p>
<p>Executive Summary</p> <p>The report summarises the results of discussions at a workshop in Copenhagen on 8 - 9 September 2005 on parameters for measuring the quality of the administrative work of environmental inspectorates. The workshop was attended by 25 participants from 20 countries and the ECENA Network.</p> <p>As input for the discussions, the participants were invited to prepare in advance a short written overview of existing or planned quality measuring systems from environmental inspectorates in their home countries, and to present ideas for quality parameters for discussion. The written inputs are attached as an attachment to the report.</p> <p>The workshop covered goals, targets, parameters, and indicators that reflect the quality of the inspectorate work itself. Specific focus was on practical and operational parameters and indicators that can easily be implemented at national, regional or local level.</p> <p>A template for identifying relevant parameters was used to promote this intention during the brainstorming part of the discussions. The template included questions about the goals to be achieved, the possible parameters and indicators that illustrate the progress in this respect, and - not least - how to measure and visualise the proposed parameters. The methodology proved useful in identifying helpful quality parameters, especially because it encouraged the participants not only to discuss individual parameters but also to connect parameters and indicators closely with the specific goals of the inspectorates.</p> <p>The report provides people involved in designing quality measurement systems with inspiration in the list of parameters identified during the workshop and in the written contributions.</p> <p>The participants at the workshop found that the use of parameters to measure and visualise administrative performance of environmental inspectorates is still rather complex and difficult to handle. This is especially relevant for the concept of benchmarking in which the performance of similar administrations is compared on the basis of chosen parameters. However, it was also expressed that the findings reflected in the report can create a good common platform for further discussions and development of quality parameters within the framework of IMPEL. Participants also expressed appreciation for the opportunity to learn and discuss about performance measuring.</p> <p>The European Commission has financed the expenses for participating in the workshop and holding the workshop.</p>	
<p>Disclaimer</p> <p>This report on Quality Parameters for Environmental Inspectorates is the result of a project within the IMPEL Network. The content does not necessarily represent the views of the national administrations or the Commission.</p>	

Contents

- Summary 4**
- 1 Introduction 4**
- 2 Background 5**
- 3 Method..... 6**
 - 3.1 Following a logical development template for workshop discussion..... 6
 - 3.2 Classification of parameters 7
- 4 Results 8**
 - 4.1 How to identify potential parameters and indicators 8
 - 4.2 Proposed parameters 12
 - 4.3 Proposed parameter measuring systems 16
- 5 Using benchmarking parameters..... 17**
 - 5.1 Selecting parameters..... 17
 - 5.2 A multi-angled approach..... 18

Attachments:

- I. Project Terms of Reference 20
- II. List of the participants 26
- III. Workshop Agenda 28
- IV. Contributions from participants 30

Summary

During a two-day workshop the participants discussed the possibilities for measuring the quality of environmental inspectorates and inspectorates' work on the basis of parameters visualising typical day to day challenges for inspectorates in Europe. Professionals involved in development of quality measurement systems can, depending on their specific needs and interests, find inspiration from the method to develop parameters and from the list of possible parameters reported from the workshop.

The participants expect further challenges within this topic in the future and found the workshop theme and the discussions and findings important in the general endeavours for continued qualitative development of inspectorate work. The use of parameters to measure and visualize administrative performance and other aspects of importance for the efficiency of environmental administrations, and making these parameters comparative between administrations, was felt rather complex and difficult to handle. However, the findings of the workshop reflected in this report create a good common platform for further development in this area and within the framework of IMPEL.

1 Introduction

This project aims at identifying quality parameters for measuring everyday administrative work in environmental inspectorates authorised to inspect industrial installations. In some countries, the inspectorates also grant licences and permits to industrial installations and similar potentially polluting activities. The work of inspectorates typically includes installations regulated by the IPPC directive and national licensing, and activities regulated by statutory orders, ordinances or other national standards.

The purpose of identifying quality parameters is to enable comparison of the performance of national, regional or local environmental inspectorates respectively, with similar duties and carrying out similar kinds of administrative work. For such comparable inspectorates the challenge is to avoid different approaches to inspection and enforcement work within a defined geographic area. The surrounding society, citizens and the business world, must be able to rely on the fact that environment control and enforcement and other services from the environmental authorities are uniform, and that the outcome of the work, i.e. environmental protection, is taken care of equally and at the highest possible level. For this reason, benchmarking on suitable parameters should further contribute to increased transparency, uniformity and - ultimately - efficiency of the environmental administrations concerned. Last, but not least, the overall aim of comparing the performance of the administrations will be to create a learning environment for the authorities involved.

2 Background

Quality in inspection work is a prerequisite for effective and efficient enforcement of environmental provisions. The realisation of the importance of high administrative standards has been a driving force for a number of completed IMPEL projects, i.e.: *Best Practices concerning Training and Qualifications for Environmental Inspectors* (March 2003), the *IMPEL Management Reference Book for Environmental Inspectorates* (November 2003), and the continuing series of *IMPEL Review Initiatives (IRI- projects)*.

Each country - and perhaps even each environmental inspectorate within a particular country - typically has its own set of quality procedures for inspection work. Yet the question remains whether quality parameters for inspectorates can be identified, which could apply to many or most environmental inspectorates in Europe.

The common endeavours towards quality in inspection work, and the aim that Member States assist each other in promoting similar goals, are in line with the principles laid down in the "Recommendation of the European Parliament and of the Council of providing for minimum criteria for environmental inspections in the Member States", Point 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 VII 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."*

Against this background it was proposed to the IMPEL Meeting in Luxembourg in June 2005 to carry out an IMPEL workshop on identifying, defining and presenting quality parameters appropriate for environmental inspectorates. Further, the workshop would seek to specify the parameters in a measurable way - e.g. suitable for benchmarking an inspectorate against other inspectorates inside and - if possible - outside the country itself. By comparing identified and measurable quality parameters, the environmental inspectorates can learn good administrative practice from each other. In this way the project can contribute to spreading good practice in the EU, and this in turn can contribute to improving quality of inspection work and ultimately contribute to improving environmental protection.

The project proposal was adopted by the IMPEL Meeting in Luxembourg in June 2005 and carried out in Copenhagen from 8 - 9 September 2005. A presentation on the project was given at the IMPEL Plenary Meeting in Cardiff in November-December 2005 and the report was subsequently adopted under written procedure.

3 Method

Call for papers

Before the workshop, the registered participants were invited to submit a one-page description of existing or planned quality measurement systems from their respective countries and possible quality parameters for the discussion (see call in attachment IV)

Initial presentations

As a warm-up before the discussions, invited speakers from Belgium, Finland, Germany and the UK gave a presentation respectively on the background of their written contributions.

This was followed by a presentation of findings from the papers received from the participants

Workshop arrangement

Because of the large number of participants (24 in total), it was decided to split up into three groups, each discussing areas of interest and from that identifying suitable quality parameters. To ensure that the groups were working along the same lines it was agreed to follow a common development template connecting goals or targets to suitable parameters and indicators.

3.1 Following a logical development template for workshop discussion

The development template includes 6 questions:

1. Goals/targets – what does the inspectorate work or administration aim to achieve?
2. Justification – why do we want to measure the performance of the inspectorate in this respect?
3. Parameter – what do we want to measure?
4. Indicator (if relevant) – which factors or circumstances show or are prerequisite for being on the right track?
5. Means of verification – how do we measure the parameter?
6. Can we identify barriers or obstacles to using the proposed parameter?

The parameters and other definitions included in the development template can be visualised and put into the proper perspective by means of the following figure taken from the *IMPEL Management Reference Book (Figure 5)*¹ :

Taken from the top, the figure illustrates the hierarchy of inspection outcome, goals and output – and connected indicators for measuring the performance.

¹ In the IMPEL Management Reference Book, Figure 5, the term *indicator* is regarded synonymous with the term *parameter* used in this report.

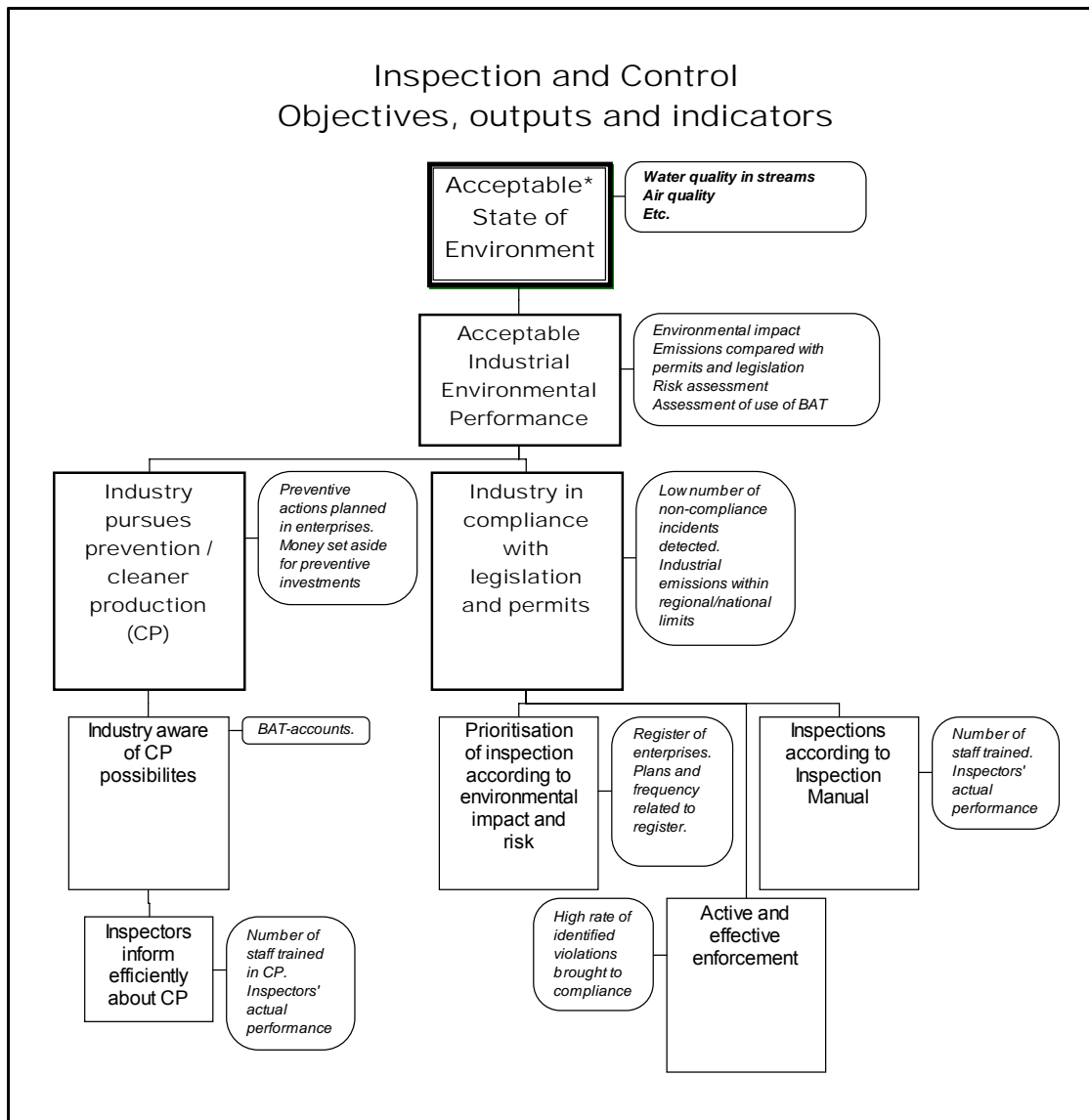


Figure 1. Example of a hieratic structure where layers of goals and the associated parameters are connected to the next layers into a total structure of goals and parameters

3.2 Classification of parameters

Qualitative or quantitative parameter?

During the workshop there was a discussion on whether the parameters identified had qualitative or quantitative characteristics. The initial view was that most were quantitative but this was modified during the discussion. It was recognised that even parameters that appeared quantitative at first sight could in fact be qualitative when they were used to examine trends over a period of time or when they were looked at in conjunction with other data. Therefore very few of the parameters came out as strictly qualitative or quantitative. Most, or maybe all, parameters more or less point at developments in the inspectorate that also affect the quality of its work, defined as

effectiveness and efficiency of the inspectorate. For this reason, distinction between quantitative and qualitative parameters is omitted in the following.

Overall classification of parameters

The parameters can be roughly classified in a hierarchical order where each group of parameters influences the quality of the next group:

- Input parameters - e.g. resources available for inspection and/or permitting, staffing, equipment etc.;
- Output parameters - e.g. inspections carried out etc.
- Outcome parameters - e.g. number of sites brought into compliance with regulation, reduced waste production, increased recycling or possible measurable effects in the environment as result of inspection work.

Classification according to function

For more practical purposes parameters can be further characterised according to their function in the relevant context, e.g.:

- Budget parameters – e.g. time and money available.
- Parameters characterising the inspection workload – e.g. number of sites that the inspectorate is obliged to inspect.
- Inspection and inspection efficiency parameters – e.g. number of sites inspected.
- Resource account parameters – e.g. resources spent on inspection work.
- Qualification parameters – e.g. qualifications and competences available.
- Inspection system parameters – e.g. internal routines and mechanisms in the inspectorate.
- Permitting or permitting efficiency parameters – e.g. number of permits made, time utilised for permitting.
- Decision parameters – e.g. number of decisions appealed against or corrected.
- Service parameters – e.g. handling time for preparing a permit, stakeholders' satisfaction.
- Inspection outcome parameters – in general, measurable environmental results due to inspectorate work.

4 Results

4.1 How to identify potential parameters and indicators

During the two-day workshop the participants thoroughly discussed and formulated a series of potential parameters and indicators from which environmental inspectorates can find inspiration and maybe further elaborate parameters suitable for the specific goals and conditions.

The following tables - 1. to 6. - show examples of parameters and indicators discussed and proposed, illustrating the progress in meeting the goals and targets formulated.

Table 1. Inspectorate staff

1. Goal or Target	A highly qualified inspectorate staff
2. Justification	<ul style="list-style-type: none"> • Effective organisation • Attractive organisation • A vocation for staff members
3. Parameter	<ul style="list-style-type: none"> • Comparable salaries - within the country (e.g. the private sector) • Variety of education • Inspectors' "independency" • Inspectors' responsibility • Inspectors' motivation • Inspectors' initiatives • Customers' (citizens & companies) satisfaction • Shortest possible - or fixed - time for preparing a permit • Clear conditions in permits • Enforceable and achievable permits - also seen from the industry point of view
4. Indicators	<ul style="list-style-type: none"> • Ability to recruit staff • Staff turnover • Investigation / interviews / auditing of reports etc. • Number of appeals against authority's decisions - approved/rejected • Salary level
5. Means of verification	<ul style="list-style-type: none"> • Audits, internal and external • Co-operation internal • Surveys of internal satisfaction • Statistics • Ability to do the job - linked to education/vocation • Resources for training
6. Barriers/Obstacles	<ul style="list-style-type: none"> • Lack of "standards" • Budget for salaries • Political priorities • Conflict of interest between private and public sector

Table 2. Consistent Inspection Approach

1. Goal or Target	<p>a. Inspectorates are working consistently (not uniformly!), site-specific but with similar approach and fairness.</p> <p>b. Guarantee for citizens that the environment gets same level of treatment throughout country or area.</p>
2. Justification	<ul style="list-style-type: none"> • The expectations to inspectorates' work are well known • Ensures minimum standard (legal compliance)
3. Parameter	<ul style="list-style-type: none"> • Measurement of activity (according to working programme) • Work based on same structure/plan (including philosophy, principles, procedures and systems) • Meetings/networks/cooperation between inspectorates • Exchange of staff (within and between countries) - for cross fertilising of ideas • Sufficient common and up-to-date guidelines - e.g. based on working groups and/or review system
4. Indicators	<ul style="list-style-type: none"> • Knowledge/experience • Common working system • Funds for promotion, encouragement, cooperation • Presence of national campaigns
5. Means of verification	<ul style="list-style-type: none"> • ISO 9000 at basic principle level - same procedure used (not international comparison) • Similar approach according to working programme • Specific systems - e.g. for exchange of staff • Benchmarking – e.g. do you have a system?
6. Barriers/Obstacles	<ul style="list-style-type: none"> • Different cultures - entrenched views • Lack of initiative because success not guaranteed • Lack of cooperation • Lack of funds to promote cooperation • Lack of review system for guidelines etc.

Table 3. Complaints

1. Goal or Target	To reduce the number of complaints from citizens
2. Justification	<ul style="list-style-type: none"> • Complaints break the "face" of the inspectorate and disturb planning. Can also be indicator of enterprises behaving inappropriately regarding the environment
3. Parameter	<ul style="list-style-type: none"> • The actual number of complaints from citizens/enterprises
4. Indicators	<ul style="list-style-type: none"> • The absolute figures and the relation between "justified" and "not justified" complaints
5. Means of verification	<ul style="list-style-type: none"> • Number of sites or installations checked compared to the planned number
6. Barriers/Obstacles	<ul style="list-style-type: none"> • Insufficient co-operation between enforcement authorities • Gaps and overlaps in the legislation • Too few resources to both handle complaints and carry through the planned work (follow up on complaints should in principle be part of the inspection plan)

Table 4. Equipment and laboratories

1. Goal or Target	Adequate equipment and preparedness of labs (for daily inspectorate work)
2. Justification	<ul style="list-style-type: none"> • Sufficient resources for work • Confidence in results - Quality assured (QA)
3. Parameter	<ul style="list-style-type: none"> • Equipment fit for purpose • QA system
4. Indicators	<ul style="list-style-type: none"> • Ability to use internet/intranet technology • Adequate registration system • Resources per inspectorate
5. Means of verification	<ul style="list-style-type: none"> • Review by expert
6. Barriers/Obstacles	<ul style="list-style-type: none"> • Lack of knowledge • Lack of political support • Insufficient financial resources

Table 5. Organisation of inspectorate

1. Goal or Target	A well organised and effective inspectorate
2. Justification	<ul style="list-style-type: none"> • Effective organisation leads to improved environment • Attractive organisation
3. Parameter	<ul style="list-style-type: none"> • Environmental situation • Vision • Strategy with goals and action plans • Visible leadership, effective management • Clear structure • Adequate systems • Number of appeals against inspectorate's decisions won and lost
4. Indicators	<ul style="list-style-type: none"> • Environmental situation on basis of selected parameters • Inspectorate organisation plan • Disseminated strategy with action plans • Staff development plans • Tasks and duties clearly defined between employees and external partners • Staff turnover
5. Means of verification	<ul style="list-style-type: none"> • Stakeholder opinion polls • Organisational audits and reports
6. Barriers/Obstacles	<ul style="list-style-type: none"> • Lack of tools for organisational improvements • Political priorities • Conflicts of interest between private and public sector

Table 6. The regulated facilities' environmental performance

1. Goal or Target	The regulated facilities have a good environmental performance
2. Justification	<ul style="list-style-type: none"> • The essential goal of inspectorate efforts
3. Parameter	<ul style="list-style-type: none"> • Environmental situation • Environmental targets on specific pollutants and recipients • Compliance situation and compliance history
4. Indicators	<ul style="list-style-type: none"> • Ambient environmental situation • Discharges of selected substances • The facilities' investments in improved manufacturing equipment • Implemented environmental systems in the facilities
5. Means of verification	<ul style="list-style-type: none"> • Surveys of the environmental situation • Inspection site visits • Enterprise investment plans
6. Barriers/Obstacles	<ul style="list-style-type: none"> • Lack of measuring equipment • Lack of environmental goals and targets • Conflicts of interest manufacturing/environment • Lack of funds for investment • Lack of knowledge of CP solutions

4.2 Proposed parameters

The following presents an overall list of the parameters proposed to the workshop. The parameters are arranged under headings reflecting their main or logical function. It should be noted that some parameters could easily belong to several of the proposed functional groups. Furthermore the groups are not intended to be exhaustive; further groups as well as subgroups can be defined as necessary.

Budget parameters

- Total time and money available to the organisation
- Time allocated per installation for: permitting, inspection and compliance monitoring, assessment of reports from facilities – IPPC / others
- Costs allocated per installation for: permitting, inspection and compliance monitoring, assessment of reports from facilities – IPPC / others
- Resources allocated for training of inspectors - per inspector and total for the whole staff
- The amount of time and money allocated to develop ways of defining and/or monitoring the amount of pollution prevented
- The amount of time and money allocated for the inspectorate's research and development work.

Inspection burden and prioritising parameters

- No. of IPPC facilities for inspection – broken down into sector, size, complexity, risk etc.
- No. of Seveso facilities – broken down into complexity etc.
- No. of other facilities for inspection - broken down into sector, size, complexity, risk etc.
- The distribution of more or less environmentally friendly installations categorised according to a categorisation scheme
- No. of facilities with major, medium and minor lack of compliance
- No. of infringements detected
- No. of infringements in each field: air emissions, water, waste water, solid waste, noise, safety, etc.
- No. of accidents
- No. of cases registered for appeals or complaints
- No. of complaints per inspector filed against inspectors

Inspection and inspection efficiency parameters

- No. and length of routine inspections per specified type of installation – per inspector and/or per group of inspectors
- No. of inspections conducted per year - on-site, desk study, total, occasioned by complaints etc.
- No. of inspections conducted (simple, complex and very complex)
- Deviation from planned frequencies of inspection within different risk categories (i.e. high, medium, low) measured over a certain period of time
- No. of "evidence-based" inspections (transgression of limit values, accidents) per installation (fewer the better)
- No. of announced or unannounced site visits, broken down by low, medium and highly environmentally friendly installations
- Quality of inspection reports
- No. of samples collected, measurements made and similar monitoring work
- Authority enforcement actions of different kinds per "total inspection" and broken down by low, medium and highly environmentally friendly installations
- No. of warnings to facilities
- No. of prohibition notices/orders issued
- No. of warrants issued (mandatory notifications in dangerous situations)
- No. of orders
- No. of cases reported to prosecution
- No. of complaints from citizens successfully dealt with, relative to total complaints sent to the inspectorate

Resource account parameters

- Resources used per "total inspection" for similar installations, but broken down by low, medium and highly environmentally friendly installations
- Average time used for each site visit (including planning, carrying out, reporting and following-up) for enterprises in different risk categories
- Time saved by efficient coordination of the administrative processes cutting the time between inspection, inspection report and possibly prohibition notice, contravention processes and the application of fine
- Total amount of fines received

Qualification parameters

- Inspectors' level of education
- Variety of professional qualifications in the inspectorate
- Percentage of the inspectors formally accredited environmental auditors
- Core competency of inspectors
- Salary of the inspectors (highly influential on personnel's qualifications)
- The kind of employment contracts – including assuring inspectors' independence
- Resources for in-service training (also a budget parameter)
- Turnover of inspectors in the inspectorate
- No. of experts for one complex company
- No. of contact persons for a company
- Auditing of inspections (internal & external)
- Existence of a supporting competence centre
- No. of working programmes and results
- Methods of supervising the instructors by superiors and prefixed administration levels
- Quality and quantity of the office equipment
- Quality and quantity of the technical equipment (for monitoring etc.)
- No. of justified complaints against inspectors
- Availability of quality standards or manuals

Inspection system parameters

- A simple, common risk-classification system for enterprises with discharge license
- The Environmental Protection Operator and Pollution Risk Appraisal (EA OPRA, by the Environment Agency for England and Wales)
- Environmental risk screening. An adapted version of EA OPRA used to classify the sites according to risk. The following attributes are considered: complexity, localization, emissions to water, air and soil, environmental management and compliance.
- Assessment of inspectorate's performance by number of disturbance reports as function of the level of limit values - when there are 'soft' limit values in conditions there should be as low a number of reports as possible, but when there are 'stringent' limit values in conditions a low number of reports may not be good.
- Independency of inspectorate and inspectors
- Confidentiality of inspectorate and inspectors
- Inspectorates' establishment of performance indicators based on type and size of facilities in addition to the type and number of inspections/audits undertaken by individual regulators
- Mechanisms of coordination with other central and regional environmental authorities in order to achieve know-how sharing
- Multi-agency enforcement actions
- Inspection "calibration" exercises, e. g. regular sessions where environmental inspectorates from European countries are invited to describe how they would handle and follow up different situations and findings on site visits in a relevant business sector. The exercise should be followed by a workshop where the

inspectors who participated discuss the answers and try to reach a mutual understanding of the best way to handle the situations and findings that were put before them in the exercise.

Permitting or efficient parameters

- No. of facilities for permitting - IPPC / others
- No. of permits - IPPC / others - prepared per year per inspector or inspectorate
- Time to grant a permit - IPPC / others - after all necessary application documents are submitted
- Total cost of preparing a permit - IPPC / others
- Instructions for fast permit procedures
- Number of spot tests of permits by predetermined administrations

Decision parameters

- No. of appeals against inspectorates' decisions – permits, licenses, orders etc.
- No. of court procedures
- No. of appeals rejected and heard by administrative courts
- No. and rate of corrections to inspectorate decisions

Service parameters

- Processing time (e.g. no. of days) from receiving an application to signing a decision - e.g. a license
- Meetings with stakeholders
- Time taken to respond to correspondence/assess reports
- Proportion of permits with and without participation of public
- No. of inspections of official files (citizens or lawyers)
- Quality and quantity of public relations (print media, websites etc.)
- Results of queries from companies
- Results of queries from citizens

Inspection outcome parameters

- The amount of pollution prevented as a result of inspections
- The amount of actual pollution prevented in relation to planned pollution prevented
- The fact that prevention of pollution is planned and monitored
- The numbers of fields of inspection for which prevention of pollution is planned and monitored
- Real state of the environment (water, air, soil, waste etc.) as result of the inspectorate's work – and with environment data published in annual reports with statistics, press releases etc.
- Periodical national or regional reports with data on state of the environment, including what is getting better and what is getting worse, and outlining what the inspectorate plans to do, as well as what others in the surrounding society need to do.

4.3 Proposed parameter measuring systems

- Benchmarking systems for selected parameters – electronically and possibly connected to internal or public reports
- National fixed minimum criteria for inspection elements – e.g. total inspections for different types of installations
- Quality System – electronic – ISO9000 (principally National & some regional)
- Electronic recording system - (NEMS; National Environmental Monitoring System)
- National QA Inspection Forms (for each regime)
- National Reporting Systems (e.g. copy of form & covering letter to operator)
- National - Generic Inspection Protocol
- National - Generic Inspection Procedure
- National – Regime-specific training in inspection principles (internally delivered & mandatory for all those involved in the relevant regime)
- A uniform and codified IT system from which statistics can easily be generated
- Quarterly reports on resources used for activities compared to targets in national inspection plan
- Regular evaluation of inspectorate's activities compared to national environment goals. Procedures and documentation for: annual inspection plan, frequency of site visits according to risk classification, training of inspectors, planning, carrying out, reporting and following-up site visits, co-operation with police, concerted multi-agency enforcement system etc.
- Adaptation of the EA OPRA (Operator Pollution and Risk Appraisal) scheme as indicator of inspectorate performance and for planning inspections. This tool classifies the sites in a band according to the following factors: complexity of the site, location, emissions to water, air and soil, environmental management and compliance.
- Setting up task forces to implement projects to prevent environmental risks and so implement better environmental quality (water quality basins, air quality in an industrial area etc.)
- Setting up cross-border training courses to improve specific inspection work, e.g. inspection of SEVESO II facilities
- Cooperation on how to make judges and public prosecutors more sensible to environmental problems resulting in fewer acquittals in courts, increases in the amount of fines applied, etc
- Cooperation on facility operators' management of the inspection activity resulting in better compliance with environmental legislation, better compliance with deadlines stipulated in the warrants and warning notices issued, and more fines paid voluntarily without appeals to the court
- Cooperation on positive changes in facility operators' behaviour, resulting in e.g. a better environmental management system, better practises in segregation and deposition of dangerous and non-dangerous waste, implementation of internal and end-of-pipe measures in order to reduce the quantity of pollution discharged from industries and urban waste water etc.
- Interviews with the inspectors
- Result of internal and external reviews of the organization and workflow (e.g. ISO standards, stakeholders' satisfaction etc.)
- External reviews by consultants and/or EMAS

5 Using benchmarking parameters

As has been mentioned before, the main value of benchmarking is that measuring performance against colleagues and colleague organisations can contribute to creating a learning environment through promoting awareness of common good practise by discussion of the parameters describing the goals, and especially the results from the benchmarking process. Some parameters can be rather easy to define, especially those belonging to the input or output group of parameters. On the other hand, other parameters can be more complicated and costly to use, especially what we call outcome parameters. These parameters often aim at illustrating the effect on the outer world of the efforts applied. An example of this is in Figure 1, where the parameters measuring the development towards the long-term goal, *Acceptable state of environment*, are the quality of the surroundings, streams, air etc.

5.1 Selecting parameters

It is assumed that appropriate comparison of selected parameters takes place when trying to benchmark aspects of administrative work, culture, structure etc. that influence the effectiveness and efficiency of environmental administrations.

Therefore, the selected parameters should be well defined, easy to explain and not least fair to the administrations compared. As an example, it should be possible to decide unambiguously whether a relatively high or low score on a parameter is a good or a bad sign, or whether a given value really tells us what we want to know. For example, should many warnings or police reports be taken as a sign of efficient enforcement work compared to similar inspectorates, or does it rather illustrate lack of ability to promote compliance?

Many of the parameters presented in this workshop report cannot be used directly without further explanation or detailing. For example, before using the budget parameter *Resources allocated for training of inspectors*, a precise definition should be worked out of what “training” includes. Similarly, all kinds of resources should be defined in a comparable way, e.g. converted into “man-years” (one man-year = working hours for one inspector employed full-time for one year). Another example could be the use of service parameters like *Result of questioning companies/citizens*, where a common framework and template for the questioning should be worked out and agreed upon by the administrations before the inquiry.

Before starting benchmarking the specific conditions and further circumstances connected to the chosen parameters should be discussed, prepared, and agreed upon by those involved. Also the question of interpretation of the results should be made clear and unambiguous beforehand.

As environmental administrations in the EU intend to have similar approaches in administration of common EU environmental legislation, many possible benchmarking parameters could also be useful across the national borders. For this use especially, the parameters should not be seriously influenced by individual country size, geography, industrial structure, administrative systems etc.

5.2 A multi-angled approach

For more complex or broadly formulated goals or targets it can be necessary to apply several parameters to get a clear picture of the situation. Examples of this are in Table 1 and Table 2, where ten and five different parameters respectively were proposed during the workshop to measure the development towards achievement of the chosen goal.

The need for applying several or maybe many parameters will be further relevant when comparing environmental inspectorates with wide a disparity in organisation, methodology and culture. In particular, challenges can be foreseen when trying to compare inspectorates from different countries or maybe different regions with different infrastructures or different political priorities.

When an optimum of parameters is used, more aspects will be included in the evaluation of the actual development. A multi- angled approach can, besides the differentiated view, give a far better understanding of problems and challenges connected to the complex goals and targets that might be formulated.

TERMS OF REFERENCE

No.	Name of project
	<i>Benchmarking on Quality Parameters for Environmental Inspectorates – Workshop in Copenhagen in the autumn 2005</i>
1. Scope	
1.1. Background	<p>IMPEL has on several occasions discussed the expectations of the quality of inspection work. On the basis of these discussions, amongst other things, the project and subsequent report <i>Best Practices concerning Training and Qualifications for Environmental Inspectors</i> (March 2003) were completed. The quality of inspection work depends on the quality of the administrative procedures involved in the inspectorate itself. Similar, this recognition inspired the development and performance of the <i>IMPEL Review Initiatives (IRI-projects)</i>, and also the <i>IMPEL Management Reference Book for Environmental Inspectorates</i> (November 2003).</p> <p>Each country - and perhaps even each environmental inspectorate within a certain country - has its own set of quality procedures for inspection work. Yet the question remains of whether quality parameters for inspectorates can be identified, which could cover most, or even all environmental inspectorates in Europe,.</p> <p>A high level of environmental protection presupposes a high level of quality in the efforts made by the inspectorates. Both this aim, and the aim that Member States should assist each other in promoting similar goals, are in line with the principles laid down in the “Recommendation of the European Parliament and of the Council of providing for minimum criteria for environmental inspections in the Member States”, Point III – Organisation and carrying out of environmental inspections:</p> <p>3. <i>“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 VII of this Recommendation.”</i></p> <p>4. <i>“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</i></p>

	<p><i>officials.”</i></p> <p>This Terms of Reference proposes an IMPEL workshop on identifying, defining and presenting quality parameters for environmental inspectorates. Further, the workshop will seek to specify the parameters in a measurable way – e.g. suitable for benchmarking an inspectorate against other inspectorates inside or outside the country itself.</p> <p>The potential benefit of the workshop will be to learn from each other by comparing inspectorates on basis of one or several of the quality parameters identified. In this way the project can contribute to spreading good practice in the EU, and this in turn can lead to improved quality of inspection work and ultimately contribute to improving environmental protection.</p> <p>The idea for the workshop was presented at the Cluster I Meeting in Warsaw from 30 Sept. to 1 Oct. 2004. There was a broad interest in the idea and support to prepare a ToR for the project.</p> <p>At the following Cluster I Meeting in Rome from 7-8 April 2005 the ToR was discussed and finally recommended to the IMPEL Meeting for adoption.</p> <p>The workshop will be held in Copenhagen in the autumn of 2005.</p>
<p>1.2. Definition</p>	<p>The workshop will seek to identify and discuss inspectorate quality parameters such as e.g.:</p> <ul style="list-style-type: none"> • Quality control of administrations (e.g. ISO xx) • Resources (money) used per year per inspector on in-service training (training on job) • Numbers of integrated IPPC inspections per inspector per year – per type of installation • Ressources used for integrated inspection of specified SMEs • "Customer" / stakeholder satisfaction or no. of complaints • Categorisation of installations (companies) into levels, e.g.: high -, medium -, and less environmental positive. • Results for environment level of emission - etc. <p>As many inspectorates' obligations include preparing of permits also this aspect could possibly be discussed, e.g.:</p> <ul style="list-style-type: none"> • Time used for preparing a certain type of IPPC

	<p>permit:</p> <ol style="list-style-type: none"> 1. From start of application until all information needed is available 2. From the time all information is available until permit is granted <ul style="list-style-type: none"> • Resources used per IPPC permit - per type of installation - etc. <p>Furthermore, the workshop will discuss how the parameters found suitable can be presented or benchmarked, e.g.:</p> <ul style="list-style-type: none"> • On ministry or chief inspectorate websites • In an annual publication to the public, politicians etc. • Via a web-based interactive system where an inspectorate can compare itself with other inspectorates in the country.
1.3. Objective of project	<p>The project aims at identifying and defining clear, transparent and comparable quality parameters for environmental inspectorates, thereby giving the inspectorates the possibility to compare and learn from each other.</p> <p>Further, the project will discuss how the quality parameters found suitable can be used and exploited.</p>
1.4. Product(s)	<p>In addition to the benefits mentioned in section 1.1., the project will produce a workshop report, with the discussion inputs from the participants and presentations of the findings from the discussions, including recommendation of suitable quality parameters for inspectorates.</p> <p>Moreover, the report will provide ideas on how the parameters can be used in a way - or ways - where the intended benefits can be achieved.</p>
2. Structure of the project	
2.1. Participants	<p>A minimum of 8 and a maximum of 16 participants from IMPEL Member States and the IMPEL Secretariat is estimated to be a suitable number of participants for the workshop.</p> <p>The participants will be experienced inspectors who will be willing to give written contributions to the workshop and the workshop report on ideas for discussion, and/or will present quality parameters - or similar quality-assurance instruments - from their home inspectorates. In addition - depending on the time available - the participants might be invited to give a short oral presentation at the workshop of their written</p>

	contributions.														
2.2. Project team	Same as in 2.1														
2.3. Executor	Danish Environmental Protection Agency (DEPA) will be responsible for the execution of the workshop, including final preparation of the workshop report. Gudmund Nielsen, DEPA, will lead the project.														
2.4. Reporting arrangements	The workshop report will be discussed in Cluster I for commenting to the project manager, and after possible adjustment presented to the IMPEL Meeting for final adoption and dissemination through the IMPEL web-site.														
Resources required															
3.1. Project costs	<p>5.3 Human resources Each of the workshop participants are expected to contribute 4 days' work, including: 1 day for preparing the written contribution to the workshop and the workshop report 2 days for the workshop in Copenhagen, including travelling to and from Copenhagen. The workshop will start at noon on the first day and finish in the afternoon on the next day. 1 day for commenting on the workshop report.</p> <p>The total human resources depends on the number of participants. For 8 to 16 participants the resources will be from (8 – 16) x 4 days = <u>from 32 to 64 days of work.</u></p> <p>In addition, the Danish EPA will prepare the workshop and afterwards finalise and follow up on the workshop report. This is estimated at app. <u>6 days of work.</u></p> <p>5.4 5.5 Financial resources In accordance to the new funding arrangements, expenses for travelling, accomodation and meeting rooms are to be covered by the Commission. Per person this cost will amount to app.:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Hotel costs for one night</td> <td style="text-align: right;">€</td> </tr> <tr> <td>150</td> <td></td> </tr> <tr> <td>Air travel</td> <td style="text-align: right;">€</td> </tr> <tr> <td>750</td> <td></td> </tr> <tr> <td>Meeting room (incl. lunch, coffee etc.)</td> <td style="text-align: right;">€</td> </tr> <tr> <td><u>100</u></td> <td></td> </tr> <tr> <td></td> <td style="text-align: right;"><u>€ 1,000</u></td> </tr> </table> <p>Total costs for minimum 8 and maximum 16 participants will amount to: From (8 – 16) x € 1000 = <u>min. €8,000 - max. €16,000</u></p>	Hotel costs for one night	€	150		Air travel	€	750		Meeting room (incl. lunch, coffee etc.)	€	<u>100</u>			<u>€ 1,000</u>
Hotel costs for one night	€														
150															
Air travel	€														
750															
Meeting room (incl. lunch, coffee etc.)	€														
<u>100</u>															
	<u>€ 1,000</u>														

3.2. Fin. From Com.	Between € 8,000 and € 16,000, depending on the number of participants
3.3. Fin. from MS	None.
3.4. Human from Com.	None.
3.5. Human from MS	From (32 + 6) days to (64 + 6) days = <u>38 days to 70 days</u> , depending on the number of participants
4. Quality review mechanisms	
	The workshop report will be commented by the participants and presented for discussion and commenting in Cluster I
5. Legal base	
	<ol style="list-style-type: none"> 1. Proposal for <i>The Sixth Environmental Action Programme</i>, Chapter 2.1, Actions to be taken in exchanging best practice. 2. <i>The Recommendation of the European Parliament and of the Council of providing for minimum criteria for environmental inspections in the Member States</i>, Point III, 1. & 2.
6. Project planning	
6.1. Approval	Cluster I in Rome 7-8 April 2005 discussed the project ToR and recommends it for approval at the Luxembourg Meeting 8-10 June 2005
6.2. Fin. Contributions	According to point 3.1. No further contributions are needed
6.3. Start	Autumn 2005
6.4. Meetings	Autumn 2005 (Preferably 8 – 9 September 2005)
6.5. Product	December 2005
6.6. Adoption by IMPEL	December 2005 (IMPEL Meeting)

Attachment II

Participants at IMPEL Workshop in Copenhagen 8 – 9 September 2005 on Quality Parameters for Environmental Inspectorates

6 Country	Name	Institution
Belgium	Mr. Olivier Dekyvere	Environment police department Chaussée de Binche, 101, 7000 Mons
	Mr. Jean-Pierre Janssens	Brussels Inst. Manag. Env. Gulledelle 100, 1200 Brussels
Czech Republic	Mr. Milan Drbohlav	ČIŽP OI Liberec, Czech Republic
Denmark	Ms. Marie Leer Jørgensen	Danish Env. Protection Agency Strandgade 29, 1401 Copenhagen K.
	Mr. Gudmund Nielsen	Danish Env. Protection Agency Strandgade 29, 1401 Copenhagen K.
	Mr. Bjørn Bauer	PlanMiljø Ellevevej 5, Østrup, 3670 Veksø
Estonia	Mr. Himot Maran	Environmental Inspectorate Kopli 76, 10416 Tallinn
Finland	Mr. Markku Hietamäki	Ministry of the Environment P.O. Box 35, FIN-00023, Government of Finland
France	Ms. Annick Bonneville	Ministry for ecology and sustainable development 20 Av de Segur, 75302 PARIS 07 SP
Germany	Mr. Helmut Wendel	Regierungspräsidium Tübingen Konrad-Adenauer-Str. 20, 72072 Tübingen
Ireland	Mr. Leo Sweeney	Environmental Protection Agency P.O. Box 3000, Johnstown Castle Estate, Wexford Co Wexford
Italy	Ms. Alessandra Burali	APAT (Agenzia per la Protezione dell'Ambiente e per i Servizi Tecnici), Servizio Interdipartimentale ISP Via Curtatone, 3, I-00185 Roma
Latvia	Ms. Sandra Krivmane	State Environmental Service Rupniecibas Str. 23, Riga, LV-1045
Lithuania	Mr. Vaclovas Berzinskas	Lithuanian State Environmental Protection Inspectorate Juozapaviciaus Str. 9, Vilnius LT-09311
The Netherlands	Mr. Wout Klein	VROM Inspectorate Korte Voren 5, 7241 HR Lochem
Norway	Mr. Øyvind Schreiner	Pollution Control Authority P.O.Box 8100, Dep.NO-0032 Oslo
Portugal	Ms. Leonor Cartaxo	Inspectorate General for Environment Rua de O Século 63, 1249-033 Lisboa

Romania	Ms. Mihaela Beu	National Environmental Guard-Regional Commissariat Cluj Calea Dorobantilor 99, Cluj-Napoca/ 400609
Slovenia	Ms. Tatjana Bernik	Inspectorate for Environment and Spatial Planning Dunajska c. 47, 1000 Ljubljana
Spain	Mr. Jesus Angel Ocio	Basque Government Donostia-San Sebastian 1, 01010 Vitoria-Gasteiz
Sweden	Mr. Carl-Philip Jönsson	County Administrative Board of Kronoberg SE-35186 Växjö
	Ms. Kia Regnér	Local Authority of Österåker SE-184 86 Åkersberga
United Kingdom	Mr. Simon Bingham	Scottish Environment Protection Agency (SEPA) Erskine Court, Castle Business Park, Stirling Scotland FK9 4TR
	Mr. Terence Shears	Environment Agency Rio House, Waterside Drive, Aztec West, Almondsbury
ECENA network	Mr. Mihail Dimovski	The Regional Environmental Center for Central and Eastern Europe, ECENA Secretariat

Attachment III



.....
DANISH MINISTRY
OF THE ENVIRONMENT

Environmental
Protection Agency

IMPEL Workshop on Quality Parameters for Environmental Inspectorates

Copenhagen 8 - 9 September 2005

Agenda

Thursday 8 September 2005

13.00 -13.45

1. Welcome and introduction of participants

13.45 - 14.00

2. Summarised presentation of participants' ideas for quality parameters – prepared from the received written contributions, and for further discussion under point 4.

14.00 - 15.00

3. Invited speakers presents selected contributions

15.00 - 15.30

Coffee break

15.30 - 17.30

4. Introduction followed by 3 parallel brainstorming sessions, including discussion of:

- **Quality parameters for good inspection work. By mean of which parameters can the inspectorate measure its performance against other inspectorates? The definition of quality could e.g. include input, output and outcome (immediate, intermediate and long term) and effectiveness (outcome versus goals) and efficiency (outcome versus input and goals)**
- **Target group discussions, including: which stakeholders are involved, what do they expect from inspectorate work, and how are they influenced by inspection work?**
- **How does (or should) stakeholders influence the inspectorates work?**

Friday 9 September 2005

09.00 - 09.30

5. Plenary - Summing up from yesterday

09.30 -10.30

6. The 3 parallel brainstorming sessions continued, including discussion of:

- **How do we measure the quality of the inspectorates' work?**
- **Indicators for each quality parameter identified during all sessions**
- **Means for verification of each indicator**

10.30 - 11.00

Coffee break

11.00 - 12.00

7. The 3 parallel brainstorming sessions continued, including discussion of possible complementary discussion points

12.00 -13.00

Lunch

13.00 -14.30

8. Plenary - Summing up from workshop and conclusions

14.30 - 14.45

9. Further work - including finalising of draft workshop report

14.45 -15.00

10. Closure and farewell

Contributions from participants

Belgium - Brussels


Impeel
Copenhagen
8+9/09/2005

Brussels Institute for the Management of the Environment

Indicator of Performance

-

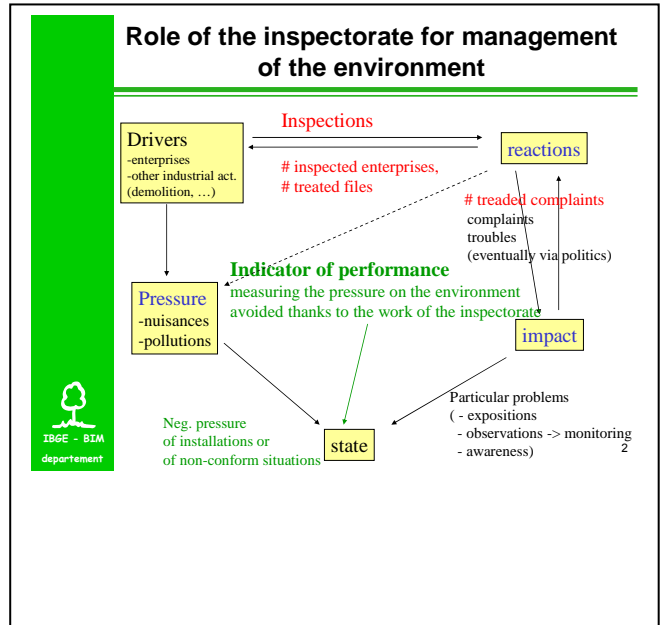
The Inspectorate



Jean-Pierre Janssens
Director
Head of division Inspection & Eco management

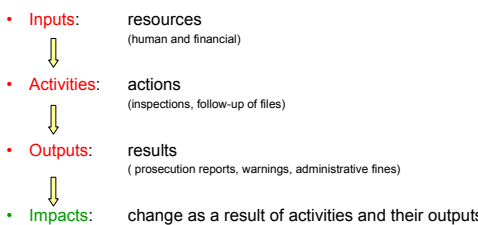
Guldelle 100 Tel 02/ 775 75 01
 1200 Brussels Fax 02/ 775 75 05
 BELGIUM www.ibgebim.be

IBGE - BIM
departement



Reactions: Activity of the inspectorate

- Inputs:** resources
(human and financial)
- Activities:** actions
(inspections, follow-up of files)
- Outputs:** results
(prosecution reports, warnings, administrative fines)
- Impacts:** change as a result of activities and their outputs



IBGE - BIM
departement

Indicator of performance: IMPACT

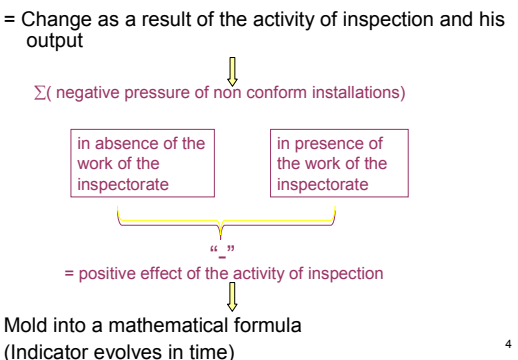
= Change as a result of the activity of inspection and his output

Σ (negative pressure of non conform installations)

in absence of the work of the inspectorate in presence of the work of the inspectorate

= positive effect of the activity of inspection

Mold into a mathematical formula
(Indicator evolves in time)



IBGE - BIM
departement

Neg. pressure of a non – conform situation

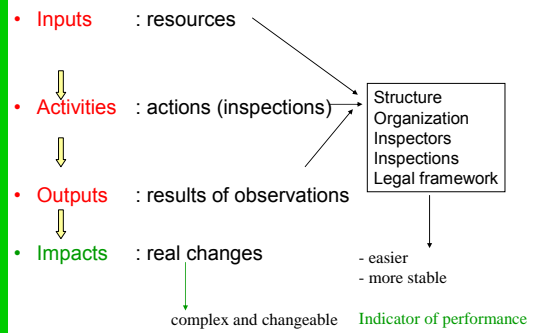
- f (gravity of the infraction)
 - Administrative -> O (regularization)
 - Technical
 - > importance of trespassing the norm
 - > multiples environmental concerned domains
- f (duration)
 - > stop the trespassing (not only to notice but to stop)
 - > need a certain time to achieve conformity (condoning) (opening -> closing of files)

⇒ complex exercise
⇒ need for a more easy set of performance indicators



5

Parameters that influence the quality



6

Parameters that influence the quality: Work conditions

- Resources:
 - Human: sufficient and qualified inspectors (min criteria ?)
 - Financial: budget needed for :
 - » Sampling + analysis
 - » On site measurements
 - » To realize external studies (expertise)
- Existing environmental legislation / permitting system
 - > has to be enforceable
 - » Clear and feasible technical requirements
 - » Need for administrative enforcement tools
 - » Need for criminal law enforcement tools

Inspection tools



7

Parameters that influence the quality: Strategy and working methods

- Definition inspection philosophy
 - Compliance checking
 - Compliance promoting
- Inspection strategy
 - Integrated inspections <-> single inspections
 - With on site visit
 - > drive by inspection
 - > in depth inspection
 - Without on site visit
 - > self monitoring data
 - > via external experts

minimum criteria ?



8

Parameters that influence the quality: Strategy and working methods

- Problem analysis and priority setting
 - Well developed and regular updated DB of all potentially polluting installations / delivered permits (conditions)
 - Effective use of the available resources
 - Reactive <-> preventive inspection
 - Frequency related <-> performance related
- Well defined targets (minimum standards?)
- 5 yrs inspection plan
 - 1yr inspection plan



9

Parameters that influence the quality

- Protocols and working instructions --->standardizing between different inspectors
 - Administrative protocols (follow up) ex.report content on site visit
 - Technical protocols (check list on site inspector methodology)
 - Judicial protocols – sanctioning strategy (condoning)

need for an inspectors vademecum
- Need for on the job training.
 - > minimum number of hours of training
 - internal and external training?
- Evaluation:
 - well developed DB for the administrative follow up of the inspectors
 - individual -->file
 - collective -->statistics level inspection body
 - need for a quality assurance
 - » annual reporting
 - » regular external audit (?)
- Coordination between different competent inspection bodies if it is the case.



10

Denmark

Workshop on Quality Parameters for Environmental Inspectorates, Copenhagen 8 - 9 september 2005 - by Gudmund Nielsen, Danish Environmental Protection Agency (DEPA)

Background

The environmental licensing and inspection system in Denmark is highly decentralised. 16 regional governments (counties) and 271 local governments (municipalities) have by law the total authority in this field. After 2007 the situation will change: The 271 municipalities will fuse to about 100 new and bigger municipalities while the mid-level administration, the counties, will disappear. The environmental responsibility for installations that are presently licensed and inspected by the counties, will be transferred to the new municipalities, except for about 250 of the most environmentally complicated installations that will be under the authority of the Danish State (Danish EPA) and its seven new national inspectorates in the country.

It is a challenge of the new municipalities and national inspectorates to ensure that the quality of the inspectorate work fulfils politicians' and stakeholders' expectations according to the intentions in the environmental legislation. Therefore it has been decided - in co-operation with the interested public and professional parties – to define a series of quality parameters for environmental inspectorates suitable for benchmarking of the inspectorates against each other. The idea behind this is to give the inspectorates the possibility to learn from each other by comparing their systems and efforts etc.

Existing quality measurement system

Since 1987 the municipalities and counties have had to report annually before 1 April to Danish EPA about quantitative data, including resources, licensing, inspection, enforcement etc. for the previous year. On basis of this Danish EPA prepares a summarised national report to the government and the public. From the first of January 2005 the authorities have to report also on numbers of so called "total inspections". A total inspection is defined as "a carried through control of all relevant environmental conditions on a certain installation". The "total inspection" includes the quality of the inspection, meaning that the responsible environmental inspectorate (municipal or county) guarantees that the quality of the inspection don is satisfying.

At the same time - per 1 January 2005 - national minimum frequencies have been decided for "total inspections". E.g., 100 % of the licensed installations within a municipality shall have a "total inspection" within the three previous years. The Danish EPA will check that this is fulfilled and will interfere in cases of failing. The new municipalities - after 2007 - and the new State Inspectorates will similarly have to follow the national minimum frequencies for "total inspections".

Ideas for quality parameters for benchmarking of environmental inspectorates

In 2004 Danish EPA has made a pilot project trying to define quality parameters suitable for benchmarking environmental inspectorates against each other. On basis of the project the project group recommended the following parameters:

- The distribution of low -, medium - and highly environmental friendly installations, categorised according to a nation wide categorisation scheme.

- Resources used per "total inspection" for similar installations, but distributed on the 3 mentioned categorisation groups.
- Number of announced and unannounced site visits, distributed on the 3 categorisation groups.
- Authority enforcement actions of different kinds per "total inspection" and distributed on the 3 categorisation groups.
- Time used for preparing a permit from the moment that the necessary information from the applicant is available.
- Resources used for preparing a permit.
- Resources available for training of inspectors.
- Quality assurance of inspectorates - e.g. ISO 9001.
- Stakeholders' satisfaction.

Idea for a benchmarking system

The pilot project group recommended that Danish EPA should develop a web-based system for comparing data from the Danish inspectorates based on the mentioned parameters - and possible more. The single inspectorate should be able to select from the system both which inspectorates and which parameters it wants to be compared to. Further the system should be open to everybody, including the State, the business life and the public.

England and Wales

IMPEL Workshop on Benchmarking on Quality Parameters for Environmental Inspectorates, Copenhagen, 8 & 9 September 2005

Environment Agency (England and Wales)

The Environment Agency believes that traditional approaches to regulation have achieved a great deal but that the nature of regulation has to change to keep pace with changes in the economy and society. The Agency is further developing its approach to regulation to improve and protect the environment. This approach is focused on the outcomes it achieves and is based on risks. Society demands high environmental standards and expects companies and individuals to behave responsibly. The business world expects greater regulatory efficiency, while minimising bureaucracy in order to keep compliance costs to a minimum. The Environment Agency considers that these potentially conflicting demands can be met with a regulatory regime that helps business and individuals to improve and rewards good performers but is tough on those who do not meet acceptable standards.

The Environment Agency is registered to ISO9001, 14001 and EMAS. This gives an assurance on both the quality of the management systems as a whole in the organisation and the quality of the environmental management systems as well. An important part of our quality performance is ensured by the maintenance of these registrations.

The Environment Agency is a transparent organisation which reports openly on its performance. Every year we produce a publication called "Spotlight on business" which gives an overview of performance in industrial sectors (in terms of operator performance, serious pollution incidents and waste production and management) and then looks at these in turn for individual sectors. Operator performance is one of the attributes allocated under our Operator Pollution and Risk Appraisal (OPRA) scheme. The other four are compliance rating, complexity, emissions and location. We find this a very useful tool for assessing the relative changes in the environmental performance of sites and businesses over a period of time, and for highlighting where we should focus our activities. In Spotlight we highlight fines and penalties imposed on operators.

Of course, there is a problem with the unregulated community – illegal operators who operate outside the law, mainly in the field of waste. We discover these operators through our own activities and also because they are reported to us by members of the public. They do not of course form part of our planned inspections yet their relative impact on the environment is often substantial.

In terms of illustrating our impact on the environment, we have produced a document called "State of the environment 2005." This is an overview of the state of the environment now and how it has changed 2000. We have split the report into subject areas, showing what is getting better and what is getting worse, and outlined what we in the Environment Agency plan to do about them, as well as what others in society as a whole need to do.

Finally, the Environment Agency is audited from time to time by the National Audit Office which is an independent body that reports directly to Parliament.

Recommendations

Data such as numbers of inspections are a quantitative (not qualitative) measure that give little information about the impact an organisation is having. We are looking at "compliance assessment" whereby a weighting is given to various activities related to regulation. For example, one unit might be allocated to Inspection, Sampling/Monitoring and Data Review, six units to Procedural review and twenty five to an audit.

We think it would be hard to compare different environmental regulators across Europe and the findings may not be particularly useful. It might be more beneficial to compare the regulation of different industry sectors across Europe, for example the Chemicals sector.

The Environment Agency makes charges to operators to meet the costs of permitting and regulation. One of the consequences of this is that operators have a direct interest in ensuring that the Environment Agency is operating efficiently and effectively which they do both directly through the Agency and indirectly by lobbying Government.

It is very helpful to have accreditation under ISO... and EMAS which in themselves give a guarantee of quality of management and environmental awareness. It is also helpful to have audits of an organisation by an independent body from time to time.

Estonia

Quality Parameters for Environmental Inspection in Estonia /Remarks/

Output indicators

During last years efforts have been made to make the enforcement activities' data more conveniently collectable and analysable via e-solutions:

Inspections: Electronical reporting system of inspections has been introduced in the Inspectorate in 2005, forming a database including substantial data of all inspections. It should provide a possibility to assess the inspection activities from various aspects.

Non-compliance indicators: An electronical database of registered infringements has been used since 2002, to measure different non-compliance indicators from various aspects.

Output indicators have been mainly used to compare the contribution of substructures/inspectors and to estimate the trends. Compared with the input indicators they have served as a management tool for the leading staff. But they have been realised to be worthless as quality parameters of inspection, unless compared with outcomes.

Outcomes

No indicators have been used for measuring results of enforcement activities (outcomes).

Problems concerning setting quality parameters

- setting the link between outputs and outcomes
- separating the influence of inspection from the influence of other tools (permitting, judicial, public etc)
- expensiveness of designing and implementing quality indicators

Himot Maran

Finland

Environmental Counsellor Markku Hietamäki

29.8.2005

Quality parameters for environmental inspectorates

Background

Finnish Environment Protection Act (EPA) covers all IPPC installations (685) and a lot of small installations (about 28000). Permitting offices (3) give permit to largest installations (1000), regional centre (REC) (13) to medium size (10000) and municipalities to small installations. REC monitor the compliance of large and medium size installations (11 000) and municipalities the rest (about 17 000).

In large and medium size installations a lot of the environment requirements are given as limit values which can be measured. The permit contain a emission monitoring and reporting requirements. The authorities control after the permit is given that the operator has the monitoring and reporting system required in the permit. These procedures should guarantee that in general authorities can rely on the reports produced but the operator. However the monitoring and reporting system is controlled periodically (see later on inspection class) during site inspections. Operators report regular results of measurements to authorities according to monitoring and reporting programme. However if limit values are exceeded or if disturbances (which may have effects to human health of environment) occurs then the operator must report at once. In small installation where environment requirements are not given as limit values, only way to control the high level of environment protection is to check the relevant procedures during periodical site inspections.

Framework for the quality control of the compliance monitoring

The Ministry of the Environment has approved guidance document for compliance monitoring. The guide (Finnish and Swedish) shall be printed during September and it is based on EU's Minimum Inspection Criteria recommendation added with special national features like procedures how inspectorates can influence on the emission monitoring and reporting programme during permitting and how results of compliance monitoring will be automatically publish via internet.

VAHTI compliance monitoring system is a data system mainly for the state environment administration). The system contains all actions (reports from operator, complains from the public, complains only starting this year) that trigger some kind of inspection actions. Data system has a lot of reports which give information how a REC run the compliance monitoring.

There is also a more detailed part where a person responsible of compliance monitoring of a REC can see the performance data inspector by inspector. Linked to system is a web-service where a REC tells the inspections class of the installations, who is a contact person of an installation, resources and objectives of REC (starting September this year). At the end of the year the head of REC also makes and publishes an assessment (the first time at the end of year 2006) how REC has managed to carry out the compliance monitoring and what is there a need to add

resources for the next year. Application also moves automatically every night some statistical compliance monitoring data to Internet where public can see it.

In yearly business negotiations the Ministry of the Environment gives its feedback to REC. The feedback is based on the reports from the VAHTI Compliance Monitoring System. It is under discussion what would be the right parameters to measure the level compliance monitoring of a REC. VAHTI system makes it possible to get reports like

- compliance monitoring objectives and inspection classes (of the REC)
- how much resources/installation the REC has allocated to compliance monitoring
- number of routine inspections per installations (bigger the better)
- has REC managed to keep in appropriate times in different inspections actions ("response" times are set in VAHTI system)
- number of "evidence based" inspections (exceeding of limit values, accidents) per installations (fearer the better?)

There are also "wilder" proposal how performance could be assessed like

- number of disturbance reports as function of the level of the limit values: this is however problematic; if limit values are soft there should be as low number of reports as possible but if the limit values are stringent the low number of reports may not good at all!

The test parameter shall be decided in the second week of October this year and used in the assessment this autumn.

Compliance monitoring

	Installation	Large	Medium	Small
Inspectors activities				
0. guarantee permit conditions		xxx	x	x
1. (prepare/)approve monitoring programme		xxx	xx/x	-
2. audit monitoring system during site inspection		xxx	x	-
3. review reports -approve/more info/site inspection		xxx	x	x
4. review complaints -more info/site inspections		xxx	xxx	xxx
5. make regular inspections		x(x)	xxx	xxx

xxx = top priority xx = important x = less important - = ?

Germany

Quality Parameters for Environmental Inspectorates

Introduction:

The quality of the work of an environmental inspectorate is shown in the grade of fulfilling its assigned job. This means best output under the given conditions, whereby the conditions must have been a minimum standard in resources.

Environmental inspectorates have following tasks:

- a) Prepare fast plus technical and legal permits
- b) Sufficient surveillance of the companies

Outgoing from the tasks of the environmental inspectorates can be drained, which conditions are necessary for a good inspectorate work and how the quality actually can be ensured. The conditions (input) and the permits plus surveillance of compliance of environmental laws (output) are the base of the searched quality parameters. Many parameters are not measurable, but are indicators of quality of an inspectorate and they can be qualitatively estimated, whether they are existing or not.

Parameters (*cursive = measurable*):

Input:

Sufficient qualified and motivated inspectors: *Education level and variety of inspectors educations; Salary of the inspectors; Fluctuation of the inspectors; Resources for further training; Results of questioning the inspectors; Rate of Number of inspectors to number of companies (for different levels of complexity); Baden-Württemberg (Ba-Wü): e.g. Questioning of inspectors; Different complexity levels*

Sufficient equipment: *Quality and quantity of the office equipment; Quality and quantity of the technical equipment (like measurement devices); Financial resources per inspector*

Independence of the inspectors: Kind of employment contracts

Optimized administration structure and optimized organization in the inspectorate:

Results of internal and external reviews of the organization and workflow (e.g. ISO standards); *Number of experts for one complex company; Number of contact persons for a company; Existence of a supporting competence centre; Ba-Wü: e.g. External reviews by consultants and EMAS; New organization of the administration*

Supervision: *Number of working programmes and results; Methods of supervising the instructors by superiors and prefixed administration levels*

Output:

Fast plus technical and legal decisions: *Time to grant a permit after all necessary application documents are submitted; Number of spot tests of permits by prefixed administrations; Number of successful oppositions to decisions; Ba-Wü: e.g.*

Instructions for fast permit procedures

Sufficing surveillance: *Number and time extent of inspections (by one or several inspectors) for a definite type of installation; Number of founded failings; Number of writings on failings; Number of orders; Number of accidents; Number of no compliance of emission limits; Real situation of the environment as product of the work; Ba-Wü: e.g. Work results of the environmental inspectorates are published in form of reports and statistics in a yearly booklet; Press releases; Extensive environment data*

Public Information: *Rate of permits with and without participation of public; Number of insights into official files (citizens or attorneys at law); Quality and quantity of public relation (print media, websites etc.); Ba-Wü: e.g. Yearly booklet; Websites; Press releases*

Companies and citizens contentment: *Number of oppositions to inspectorate decisions; Number of court procedures; Number of complaints against inspectors; Results of questionings of companies (maybe anonymous); Results of questioning citizens; Ba-Wü: e.g. Questioning companies; Yearly booklet*

Ireland

*Mr. Leo Sweeney
Senior Inspector
Environmental Protection Agency
Office Of Environmental Enforcement
Richview, Clonskeagh, Dublin 14*

Existing Performance Indicators used by OEE (Quality Measurement System)

- Local Authority Audits & Inspections – Planned/Completed
- IPPC & Waste Audits & Inspections – Planned/Completed
- Monitoring Visits Completed – Water/Air/Nuisance/Other
- Number of Notification of Non-Compliance issued
- Number of Statutory Notices issued
- Number of Prosecutions – Taken/Successful
- Number of Complaints – Odour/Noise/Water/Air/Procedural/Miscellaneous
- Meetings with Stakeholders
- Time taken to respond to correspondence/assess reports

Proposed Quality Parameters for Discussion

- Challenges in establishing performance indicators due to type and size of facilities in addition to the type and number of inspection/audit undertaken by individual regulators. Necessary to compare like with like
 - Environmental Performance Indicators – Energy use, Water usage, Waste production, Licence compliance, Materials consumption, Greenhouse gas emissions, Environmental expenditure, Reportable environmental incidents, ELV exceedances
 - Use of environmental performance data from individual licensees in the preparation of generic performance indicators
-

Latvia

Report of Latvia State Environmental Service “Quality parameters for Environmental Inspectorates”

1. Existing or planned quality measurement systems in your home environmental inspectorates (national and/or regional and/or local authority or authorities)

At first I should give a short introduction of environmental inspectorate system in Latvia. Till the beginning of 2005, eight independent Regional Environmental Board (REB) inspected districts of Latvia. But Environmental State Inspectorate (ESI) was supervision institution, which tasks were methodological leading and inspector work supervision. In the end of 2004 REB and ESI were reorganized in one state institution – State Environmental Service (SES).

Special instruction “” The supervision order of Environmental State Inspectors Actions” was prepared for supervision procedure by ESI in March of 2004. The main thesis:

1. Supervisor is inspector, which has high professional skills and competence.
2. Supervision procedure includes:
 - Control of working planning in individual (every inspector), division or department or regional (REB) level;
 - Estimation of **resulting indicator** of every inspector or REB (**quantitative parameters**, such as number of inspections, orders for installations to remove non-compliances, administrative proceeding, delivery of a judgment, complaints etc. in a month);
 - Control of inspector competence in time of inspection visit (inspector and supervisor common visit of installation, preparation of inspection report);
 - Control of issued administrative acts quality (overall inspection reports, legal administrative protocols, well-founded judgement, proportional penalties to violation);
 - Observation of methodical guidelines in inspector actions.
3. Supervisor after the supervision procedure prepared supervision report and send to director of REB, which task is eliminate of the mistakes, which were established in supervision time.

Ideas of quality parameters for discussion during the workshop.

The other important quality measurement is estimation of every environmental inspectorate according European Standard EN 45004 “General criteria for the operation of various types of bodies performing inspection”. The following this standard the next criteria must be estimated:

- Administrative requirements,
 - independence,
 - confidentiality,
 - organization and management,
 - Quality system,
 - personnel,
 - facilities and equipments,
 - inspection methods and procedures,
 - handling of inspection samples,
 - Inspection reports,
 - complaints and appeals,
 - cooperation,
 - Quality Manual.
-

The Netherlands

Wout Klein
The Netherlands

* All more than 500 environmental inspectorates (of local communities, waterboards, provinces and state agencies) in the Netherlands have adopted the quality criteria for a professional enforcement process as described in the annex. These 19 criteria actually contain more than 50 “minimum elements” and the last several years the inspectorates have been compared by the number of elements they fulfill.

* We in the Netherlands are fully aware that these criteria only regard the management process of the inspectorates. They don't say anything about the political choices and they set no standard for output or outcome. An inspectorate that carries out 100 inspections of small businesses can be equally professional (= have the same quality) as an inspectorate that carries out 3 in depth inspections of nuclear power plants, as long as both act according to their political priorities and their appointed processes and procedures etcetera. In fact these criteria have much in common with all schemes of Total Quality Management or thelikes. They together form of two connected Plan-Do-Check-Act circles, one on a policy-level and one on the operational level.

* One of the elements of quality of any inspectorate is the fact that it monitors its own output and outcome, in order to know more about its own effectiveness and efficiency. This does not make automatically output and outcome the key elements to compare the quality of inspectorates. Not the outcome itself, but the fact that it is monitored and that it is an instrument of planning and control is a proof of a professional organisation.

* Rather than a discussion on any specific quality parameter I would propose a discussion on the character of quality parameters. This can be done by asking – as an example - the question: “What is a better quality parameter to compare organisations?”:

- a. The amount of prevented pollution (as a result of inspections).
- b. The amount of prevented pollution in relation to the planned prevented pollution
- c. The fact that prevented pollution is planned and monitored
- d. The number of fields of inspection for which prevented pollution is planned and monitored
- e. The same in relation to the total number of fields of inspection of the organisation
- f. The amount of time and money to develop ways of defining and/or monitoring the amount of prevented pollution
- g. The same in relation to the total time and money for R&D
- h. The same in relation to the total time and money of the organisation

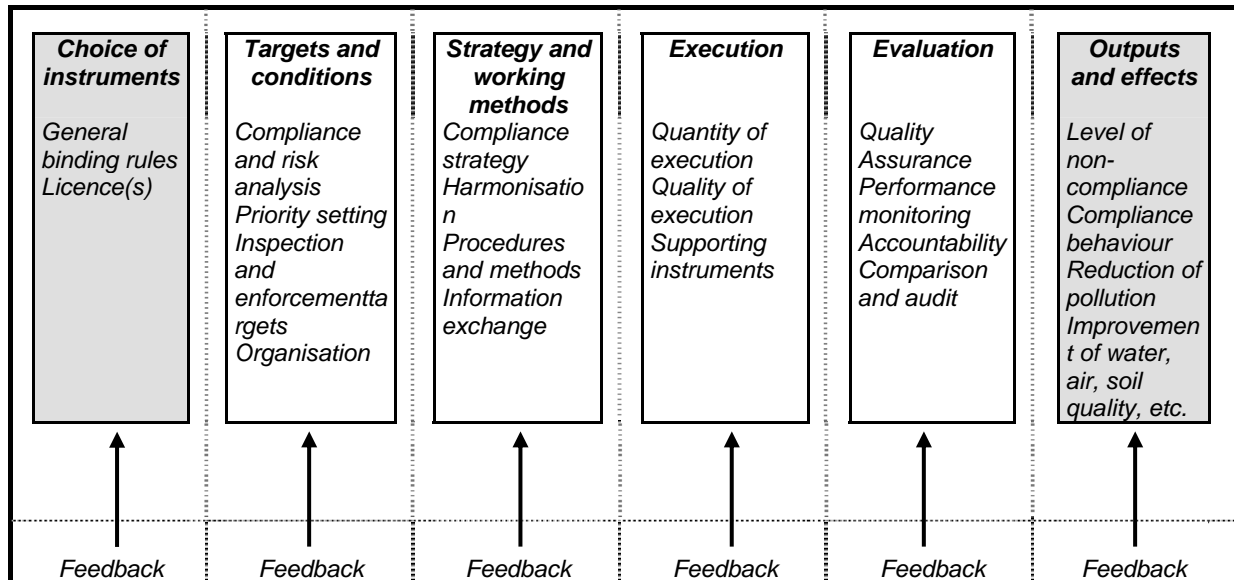
MINIMUM CRITERIA FOR A PROFESSIONAL ENVIRONMENTAL ENFORCEMENT PROCESS IN THE NETHERLANDS

Dutch environmental inspectorates, enforcing environmental regulations for local, provincial and national governments, have agreed to fulfill the following set of minimum quality standards. Quality standards (also referred to as ‘minimum criteria’) are recognised to be crucial not only in improving inspection results, but also to support transparency, effectiveness and efficiency of environmental inspectorates as public institutions on the national, regional or local level. Furthermore, a proper use of the minimum quality standards may contribute to the improvement of environmental policy-making, as well as to legislative and licensing processes.

Well-formulated quality standards acknowledge that the process of inspection and enforcement 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 choices and procedures, where accountability for reaching concrete targets is a key requirement.

The following figure and methodology introduce the scope and visualises the process of inspection and enforcement throughout several phases. It is important to mention that environmental licensing (permitting) only delivers inputs to but it is not a part of this process as such.

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



The phases shown in the middle of inspectorates. A brief description of these phases follows: Figure 1 and, more importantly, their elements serve to establish quality standards for environmental

- **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 analysis 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 of 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. At 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.
- **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 on non-compliance, which must be strict and unambiguous (in case of non-compliance, there can be no discussion about the content of the legal norms).
- **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 program 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.
- **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 what effect 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 on 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.

Overview of quality standards for environmental inspectorates' activity

In accordance to the sequence and the boundaries of the inspection and enforcement process, **nineteen quality standards**, alongside with methodological guidelines on how to apply them in practice, are described below. 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) has a dichotomy towards **minimum elements and optional elements**. In case the inspectorate fulfils all minimum elements, the quality standard is met. In the Table 1, 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) could be considered:..”.*

To accept that a specific element is met by an inspectorate, three general preconditions will have to be fulfilled. These are legitimacy, availability and topicality.

The inspectorate’s statement on the minimum element must be legitimate: The statement is legitimate for the inspectorate and its staff members, if the responsible politicians (policy plans, budgets) or the responsible management have determined it or approved it.

The inspectorate’s statement on the minimum element must be available: The statement is available, if it was documented in a traceable way in a separate document/file or as part of a more extensive document/file or as a system of elements originating from several documents/files.

The inspectorate’s statement on the minimum element must be topical: It is difficult to define unambiguously when the statement is topical. This depends, amongst other things, on the tasks and the organisational structure of the inspectorate. Per element however the inspectorate will have to show what it considers ‘topical’ and whether it fulfils this.

The quality standards are applicable whatever accents an inspectorate puts in its activities: inspection of industrial facilities, controlling hazardous substances or waste flows, dealing with non-point sources of pollution or any other kind of situations that are in breach of environmental requirements. However, each field of activity might deserve separate assessment to determine whether quality standards are met in this particular field. If properly applied, following all the steps in the inspection and enforcement process, the quality standards will lead to a better enforcement, to a compliance and to positive effects on the environment, like e.g. a better water quality.

Table 2. Overview of quality standards.

Quality Standard	Minimum and Optional Elements
GROUP 1. TARGETS AND CONDITIONS	
<p>1.1 Problem analysis:</p> <p>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, in order to steer its inspection and enforcement efforts.</p>	<p><u>The analysis at least includes:</u></p> <ul style="list-style-type: none"> ➤ all installation related and non-installation related tasks and objects; ➤ all environmental problems within the task of the inspectorate; ➤ the possible effects of potential and actual offences; ➤ the frequency of these offences. <p><u>Furthermore (amongst other things) could be considered:</u></p> <ul style="list-style-type: none"> ➤ a risk assets map.
<p>1.2 Priority setting and measurable targets:</p> <p>The inspectorate acts on the basis of priority setting of the inspection and enforcement task, elaborated in written inspection and enforcement targets per policy area and established in concrete, measurable inspection and enforcement targets.</p>	<p><u>The priorities and targets at least include:</u></p> <ul style="list-style-type: none"> ➤ priorities, taking into account the problem analysis (standard 1.1) and the evaluations (standard 4.3) ➤ a description of the inspection and enforcement target per policy area ➤ measurable indicators for all targets, including agreements on monitoring of those indicators <p><u>Furthermore (amongst other things) could be considered:</u></p> <ul style="list-style-type: none"> ➤ to make transparent the used methodology for prioritisation ➤ to formulate targets (and indicators), where possible, in terms of compliance behaviour and environmental progress
<p>1.3 Guaranteeing human and financial resources:</p> <p>The inspectorate takes care of adjustment between politically agreed inspection and enforcement targets and the employment of staff and use of financial means and guarantees this in the organisation.</p>	<p><u>Guaranteeing human and financial resources at least includes:</u></p> <ul style="list-style-type: none"> ➤ a transparent system connecting politically approved inspection and enforcement priorities with inspection and enforcement targets (standard 1.2) as well as with the deployment of personnel and other resources (standard 3.2) ➤ fixing in the budget of human and financial resources to be used for the execution of the inspection and enforcement task

Quality Standard	Minimum and Optional Elements
<p>1.4 Organisational conditions:</p> <p>The inspectorate acts on the basis of an organisational set up and regulations that are necessary to achieve the inspection and enforcement targets that were set.</p>	<p><u>The organisational arrangements at least include:</u></p> <ul style="list-style-type: none"> ➤ a separation of licensing activities on the one hand and inspection and enforcement activities on the other at staff level ➤ a circulation system for inspectors for companies with which there is a fixed inspection and/or enforcement relation ➤ document the powers, tasks and responsibilities ➤ procedures for reachability and availability outside office hours ➤ document the management of inspectors with police-powers (if applicable) ➤ arrangements for putting out to contract inspection tasks (if applicable) <p><u>Furthermore (amongst other things) could be considered:</u></p> <ul style="list-style-type: none"> ➤ a separation of licensing activities and inspection and enforcement activities at organisation level
GROUP 2. STRATEGY AND WORKING METHODS	
<p>2.1 Compliance strategy:</p> <p>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.</p>	<p><u>The compliance strategy at least includes:</u></p> <ul style="list-style-type: none"> ➤ an inspection and enforcement strategy, consisting of: <ul style="list-style-type: none"> ○ an inspection strategy as mentioned in standard 2.2 ○ a sanction strategy as mentioned in standard 2.3 ○ a condoning strategy as mentioned in standard 2.4 ➤ a strategy for the use of other instruments, other than inspection and enforcement
<p>2.2 Inspection strategy:</p> <p>The inspectorate acts on the basis of an inspection strategy, containing which inspection modalities can be distinguished and which the basic work processes are at each of them.</p>	<p><u>The inspection strategy at least includes:</u></p> <ul style="list-style-type: none"> ➤ routine visits, including their frequency and incidental visits ➤ the inspection of administrations and documents and the inspection on reaching environmental quality standards ➤ investigation and verification of self monitoring arrangements, that are carried out by or on behalf of the installation itself ➤ supply of information and written report <p><u>Furthermore (amongst other things) could be considered:</u></p> <ul style="list-style-type: none"> ➤ carrying out in-depth investigation in the form of audits or quick-scans
<p>2.3 Sanction strategy:</p> <p>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.</p>	<p><u>The sanction strategy at least includes:</u></p> <ul style="list-style-type: none"> ➤ a coherent administrative – criminal approach towards offenders of environmental legislation ➤ an appropriate reaction to the non-compliance found ➤ a stringent reaction in case of continued non-compliance ➤ an arrangement for reactions to non-compliance by the own organisation and other authorities ➤ transparency in setting terms to do away with (standard) offences and to the heaviness of the sanctions to be imposed for these offences

Quality Standard	Minimum and Optional Elements
<p>2.4 Condoning strategy:</p> <p>The inspectorate acts on the basis of a condoning strategy, containing in which situation and under which conditions sanctions against violators can temporary be dropped.</p>	<p><u>The condoning strategy at least includes:</u></p> <ul style="list-style-type: none"> ➤ an explicit adoption of the terminology, contents and procedure of the condoning policy drawn up by the Dutch national government
<p>2.5 Internal and external tuning:</p> <p>In the preparation and execution of its inspection and enforcement tasks the inspectorate takes care of internal and external tuning.</p>	<p><u>The internal tuning at least includes:</u></p> <ul style="list-style-type: none"> ➤ tuning with the license writer(s) ➤ tuning with other relevant departments and persons inside the organisation <p><u>The external tuning at least includes:</u></p> <ul style="list-style-type: none"> ➤ arrangements on co-operation with other relevant organisations involved in environmental inspection and enforcement ➤ arrangements about situations where more than one organisation is competent to inspect or enforce at the same time ➤ arrangements about cases where more than one organisation are competent to inspect or enforce consecutively (chain control) <p><u>Furthermore (amongst other things) could be considered:</u></p> <ul style="list-style-type: none"> ➤ broadening the programming of the own inspection and enforcement task towards co-operation
<p>2.6 Protocols and working instructions:</p> <p>The inspectorate acts on the basis of protocols for internal and external tuning on the preparation and execution of its tasks.</p>	<p><u>The protocols at least include:</u></p> <ul style="list-style-type: none"> ➤ a working-out in procedures and/or work instructions of all obliged elements mentioned in standards 2.1 – 2.5 <p><u>Furthermore (amongst other things) could be considered:</u></p> <ul style="list-style-type: none"> ➤ a working-out of the general compliance strategy in specific inspection and enforcement handbooks, wherever meaningful ➤ a working-out of the general inspection strategy in specific inspection plans
<p>2.7 Protocols for communication, information management, information control and information exchange:</p> <p>The inspectorate acts on the basis of protocols for communication, information management, information control and information exchange on inspection results, announced or imposed sanctions and condoning decisions.</p>	<p><u>The protocols at least include:</u></p> <ul style="list-style-type: none"> ➤ the communication on inspection results, sanctions and condoning decisions ➤ the information management of 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

Quality Standard	Minimum and Optional Elements
GROUP 3. IMPLEMENTATION AND OPERATION	
<p>3.1 Inspection and enforcement programs:</p> <p>The inspectorate acts on the basis of an inspection and enforcement program, to which the internal organisation is or has been adjusted.</p>	<p><u>Inspection and enforcement programs at least include:</u></p> <ul style="list-style-type: none"> ➤ a clear coherence/connection with the priorities set under standard 1.2 and with the targets ➤ a description of the actual inspection and enforcement activities and the capacity needed for them ➤ the elaboration of the inspection and enforcement program in an actual work planning for all parts of the organisation that are involved <p><u>Furthermore (amongst other things) could be considered:</u></p> <ul style="list-style-type: none"> ➤ the elaboration of the inspection and enforcement program in an actual work planning at the level of individual staff members
<p>3.2 Size of inspection and enforcement capacity:</p> <p>The inspectorate has sufficient human resources, and/or financial resources to hire staff capacity for the execution of inspection and enforcement tasks.</p>	<p><u>Sufficient inspection and enforcement capacity at least includes:</u></p> <ul style="list-style-type: none"> ➤ insight in the capacity that is actually available ➤ sufficient capacity to carry out the inspection and enforcement program mentioned under standard 3.1
<p>3.3 Quality of inspection and enforcement capacity:</p> <p>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.</p>	<p><u>Sufficient expertise at least includes:</u></p> <ul style="list-style-type: none"> ➤ insight in 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 <p><u>Furthermore (amongst other things) could be considered:</u></p> <ul style="list-style-type: none"> ➤ determination and commitment to the necessary expertise in job descriptions and/or in a staff formation plan ➤ periodical checks of the desired level of expertise
<p>3.4 Facilities supporting execution:</p> <p>The inspectorate has sufficient quantitative and qualitative resources and provisions that make it possible to execute its tasks in a legal, administrative, information technological and environmental technological way.</p>	<p><u>Facilities supporting execution at least include:</u></p> <ul style="list-style-type: none"> ➤ an automated system for planning, programming and progress monitoring of the inspection and enforcement task ➤ an automated system for the registration and monitoring of both installation related and non installation related inspection and enforcement tasks ➤ those provisions that are needed for the execution of the inspection and enforcement task, from a point of view of information, environment, legal provisions and administration ➤ a good level of maintenance and calibration of the equipment and instruments being used

Quality Standard	Minimum and Optional Elements
GROUP 4. EVALUATION	
<p>4.1 Quality assurance:</p> <p>The inspectorate acts on the basis of a system of internal assurance (description, assessment and improvement) of the way in which inspectors carry out their work.</p>	<p>The system of quality assurance at least includes:</p> <ul style="list-style-type: none"> ➤ a process description of the way in which inspectors have to carry out their work ➤ method to check the assurance of the execution of the process descriptions ➤ improvement mechanisms to facilitate the adjustment of process descriptions <p>Furthermore (amongst other things) could be considered:</p> <ul style="list-style-type: none"> ➤ Designate a quality assurance co-ordinator / apply official quality care system ➤ External check of the process descriptions ➤ certification of the process descriptions
<p>4.2 Performance monitoring:</p> <p>The inspectorate acts on the basis of systematic monitoring of the inspection and enforcement process and its results and effects.</p>	<p>Monitoring at least includes:</p> <ul style="list-style-type: none"> ➤ the own indicators belonging to targets and/or priorities ➤ the monitoring of the results of the inspection and enforcement activities in terms of numbers concerning: <ul style="list-style-type: none"> ○ executed inspections ○ detected offences ○ administrative actions (sanctions) ○ criminal actions (sanctions) <p>Furthermore (amongst other things) could be considered:</p> <ul style="list-style-type: none"> ➤ linking the monitoring to the quality assurance process
<p>4.3 Accountability of efforts, performance and results:</p> <p>The inspectorate has a system of internal and external accountability about the inspection and enforcement process and its results and effects.</p>	<p>The accountability at least includes:</p> <ul style="list-style-type: none"> ➤ a report on the own indicators concerning the targets and/or priorities formulated by the inspectorate itself ➤ 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 <p>Furthermore (amongst other things) could be considered:</p> <ul style="list-style-type: none"> ➤ a (special) version of the accountability report for the public
<p>4.4 Comparison and auditing:</p> <p>The inspectorate develops a system to externally compare, test and judge its efforts, its organisation and the results of its inspection and enforcement.</p>	<p>(Amongst other things) could be considered:</p> <ul style="list-style-type: none"> ➤ the inspectorate compares itself with colleague organisations ➤ benchmarking as a specific task for one of the staff members inside the inspectorate

Norway

IMPEL workshop on Quality Parameters for Environmental Inspectorates

1. Environmental inspection in Norway – a brief description

Environmental inspection (pollution control) in Norway is carried out by the Norwegian Pollution Control Authority (SFT) and the 18 County Governor's environmental offices (FMVA). SFT is responsible for planning, coordinating and reporting on all inspectorate activities to the Ministry of the Environment. Norway uses approximately 40 man-labour years (human resources, full-time equivalents) on compliance monitoring activities (24 at SFT and 16 at the County Governors offices). Approximately 50% of the available compliance monitoring resources in Norway is directed towards small enterprises with no discharge permits, 30% is used on enterprises with discharge permits and the rest is used on training/building qualifications and administration.

2. Inspection – Quality measurement system

○
Measuring the achievement of goals and targets:

- Quarterly reports on the use of resources and of accomplished enforcement activities are compiled and compared to targets in the detailed, national inspection plan.
- The pollution control authorities are evaluated regularly to see if they contribute as expected to achieving national, environmental goals.

Promotion of quality assurance/quality assurance system:

Our quality system contains several written procedures and standard documentation to promote/increase the quality of inspection activities. Procedures/documentation includes for instance the following:

- Directive for annual planning of the environmental inspection on national level.
- The frequency of site visits for enterprises according to risk classification
- Training of inspectors
- Planning, carrying out, reporting and following-up site visits.
- Routines for filing charges with police authorities.
- Concerted multi-agency enforcement actions

3. Permitting – Quality measurement system

SFT and FMVA issue licenses to industrial installations. The average time needed to issue licenses is our main measure of administrative quality.

4. Ideas of quality parameters for discussion during the workshop

We agree with many of the proposed quality parameters in the mandate. We would also like to forward a couple of proposals:

- Establishment of a simple, common risk classification system for the EEA intended for enterprises with discharge permits.
- Deviation from planned frequencies of inspection within different risk categories (i.e. high, medium, low) measured over a certain period of time.
- Average time used for each site visit (including planning, carrying out, reporting and following-up) for enterprises in different risk categories.

- Number of complaints per inspector filed against inspectors, calculated over a certain period of time.
- What percentage of the governmental inspectors are formally accredited environmental auditors.

It is important that the values of the “benchmarking parameters” are not seriously influenced by the countries size, geography, internal organization, industrial structure, etc.

Here is an idea for promoting more homogeneous inspection practice in EEA:

- Carry out regular “calibration” exercises where environmental inspectorates from EEA are invited to describe how they will handle and follow up different situations and findings on site visits in a relevant business sector. The exercise should be followed by a workshop where the inspectors who participated discuss the answers and try to reach a mutual understanding of the best way to handle the situations and findings that were put before them in the exercise.
-

Portugal

Contributions to the Conference on Quality Parameters for Environmental Inspectorates

The General Inspectorate for Environment, in Portugal, is a Central Department which depends directly on the Minister for Environment and Land Planning.

The General Inspectorate Service has an integrated approach to the different aspects of pollution (air, water, solid waste, safety and noise). It is responsible for ensuring compliance with national environmental laws and EU requirements, having no responsibility in the permitting process (air, water and soil discharges, IPPC license and SEVESO installations). The five Regional Authorities for Environment and Land Use Planning have the responsibility for issuing permits. The Institute for Environment is responsible for the IPPC license and for the analysis of SEVESO II documentation.

The activity of the Inspection is regulated by an annual programme and an activity report.

The annual programme is a document, whose purpose and goals are defined for each year, based on ministerial policy, taking into account the available resources. At the moment there are 31 inspectors at the national level; 25 of them have a degree in engineering (chemical, environmental, and agricultural) and 6 have a degree in law. The former impose fines after issuing an administrative process. Moreover, there are 8 auxiliary inspectors, which have a technical course in environment, that make simple inspections, take measurements (noise and VOCs) and collect samples of water, wastewater and waste.

The inputs for the outline of this plan are: number of human resources and amount of financial resources, planned inspections, specific inspections campaigns, e.g. SEVESO inspections, VOCs inspections, waste water treatment plants inspections (urban and industrial), industrial parks (installations and infrastructures) inspections of complex industrial sectors (pulp, cement, power plants,...) and reactive inspections based on complaints, accidents and pollution incidents in industries.

The main outputs included in the annual activity report of the Inspectorate Service are:

- Number of inspections conducted (simple, complex and very complex);
- Number of samples collected;
- Number of prohibition notices issued;
- Number of warrants issued (mandatory notifications in dangerous situations);
- Number of infringements in each field: air emissions, water, waste water, solid

waste, noise, safety, etc;

- Number of complaints successfully dealt with, relative to total complaints sent to the Inspectorate Service;
- Total amount of fines received.

The Inspectorate Service in the last years, has also outcomes that are difficult to measure such as:

- More efficient coordination of the administrative processes cutting the time between inspection, inspection reports and prohibition notice, contravention processes and the application of fines;
- Setting up mechanisms of coordination with other central and regional environmental authorities in order to achieve know how sharing;
- Participation in task forces to implement projects to prevent environmental risks and so implement a better environmental quality (water quality basins, air quality in an industrial area,);
- Specific training courses to improve inspection work such as participation of Portuguese inspectors in SEVESO II inspections in other countries;
- Contribution to the sensibilization of judges and public prosecutors to environmental problems resulting less absolved industries in courts, increase the amount of fines applied, etc;
- Operators threat of the inspection activity results in a more accomplishment of environmental legislation, better compliance of the deadlines stipulated by the warrants and warning notices issued and more fines paid voluntary without appeal to the court;
- Positive changes of operators' behavior since the beginning of inspection activity, resulting, in a better environmental management system for instance: better practices in segregation and deposition of dangerous and non dangerous wastes; implementation of internal and end of pipe measures in order to reduce the quantity of pollution discharged from industries and urban waste water; greater awareness in accomplishing environmental legislation.

The introduction of these outcomes have been resulting in a reduction of environmental impacts, but they are not well quantified to determine, in combination with the use of inputs and outputs indicators, the efficiency and effectiveness of the inspection and enforcement programs.

Romania

National Environmental Guard
Regional Commissariat Cluj

Evaluating the performance of the County Environmental Commissariats within the Regional Commissariat Cluj

In Romania, the National Environmental Authority for Inspection is operating independently from the Environmental Protection Agency, even though both of them are subordinated to the Ministry of Environment and Water Management.

The North West Regional Inspectorate, located in Cluj-Napoca, comprises six local county inspectorates. The inspection activity takes place in conformity with the national and regional environmental strategy and in accordance with the annual inspection plan.

Usually, the efficiency of the county inspectorates and of the regional inspectorate is monitored by means of quantitative indicators. Monthly reports are being elaborated, emphasizing the status of achievement of the inspection plan. In annex 1 we present an example of such a report.

There is also an annual evaluation process going on regarding the performance of the county inspectorates. The main indicators which are monitored are:

- The number of penalties/inspector
- The total amount of the penalties/inspector
- The number of inspections/inspector

In annex 2 is presented a table showing the main indicators which are evaluated.

Since recently, we evaluate the activity of the county inspectorates taking into consideration also the human and financial resources employed for developing the inspection activity (for example: the number of inspections/inspector/amount; see annex 3). Additionally, the environmental investments are being recorded in order to insure that the enterprises comply with the environmental regulations.

ANNEX 1: Ranking according to 3 indicators, for 2004

No	County	Rank according to no of penalties/inspector	Rank according to amount of penalties/inspector	Rank according to no of inspections/inspector
1	Cluj	1	1	4
2	Bihor	2	2	3
3	Bistrita	3	4	1
4	Maramures	4	3	5
5	Satu MAre	5	5	2
6	Salaj	6	6	6

ANNEX 2

Regional Commissariat CLUJ - 2005	No. of penalties for individuals	No. of penalties for companies	No of sanctions					TOTAL amount of penalties [RON]				No. of summons	No. of criminal notifications	No. of criminal investigations
			Total col 5,6,7,8	Warnings	No. of ceased of activity	No. of proposals for env. permit cancel	No of penalties	Applied	Paid	25 % of paid amount	Not paid			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TOTAL July 2005	25	23	77	28	1	0	48	186050	31200	7799	56500	0	0	0
Cluj	7	6	19	6	0	0	13	41400	7650	1912.5	7500	0	0	0
Bihor	1	5	7	1	0	0	6	41500	7250	1812.5	7500	0	0	0
Bistrita	5	1	6	0	0	0	6	11500	250	62	11000	0	0	0
Maram	4	9	15	1	1	0	13	62900	11800	2950	15500	0	0	0
Satu Mare	6	1	12	5	0	0	7	16750	2750	687.5	1500	0	0	0
Salaj	2	1	18	15	0	0	3	12000	1500	375	13500	0	0	0

ANNEX 3

Inspectorate	Number of inspectors	Financial resources (RON)	Number of inspections	Value /inspections	Value/ inspector
Cluj	9	18060.65	686	26.32	2006.7
Bistrita Nasaud	6	10536.52	506	20.82	1756.08
Bihor	3	11005.97	363	30.31	3668.65
Maramures	8	12784.32	605	21.13	1598.04
Salaj	5	7314.04	515	14.20	1462.80
Satu Mare	7	6367.09	308	20.67	909.58
Total	38	65848.59	2983	22.07	1732.85

Scotland

IMPEL workshop in Copenhagen 8 - 9 September 2005 on Quality Parameters for Environmental Inspectorates

Simon Bingham, Senior Environmental Protection Officer,
EPI Central Unit, EPI Directorate, Scottish Environment Protection Agency

Task 1. - Existing or planned quality measurement systems in your home environmental inspectorates (national and/or regional and/or local authority or authorities)

SEPA has several National Systems to ensure basic consistency & level of quality across its 22 offices. These are:

- Quality System – electronic – ISO9000 (principally National & some regional)
- Electronic recording system - (NEMS; National Environmental Monitoring System)
- National QA Inspection Forms (for each regime)
- National Reporting Systems (eg copy of form & covering letter to operator)
- National - Generic Inspection Protocol
- National - Generic Inspection Procedure
- National - Regime specific training in inspection principles (internally delivered & mandatory for all those involved in that regime)

Task 2. - Ideas of quality parameters for discussion during the workshop.

- Auditing of inspections (internal & external)
 - Compliance recording
 - Core competency of inspectors
-

Spain

QUALITY PARAMETERS FOR ENVIRONMENTAL INSPECTORATES. BASQUE COUNTRY EXPERIENCE.

BACKGROUND.

Basic information on environmental inspection in the Basque Country.

Population: 2,1 million
IPPC installations: about 300
Industrial activities: about 20.000
Inspection strategy:

While keeping the traditional approach, in 2004 a new inspection Plan was approved by the Basque Government orientated mainly to the IPPC installations, to geographical areas with specific environmental interest or problems and to complaints.

The inspection is controlled by the administration but contracts external entities certified with the EN 17020 or 17025 to perform compliance assessments and/or analyses of air, soil or water waste samples.

The inspectorate has not a certified quality systems, but we are developing the procedures, the instructions and templates of the reports for all the work so all the entities presents the reports following the same criteria. The references for the quality system are the Recommendation of the Parliament and of the Council and the Norm ISO/IEC 17020/1998.

The Inspection Plan was approved in 2004 and every year programme is submitted for approval and a year report is produced. The inspection procedure has the following steps:

1. Compliance assessment. All the information of the site available in the administration is reviewed and checked on a site visit. A report is produced with the following parts:
 - a. Basic report. It has detailed information on: administrative details and contacts of the site, energy, products and water consumption, description of the process and environmental aspects (air emissions, water, wastes, environmental management, permits, etc.)
 - b. Inspection plan. Outline the more relevant environmental aspects and propose analytical work
 - c. Environmental risk screening. An adapted version of UK-OPRA is used to classify the sites according to risk. The following attributes are considered: complexity, localization, emissions to water, air and soil, environmental management and compliance.
 - d. Conclusion and improvement options. It summarises the environmental aspects of the site and at the end there is a list with the non-compliances and another one with the options to improve. This last part of the report is submitted to the sites.
2. Action plan. Together with the conclusions report, we sent a letter to the site requiring them to present an action plan in 2 months. To elaborate the plan, we enclose an instruction with the times we consider appropriate to correct each non-compliance.

3. Follow-up. In the follow up visits we check the implementation of the action plan and update the information on the site and the risk screening.

Basic information on quality parameters.

We are in the process of choosing the quality parameters o indicators. For that we are handling the following basic information:

1. The Environmental Protection Operator and Pollution Risk Appraisal (EP OPRA) by the UK Environment Agency
2. INECE-OECD Workshop on Environmental Compliance and Enforcement indicators. Paris 2003.
3. Office of Enforcement and Compliance Assurance of the US EPA
4. Environment Canada.

QUALITY PARAMETERS IN THE BASQUE INSPECTORATE.

I can not see big difference between the quality parameters of an inspectorate and Environmental Compliance and Enforcement (ECE) indicators. Am I right? If so, I would agree with the classification done in the INECE-OECD meeting:

- Input indicator
 - Number of inspectors
 - Enforcement budgets
 - Number of hours of training by inspector
- Output indicators
 - Number of inspections
 - Number of enforcement notices
 - Number of fines
 - Amount of
- Intermediary outcome indicator
 - Number and types of responses to inspections
 - Rates of compliance
 - Reduction on emissions
 -
- End outcome indicator
 - Change in ambient concentrations.

We are thinking of using the adaptation we have done of the UK OPRA as the main indicator of the inspectorate performance and for the planning of the inspections. This tool classifies the sites in a band according to the following attributes: complexity of the site, location, emissions to water, air and soil, environmental management and compliance.

In order to drive the environmental enforcement by risk, to evaluate the band of compliance, we have developed a non compliance list and a system to classify them according to their environmental risk. For each non-compliance classification we have a 2x2 matrix, one of the entrance is base on the risk that poses the non-compliance in general and the other is the risk of the non compliance in that particular case evaluated by the inspector. The values obtained for each non-

compliance are sum all up and obtained a value that is associated a band of compliance.

Sweden

Carl-Philip Jönsson
Director of Environment Protection and Nature conservation
County Administrative Board of Kronoberg, Växjö, Sweden

Quality measurement systems for environmental licensing, inspection and enforcement at the County Administrative Board of Kronoberg, Sweden

The 21 County Administrative Boards (CAB's) of Sweden has been given a broad spectre of tasks under the Environmental Code. The tasks consist of licensing and permitting of environmentally hazardous activities (i.e IPPC-facilities and others), inspections and enforcement for major and medium sized facilities and supervision of inspections and enforcement carried out by the Local Authorities (Environmental and Public Health Committees of the Municipalities).

The CAB of Kronoberg has, like the other CAB's, no clear, defined quality management system like ISO 9000 and similar in place. However, there is a quite vast number of different actions taken to follow up and evaluate the performance of the CAB as a regional, governmental authority.

All costs for staff and expenses are being planned, budgeted, monitored and evaluated for different kinds of activities like licensing including EIA-processes, appeals, initiative inspections, complaints, assessment of annual reports from the IPPC-facilities etc. Likewise all officers are obliged to register their time and work in a certain system that is equal to the major tasks mentioned above. Furthermore all particular cases, (an application for a permit from an IPPC-facility or a complaint from a neighbour in a residential area) are thoroughly registered in a system also containing the major tasks above.

From these three "pillars", time, costs and number of particular cases it is possible to create a lot of statistics used for our own evaluation and for the annual report to the government. The uniform registry system and codification is the key factor to make this possible.

When it comes to inspections we use parameters that are mainly quantitative like number of facilities, number of inspections, number of inspections induced by external complaints, number of facilities with minor or major lack of compliance with permits, conditions etc. number of cases reported to prosecution, number of orders to pay a fine. Some quality aspects is involved when it comes to the number of appeals on our decisions (licensing or enforcement) and furthermore how many of them that are denied or granted by the Environmental Courts or the Government.

We also keep track of the time for handling a particular case, for example the number of days from when application is registered until decision is signed. It is also possible to compare the average costs for the CAB to handle an application but since the complexity and the great variety of the facilities that need a licence according to the Environmental Code this is not used but for licensing as a whole. The handling time

for a licence is one of the most popular items for the companies and the local politicians.

7 Suggested indicators

Number of IPPC-facilities for licensing

Number of Applications/yr :

Mean handling time:

Total cost (days)

Number of appeals:

Rate of corrections of CAB decisions:

Number of IPPC-sites for inspection:

Number/rate of on-site inspections:

Number/rate of complaints:

Number of prosecutions:

Total cost (days):

These indicators will be easy to produce from our systems.

---oooOooo---