

European Commission, DG Environment
Follow-up study on the
implementation of
Directive 1999/31/EC on
the landfill of waste in EU-
25

Final Report - Findings of the Study

June 2007

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Executive Summary

The current study has been elaborated for DG Environment and covers two aspects relating to Directive 1999/31/EC on the landfill of waste (hereafter, the "EU Landfill Directive"):

- The first aspect concerns the assessment of the situation regarding illegal/uncontrolled landfills in ten new Member States¹ (hereafter described as "Task 1").
- The second aspect regards the description of the implementation of Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills of 19 December 2002 (hereafter, "the Council Decision") in six selected Member States², and the identification of possible problems in the implementation of the Decision (hereafter described as "Task 2").

The study was elaborated on the basis of country reports drafted by national experts having carried out desk studies and interviews with relevant stakeholders. The current final report provides a cross-country assessment in relation to the two tasks covered, comprising

- summaries of the situation regarding illegal landfilling and the Decision on waste acceptance criteria in each country covered;
- cross-country analyses of selected task-specific issues;
- the identification of critical findings for each of the two tasks covered;
- recommendations to the Commission to address the critical findings.

Task 1

It proved difficult in the practical implementation of the study to clearly delineate the notion of illegal landfills. Nevertheless, it was possible to distinguish between relevant critical types of illegal landfills, comprising:

- landfills established and operated without a national permit;

¹ Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

² Germany, Hungary, Ireland, Slovenia, Spain and Sweden.

- closed landfills that continue to be used;
- significant sites of illegal waste dumping.

Still, because of the lack of comprehensive information at least at the national level in the Member States examined, it proved very difficult to arrive at a clear quantitative description of the problem of illegal landfills (by category).

Task 1: Main findings

The study showed that all Member States subject to Task 1 are deeply involved in the process of bringing their existing landfills in line with the requirements of the EU Landfill Directive. This process is more or less advanced in the Member States examined. Also, it can be observed that the national processes are not always fully in line with the process as foreseen in the EU Landfill Directive. Notably, there is a tendency in Member States to see the date of 16 July 2009 as a single deadline for bringing their landfills in line with the Directive.

In this situation, the issue of illegal landfilling per se appears to be of subordinate importance to Member States: thus, perhaps with two exceptions (Cyprus and Malta), none of the Member States disposes of a comprehensive inventory of illegal landfills.

By contrast, several Member States dispose of an overview over the number of old closed sites, both comprising sites closed down in the process of achieving compliance with the EU Landfill Directive, as well as sites closed down prior to that process. In several cases, Member States know that these closed sites continue to be used for waste dumping, and are thus illegal. However, there is no precise knowledge, at least at the national level, in any of the Member States examined, of how many of these sites are actually still used.

Knowledge on the impact of illegal landfill sites is uneven between the Member States, with, for example, Cyprus well aware of the impact of the sites identified as illegal in Cyprus and the sites already closed down in Malta. The same is true for the Czech Republic where inventories of "old burdens" include closed landfill sites whose impact is documented. To the extent that such closed landfills continue to be used for illegal dumping, such registers of closed sites are a useful starting point for further work to be undertaken. At the other end of the spectrum, Member States have forwarded general information on the potential impacts of illegal landfill sites.

In some cases, where inventories of old closed sites exist, rehabilitation strategies for these closed sites are also in place, although not always linked to specific timetables.

The legal responsibility to deal with illegal dumping and emerging dumpsites is mostly at the municipal level but is rarely enforced, primarily because of lack of administrative capacities and lack of funds. These sites are not systematically documented at the national level in any of the ten Member States, nor does there seem to be much guidance from the national level to the local level on this issue.

In terms of problems recognized as hindering the elimination of illegal sites and the prevention of the emergence of new sites, the following main causes can be highlighted:

- a lack of information on the precise number and impact of those sites, as a precondition to solve this problem; and imposition of the burden on the local level, rather than national coordination of the issue;
- the absence of efficient and comprehensive, country-wide waste management systems, including in particular collection systems;
- increased waste disposal fees;
- a general lack of awareness, including, sometimes, within (local) administrations.

Task 1: Recommendations

The consultants' recommendations to the Commission on Task 1 are as follows:

- There is a need to explain the requirements of the EU Landfill Directive regarding the process of bringing existing landfills in line with the Directive. National processes are not always consistent with the Directive's stipulations. In this perspective, the current initiative of DG Environment, in the framework of the project on "Information Exchange and Awareness Raising", to organise awareness-raising events in all new Member States is a useful exercise and should be followed up by further multi-country events also allowing for the exchange of experiences and best practises between Member States.
- Eventually, i.e. after the expiry of the transitional period for existing sites (July 2009), the Commission may consider to specifically cover illegal landfill sites in Member States' reporting on the implementation of the Landfill Directive. This would presuppose that appropriate questions covering the issue were included in the Commission's reporting questionnaire, issued to Member States prior to the beginning of each 3-year reporting period. In turn, this would require a clear delineation of the notion of illegal landfills. Such delineation could be elaborated by DG ENV in the form of guidance to Member States and discussed in the Technical Adaptation Committee under the Landfill Directive (and, possibly, IMPEL), prior to finalisation, and the subsequent use for reporting purposes.
- Statements from the Member States made in the context of the study indicate that old closed landfills represent a threat to the environment with potential groundwater contamination as the one single environmental impact of most significance. This is even more so the case as the requirements attached to the "closure" of landfills do not always seem to be in line with minimum requirements of the EU Landfill Directive, and the notion is highly likely in some cases simply to refer to landfills which have ceased operations.

Many Member States are aware that closed landfills present a problem where they continue to be used for illegal waste dumping. In this respect, the consultants consider it vital, firstly, to ensure that any closure is effectively enforced, and, secondly, to speed up as much as possible, the process of beginning the rehabilitation of these sites. Ideally, Community funds should increasingly be earmarked for this purpose by the Member States, supported by the European Commission. Also, DG ENV can provide important support on this issue of effective closure of sites as well as rehabilitation by identifying and fostering the exchange of best practise between old and new Member States.

- Regarding the important role of the local level in most Member States to ensure enforcement vis-à-vis perpetrators illegally dumping waste, it appears important to address specific guidance, e.g. in the form of workshops under the umbrella of IMPEL, to the local level. Such guidance currently does not appear to be sufficiently emerging from the national levels.
- More generally, ensuring effective waste management and collection systems is one of the most important instruments in preventing the illegal dumping of waste. Leaving as much as 50% of households without any municipal collection system, as observed in the context of the study, the risk of illegal dumping appears to be high. Implementing obligatory participation in local collection systems as is done, for example, in Estonia, decreases the incentive of households to dump waste illegally whilst ensuring the necessary financial base for investment in waste infrastructure. Again the exchange of experience and best practise among Member States in how effective local collection systems are implemented is thus, in the view of the consultants, an important tool for the further development and improvement of waste management in general, and the prevention of illegal dumping more particularly. Again, IMPEL seems to be well-placed to develop such an initiative.

Task 2: Main findings

Regarding Task 2, the following picture of the status of implementation of Decision 2003/33/EC across the Member States covered by the study, emerged:

In most Member States subject to the study a regulatory and enforcement framework, including sanctions, is in place.

However, in some cases, it is perceived by the stakeholders, or obvious from the information provided that there are some deficiencies with regard to the national regulatory frameworks in place.

In most cases, the Decision is not yet fully applied in practise, or there is a limited experience with its practical experience.

There is a perceived need of further guidance to stakeholders, including enforcement authorities in most of the Member States.

Increased administrative burdens and costs through new requirements, in particular testing requirements were observed in many of the Member States,

mostly with regard to landfill operators and waste generators, in particular SMEs, but in some cases additional burdens imposed on the competent authorities were also mentioned.

Mechanisms for acceptance procedures in line with the Decision have been established in most Member States, but in some cases important elements as a pre-condition for actual implementation are missing (e.g. standards).

Acceptance criteria are applied in most Member States, but with some variations (additional parameters, more stringent values, three-times-higher limit values derogation not always used).

The consultants wish to underline two issues in particular:

- In some countries, a major deficiency lies in the fact that the Council Decision is not fully applicable to all sites yet. In several Member States, a clear differentiation in terms of level of compliance with the Decision's requirements is made between existing sites which are expected to close down and those sites which are expected to continue operating pursuant to the requirements of the EU Landfill Directive.
- The consultants have also observed that the scope of testing for non-hazardous waste seems to vary between the Member States studied, pointing to uncertainties in the interpretation of the Decision, potentially affecting the uniformity of its application across Member States.

Task 2: Recommendations

The consultants' recommendations to the Commission on Task 2 are as follows:

- The Commission may consider addressing the issue of insufficiency of national legal frameworks more systematically, e.g. through detailed conformity checks of national implementing measures in relation to the Decision.
- The Commission has an important role to play as broker for the dissemination of information and best practise regarding the implementation and enforcement of the Decision in the Member States. It may consider arranging for, or actively participating in workshops, directed at Member States' authorities, both as regards implementation and enforcement. The purpose of such information exercises would be:
 - to further the understanding of the Decision, in particular as regards its purpose;
 - to clarify the scope of the Decision and its technical requirements, including the procedures to be followed, the testing requirements and the standards to be used for testing;
 - to promote best practise, e.g. regarding guidance provided to landfill operators and waste generators implied by the requirements of the Decision.

- The consultants consider that it would also be important to address workshops to private stakeholders affected by the Council Decision, i.e. landfill operators and waste generators. Such workshops should be organized with the close involvement of national authorities.
- In some Member States, a clear differentiation in terms of level of compliance with the Decision's requirements is made between existing sites which are expected to close down and those sites which are expected to continue operating pursuant to the requirements of the EU Landfill Directive. It appears from the results of this study, that Member States do not yet fully apply the Decision's requirements to all existing landfills, prioritising and addressing at first the situation at landfills which will continue operating after the end of the transitional period set by the EU Landfill Directive. Here too, there is clearly a need to clarify the applicable timelines under the EU Landfill Directive and the Council Decision.
- Another problem noted regarding the application of the Decision relates to the issue of testing, and, more particularly, the testing exemption for certain non-hazardous wastes deposited on non-hazardous landfill sites. It has been observed that different Member States address this issue differently. The consultants propose that this issue is further clarified, the issuance of interpretative guidance probably being the most appropriate option to pursue for DG ENV.
- A number of technical issues were raised, where Member States perceive problems in the practical application of the Decision's limit values to certain wastes. In the view of the consultants, the way forward in those cases might be a formal adaptation of the Decision.
- Finally, as regards the practical application of the Decision, no full picture is available yet. Certainly, proper application and enforcement of the Decision's requirements in practise presuppose that the problems mentioned here above are addressed. In a second step, the information base regarding the practical application "on the ground" could be improved by more detailed surveys of selected issues of application and enforcement in practise to be investigated in a comparable way across all Member States.

1 Introduction

The current report is the final report concerning the "Follow-up study to the implementation of Directive 1999/31/EC on the landfill of waste in EU-25". The project is carried out by COWI AS (Denmark). It started on 30 August 2006 and is due to be finalised by 30 June 2007.

The project consists of a study covering two aspects under Directive 1999/31/EC on the landfill of waste of 26 April 1999 (hereafter, "the EU Landfill Directive", or "the Landfill Directive").

- The first aspect concerns the assessment of the situation regarding illegal/uncontrolled landfills in ten new Member States³ (hereafter described as "Task 1").
- The second aspect regards the description of the implementation of Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills of 19 December 2002 (hereafter, "the Council Decision") in six selected Member States, and the identification of possible problems in the implementation of the Decision (hereafter described as "Task 2").

Readers should note that the report presents the views of the consultants, which do not necessarily coincide with those of the Commission.

1.1 Aim of the study

Regarding Task 1, the aim of the study is to provide the Commission with further information on the situation in the ten Member States not yet covered by the 2005 predecessor study on the implementation of the Landfill Directive in EU-15 with regard to illegal/uncontrolled landfills. The study shall enable the Commission to identify those Member States where there is a widespread problem of illegal/uncontrolled landfilling, the reasons for this and the most appropriate measures to be taken to improve the situation in each Member State concerned.

³ Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

Regarding Task 2, the aim of the study is to deepen the Commission's information on how Member States apply the Council Decision, what are the implementation problems and the reasons for these problems. The study shall enable the Commission to identify to what extent the Council Decision has been implemented and is applied in the Member States, the potential problems with the implementation of the Council Decision and how these problems could be overcome.

1.2 Report outline

This Final Report is structured as follows:

- Chapter 2 provides an overview of the methodology employed in carrying out this study.
- Chapter 3 contains the results of the study on Task 1, regarding illegal/uncontrolled landfilling in ten new Member States. In a first Section we summarize the situation in each of the countries covered. In a second Section, we present a cross-country analysis of the findings in the ten Member States, in a third Section we summarize critical findings, and in a fourth Section we formulate recommendations to the Commission on measures that may be taken to improve the situation in each of the Member States covered.
- Chapter 4 contains the results of the study on Task 2, regarding the implementation of Council Decision 2003/33/EC in six selected Member States. Also this Chapter is subdivided in three Sections, presenting, firstly, a summary of the situation in each of the six Member States; secondly, a cross-country analysis of the findings, thirdly, a summary of critical findings, and fourthly, recommendations on how to improve implementation of the Council Decision.

The background documentation resulting from the study, notably the country reports for each of the countries covered by Task 1 (ten countries) and Task 2 (six countries) respectively, is compiled separately and made available to DG ENV.

The Appendices to this Report list the contributing national experts, the documentation on which their country studies were based, as well as the stakeholders interviewed by them for the purposes of the study.

2 Methodology

The project was implemented in three phases,

- an inception phase, serving primarily to select, in agreement with DG ENV, the six Member States that would be covered by Task 2 of the study, and to identify and agree on stakeholders to be interviewed in the course of the study;
- a subsequent information gathering phase, during which country-specific information for each of the tasks was collected;
- finally, a third phase, during which a cross-country assessment was carried out as laid down in the present report.

2.1 Selection of Member States covered by Task 2

The selection of Task 2 Member States was primarily based on the following criteria:

- whether, according to available information at the time of making the selection, national legal implementation measures had been taken by the Member State already;
- whether, in general, according to available information at the time, waste management policy, and in particular the application of acceptance criteria and procedures was relatively advanced;
- coverage of both old and new Member States;
- coverage of both larger and smaller Member States;
- coverage of various geographic conditions.

In agreement with DG ENV, the following Member States were selected for Task 2:

- Germany,
- Hungary,

- Ireland,
- Slovenia,
- Spain, and
- Sweden.

2.2 Identification of stakeholders to be interviewed

Stakeholders to be interviewed were subsequently identified for both Tasks 1 and 2.

Stakeholders were selected on the basis of a list of members of the EU Technical Adaptation Committee under the Landfill Directive, supplemented by potential respondents as proposed by COWI and COWI's national experts.

Stakeholders interviewed for Task 1 comprise government experts, usually from the national environment ministry and, where possible, including both policy as well as enforcement experts. Besides government officials, NGO representatives were interviewed, and, in some cases, representatives from national waste management associations, or individual landfill operators. Three to four stakeholders were interviewed in each of the ten new Member States covered by Task 1.

Similarly, stakeholders to be interviewed for Task 2 comprised government experts, again, where possible both from the policy and enforcement side, as well as representatives from national waste management associations and, in some cases, individual landfill operators. Also within this Task, normally three to four stakeholders per country covered by Task 2 were interviewed. All stakeholders interviewed are listed in Appendix I to this report.

2.3 Methodology used for collection of country-specific information

A parallel methodology was employed for the implementation of both Tasks 1 and Task 2, during the subsequent phases of project implementation as follows:

Member State-specific information was gathered through desk studies, combined with interviews of key stakeholders, including both public authorities, landfill operators and NGOs. The stakeholders interviewed were selected as described above. Member State-specific information was gathered by COWI's national experts, on the basis of common guidelines and common interview templates, elaborated by COWI. Appendix II to this report lists the documentation used by national experts in their desk studies.

- Information and data thus gained was summarised and assessed in country reports, for which COWI had developed a common template for use by the

national experts. Appendix III lists the national experts that have compiled the country reports.

- The country reports formed the basis for a cross-country assessment constituting this final report.

2.4 Methodology used for cross-country assessment

Task 1

The cross-country assessment constituting this final report consists of the following steps for Task 1:

- In a first step, Member State-specific information has been summarised for each Member State covered by Task 1, following a common structure. The description of the status of implementation in each of the six Member States addresses the following aspects:
 - the general context;
 - the legal and administrative framework⁴;
 - the institutional set-up and responsibilities⁵;
 - administrative capacities;
 - description of the measures taken by Member States to identify illegal landfills;
 - information on the incidence of illegal landfills (number and impacts), including where existing an inventory of illegal landfills;
 - extent to which the problem of illegal landfills is limited to private entities or also extends to municipalities or other public bodies;
 - description of the measures taken by Member States to eliminate illegal landfills;
 - existence of a plan for rehabilitation including timetables;
 - factors contributing to the existence and hindering the elimination of illegal landfills.

⁴ See TORs: including issue of whether there is a systematic approach, i.e. whether there are specific procedures in place for identifying and investigating illegal landfills, a standard approach to the imposition of deterrents and consistent standard procedures for the regularisation of waste and site rehabilitation

⁵ TORs: the responsible authorities should be indicated

- Subsequently, an item-specific assessment of the information available from the Member States has been carried out along the same subject-matter lines as above.
- In a third stage, the critical findings from the study have been identified and summarised.
- Finally, the consultants have formulated recommendations to the Commission addressing these critical findings.

Task 2

Similarly, for Task 2, the cross-country assessment consists of two parts.

- In a first stage, Member State-specific information has been summarised for each Member State covered by Task 2, following a common structure. The description of the status of implementation in each of the six Member States addresses these aspects:
 - legal implementation framework and guidance;
 - enforcement and sanctions;
 - level of implementation compared to the Decision⁶;
 - division of responsibilities amongst stakeholders;
 - cost implications;
 - sampling and testing;
 - problems raised by stakeholders.
- Subsequently, an item-specific assessment of the information available from the Member States has been carried out along the same subject-matter lines as above.
- In a third stage, the critical findings from the study have been identified and summarised.
- Finally, the consultants have formulated recommendations to the Commission addressing these critical findings.

⁶ However, the study did not include a systematic and detailed compliance check, see also below.

3 Task 1: Assessment of illegal landfilling in the 10 new Member States

Scope of the assessment

Task 1 consists of an assessment regarding illegal landfills in the ten new Member States. According to the terms of reference, the assessment shall include:

- Information on the incidence of illegal landfills, including their number, where known, and their potential environmental pressures (quantities, types and nature of the waste, characteristics of location, discharges and emissions, where known).
- A description of the measures taken by each Member State examined to identify and eliminate illegal landfills. It should be examined whether an inventory of uncontrolled landfills has been drawn up and whether there is a plan for the rehabilitation of the landfills including timetables. The responsible authorities should be indicated and it should be examined whether a systematic approach is followed, whether there are specific procedures for identifying and investigating illegal landfills, a consistent, standard approach to the imposition of deterrents and consistent, standard procedures for the regularisation of the wastes deposited in illegal landfills and for the rehabilitation of the sites.
- A description of factors contributing to the existence of and hindering the elimination of illegal landfills (e.g. shortage of disposal capacities in authorised installations, lack of control of commercial waste collectors, fragmented administrative responsibilities and inadequate administrative capacity, special economic incentives to resort to illegal landfill, shortcomings in deterrent measures).
- The extent to which the problem of illegal landfilling is limited to private entities or also extends to municipalities or other public bodies the problems connected therewith, the reason for their existence, plans for their rehabilitation, the competent authorities, administrative capacity, procedures for rehabilitation, timeframes etc.

The notion of illegal landfill

The predecessor study to the current study, "Implementation of the Landfill Directive in the 15 Member States of the European Union"⁷ included a comparable assessment on the presence of illegal/uncontrolled landfills in EU-15. One of the conclusions of the report was that

"... the methods by which illegal landfills are being measured between ... countries are not comparable. It appears likely that some ... Member States reporting illegal landfills are counting incidents of fly-tipping, historic landfills, or permitted landfills that are having regulatory action progressed against them. Conversely, it is possible that ... Member States ... are defining all illegal landfills as fly-tipping incidence."⁸

The terms of reference for the current study describe the scope of the work to be undertaken as an assessment of the presence of "illegal/uncontrolled landfills" and further identify the scope of the landfills to be included in the assessment as

"... municipal and commercial landfills created and operating without a permit under waste legislation as well as other unpermitted and uncontrolled landfilling activities such as the infilling with waste of wetlands, quarries and voids. It is not, however, intended, to address problems of litter abuse or random fly-tipping. It should also not cover landfills that have a permit but do not comply with the technical requirements of the Landfill Directive, nor closed landfills that have not yet been rehabilitated."

The notion of illegal landfill used for the purposes of the study

In order to ensure a consistent approach across all countries, the consultants further described the type of landfills to be assessed in the guidance documentation made available to the national experts, in line with the further description already put forward in their technical proposal for the study, as follows:

"An illegal landfill, which can be privately or publicly owned, including internal waste disposal sites, is:

- *a landfill which is operated without permit."*

An illegal landfill is not:

- *a landfill with a bad application (i.e. a permit has been given, but it does not live up to the requirements and conditions of the permit)*
- *a landfill with a permit issued in line with national legislation, but not in conformity with the requirements of the Landfill Directive*
- *landfills with a closure decision but not yet rehabilitated⁹*

⁷ Golder Europe EEIG, Report on the Implementation of the Landfill Directive in the 15 Member States of the European Union, October 2005.

⁸ Golder, at page ES - iii

⁹ In some written material, this was mistakenly worded as "... but not yet closed".

- *litter abuse or random fly tipping*
- *contaminated sites."*

The terms of reference refer to uncontrolled landfills in the header for the task description and in the description of landfills to be covered as quoted above. However, because of the description of landfills to be covered as

"landfills not having a permit under (national¹⁰) waste legislation as well as other significant unpermitted and¹¹ uncontrolled landfilling activities such as the infilling with waste of wetlands, quarries and voids",

the understanding to the scope of landfills to be covered was that the decisive characteristic of an illegal/uncontrolled landfill was that it should be unpermitted.

Practical difficulties in the application of the notion

In the practical implementation of the study it was seen that despite the efforts made to further streamline the understanding of the notion of "illegal landfill", it remains difficult to delineate and apply.

Landfill vs. dumpsite

This was due to a variety of reasons. Firstly, the use of the notion of "landfill" as such was not always understood. In many countries, it was not perceivable that a site of illegally dumped waste could be a "landfill" within the meaning of the definition of the term in the Directive. In those cases, "landfill" is understood as an organized activity. In addition, in some cases, the notion "landfill" is understood, per se to comprise certain technical environmental protection devices¹².

Habitual illegal dumping

Secondly, the exclusion of litter abuse or random fly tipping from the scope of assessment of the study has led to some confusion, to the extent that in some

¹⁰ The terms only refer to the absence of a permit under waste legislation. However, as the issuance of a permit can only be a national act, the consultants have understood the notion as a reference to a permit under national waste legislation. Clearly this understanding thus may exclude landfills from the scope of the study which do have a national permit in line with national legislation, but where the underlying national legislation is in breach of the requirements of the EU Landfill Directive. This may result in a situation where the thus permitted landfill does not live up to the requirements of the EU Landfill Directive. However, the terms of reference exclude such landfills from the scope of assessment "that have a permit but do not comply with the technical requirements of the Landfill Directive".

¹¹ Emphasis added.

¹² In fact, this became clearest in Latvia, where, as described in more detail below, the Latvian Waste Management Act legally distinguishes between landfills on the one hand and dumpsites on the other hand, the difference between the two consisting in the level of environmental protection measures in place. Clearly such distinction is in breach of the EU Landfill Directive.

countries fly tipping, or illegal dumping, has led to the emergence of permanent dumpsites, which are, of course, of relevance for the study¹³.

Timelines under the EU Landfill Directive

Thirdly, the study is carried out at a point in time where countries are in the process of following the procedures set out in the EU Landfill Directive in order to ensure that existing landfills are brought in line with the requirements pursuant to the Directive, until July 2009 at the latest. This does not as such interfere in any way with the scope of the study, as landfills with a permit, but not (yet) living up to the requirements of the Landfill Directive, are not included in the notion of "illegal landfills" according to the terms of reference for the study. However, it has become clear from the responses by many Member States that the July 2009 deadline in Article 14 of the EU Landfill Directive is often interpreted allowing for any landfill to be able to continue operations until that date, in the sense of a single deadline for all landfills. By contrast, the Directive foresees that sites which have not been granted a permit to operate, shall be closed down as soon as possible, and that any existing landfill shall comply with the requirements of the Directive within (i.e. not "by") the eight year transitional period foreseen by the Directive, and leading up to 16 July 2009. In practical terms, given that the study covered the ten new Member States, all countries are in a situation where national waste management system had to undergo a radical overhaul in recent years, including the reorganisation of their network of landfill facilities. In many cases completely new landfill installations have to be constructed which will comply with the requirements of the Landfill Directive. Although it is clear in these situations, that the existing facilities will not be permitted under the Landfill Directive and thus will need to close, pending the completion of the new facilities, and thus the availability of "fully compliant" capacities, the date of closure is often linked to the start of operation of the new sites at some point in the future¹⁴.

Flexibility of the study's approach

Anticipating possible difficulties in arriving at a clear and consistently understood notion of "illegal landfills" in all Member States covered, despite the above-delineation, we tried to clarify in all cases the understanding that national stakeholders interviewed for the purpose of the study attach to the notion of illegal landfills. Also, we have tried to extract detailed information from stakeholders interviewed not just on landfills with a permit and landfills without a permit, but also distinguishing between different stages of bringing existing landfill sites into full compliance with the provisions of the EU Landfill Directive, as well as between operating and non-operating sites so as to receive as precise a picture as possible of the status of landfilling in each of the countries covered.

Types of critical illegal landfills

On that basis, following an assessment of the individual country reports, it is possible to distinguish more concretely between relevant critical types of illegal

¹³ Because in the understanding of the notion of "illegal landfill" applied, such permanent dumpsites would be landfills without permit.

¹⁴ To the knowledge of the consultants, none of the countries examined foresees a date beyond 16 July 2009 for the closure of non-compliant landfills, but in practise, due to delays in the construction of new "replacement" landfills, it may not be excluded that at least in some cases, this date will in practise be exceeded.

landfills. These types of illegal landfills and their significance in each of the Member States covered by Task 1 will be described in more detail in the cross-country assessment in Section 3.2.1 below. In short, they comprise:

- landfills established and operated without a national permit;
- closed landfills that continue to be used;
- significant sites of illegal waste dumping.

With regard to the first bullet point, as explained above, we have considered the existence of a national permit as decisive. Clearly, it cannot be excluded that national permit procedures and required contents are not in line with EU requirements. In the study, we have noted major legal transposition deficits relating to permitting where we have come across them. However, no systematic "compliance checking" of underlying legal frameworks in view of whether national permitting procedures and requirements are in line with the stipulations of the EU Landfill Directive, which would be a separate legal exercise, was carried out¹⁵. Likewise, it would have gone beyond the scope of the present study to investigate whether national permits issued actually fulfill national permitting requirements.

Outline

In the following sections, we

- have summarised the situation for each of the ten new Member States covered, as described in more detail in the country reports (Section 3.1);
- have assessed a number of selected core issues across the ten Member States (Section 3.2);
- have summarised and discussed the main findings of the study regarding Task 1 (Section 3.3); and
- have formulated a number of recommendations to the Commission for addressing some of the findings from the study (Section 3.4).

3.1 Summary by Member State

3.1.1 Cyprus

Context

In 2003, the latest year for which figures are available¹⁶, the total amount of municipal waste generated in Cyprus was at approximately 520.000 tons. From 1996 to 2003 there was an increase in the order of 23% in the amounts of mu-

¹⁵ Indeed, DG ENV has in the past contracted out such separate conformity checks, assessing the conformity of national transposing legislation with the requirements pursuant to the Landfill Directive, covering, inter alia, the ten new Member States.

¹⁶ The following section is largely based on Environment Statistics, 2006, publication by the Statistical Service of the Republic of Cyprus.

municipal waste generated. Per capita, municipal waste generation is at approximately 720 kg/inhabitant, one of the highest figures in Europe. There is only limited (large enterprises), and outdated (1985) information available on industrial waste. Estimates exist for the total amount of hazardous waste generated which, in 2001 was at roughly 84.000 tons (slightly less than half thereof from the production and use of inks, dyes, pigments, paints, lacquers and varnish).

In Cyprus, almost all municipal waste is disposed in landfills. In 2003, 90% of municipal waste was collected by or on behalf of the municipalities. 10% was collected by the private sector as separate collection of waste fractions.

Waste management in Cyprus is governed by the 2003 Strategic Plan for the Management of Solid and Hazardous Wastes (in the following, the "Waste Management Strategy"). The Waste Management Strategy foresees, inter alia, the construction of four new landfill sites to replace the approximately 100 existing waste disposal sites. It is foreseen that the four new landfills will be in operation by 2009, replacing the existing sites by that date. One of the four new sites, the Paphos site, is already operating, yet apparently¹⁷ still without a waste treatment facility.

Legal and administrative framework

Waste management and the landfilling of waste in Cyprus are principally covered by the following acts:

- 2002 Law on the management of solid and hazardous waste;
- Municipality Law (1985, 2002) and the Local Communities Law (1999, 2002).

The disposal of waste in unauthorised sites is illegal according to the Law on the management of solid and hazardous waste. Enforcement is the responsibility of the Ministry of the Interior (its Solid Waste Management Sector with inspectors situated in the four counties and in a central office in Nicosia) which is, inter alia, charged with the responsibility of enforcing all waste management legislation. Inspectors have the authority to prosecute or to issue out of court fines. The fines can be up to a maximum of CP 200 (i.e. roughly EUR 340) per incidence. In case the non-conformity for which the fine was given is not rectified within 48 hours, then the fine is doubled, and again, doubled if the problem is not solved within another 48 hours. Subsequently, a charge for appearance in the court is made.

There is no standard procedure in place for the identification of illegal landfills. However, the Waste Management Strategy acknowledged the existence and problem of illegal landfills. As a result, the need for a specific study for illegal landfills was identified.

As will be described in more detail below, in 2004, the Ministry of Interior tendered such a study on illegal landfills. The study identified a total of 113 of such landfills. It is noted that this study did not include areas of illegal ad hoc

¹⁷ Information transmitted by DG ENV as part of their comments on the draft final report.

	<p>waste disposal (random illegal dumping)¹⁸. It includes only sites that have been selected by the local authorities for use as waste disposal sites, but which did not receive the respective permits. The study also covered the issue of management of such sites, resulting in the formulation of general rehabilitation guidelines for the sites as integral part of the study.</p>
<p>Institutional set-up and responsibilities</p>	<p>In general terms, the Ministry of Interior is responsible for the management of municipal non-hazardous solid waste, including the formulation and implementation of the Waste Management Strategy, whilst the Ministry of Agriculture, Natural Resources and Environment, and more specifically its Environment Service is responsible for EIA, for monitoring environmental impacts from waste disposal operations and for issuing permits for licensing waste management operations related to hazardous wastes. Inspection, monitoring and enforcement of the regulations under the remit of the two ministries are carried out by their respective inspectorate services.</p> <p>The Ministry of Interior is responsible for identifying, managing and restoring illegal landfill sites.</p>
<p>Administrative capacities</p>	<p>It is considered by the Cypriot authorities that there is a strong administrative and regulatory regime addressing the issue of illegal landfilling. It is stated, however, that enforcement in general is suffering from a lack of personnel. Currently the county offices of the Solid Waste Management Sector within the Ministry of Interior are manned by two inspectors each, and by three inspectors in the Nicosia office. The central sector office is manned by four technical officers, a civil engineer and the supervising inspector. The Solid Waste Management Sector has requested the employment of additional personnel in order to deal with enforcement gaps.</p>
<p>Identification of illegal landfills</p>	<p>Illegal landfills, i.e. those landfills which possess no permit or approval, have been identified through the 2004 illegal landfill study. The study included a survey over the whole area under Cyprus Government Control and has, according to the Cypriot authorities interviewed for the study, identified and documented all illegal landfill sites on Cyprus. Documentation includes a map of each site, description of types and volumes of waste and an assessment of risk to the environment.</p>
<p>Incidence of illegal landfills - inventory</p>	<p>From the study, a total of 113 illegal landfills have been identified. All landfills are municipal and accept mixed waste (both domestic and industrial). From these sites 51 are in operation as follows:</p>

¹⁸ Which, as problems of litter abuse and fly-tipping are not covered by the terms of reference, are not of relevance as such for the study.

Table 3.1 *Inventory of landfills in Cyprus*

County	Fully operating	Partially operating
Nicosia	6	4
Limassol	10	7
Larnaca	5	1
Ammohostos	3	0
Paphos	15	0
TOTAL	39	12

Seven of the open sites have controlled operations, whereby ‘controlled’ refers to the fact that they possess an operation license in accordance with the procedures foreseen prior to 2004. It also refers to the fact that the waste being disposed of is inspected such that materials unauthorised for landfill disposal are not dumped in these sites. The remaining sites are operated in an uncontrolled manner which means that the type and quantities of material dumped is not controlled.

The currently operating sites do not utilise any of the EU prescribed environmental protection infrastructure and practices. Most notably they lack bottom liner, drainage collection systems, landfill gas management, flood control works, fire prevention fencing and environmental monitoring.

The remaining illegal landfills, about sixty, are not operating, though none of these sites have been formally closed and restored yet¹⁹.

Impact

All sites together take up a surface area of 382 acres. A total of 4.5 mio. tons of waste are estimated to be buried in the 113 landfills.

The Cypriot study on illegal landfills showed that serious environmental impacts have resulted over the years of operation of the landfills. The major environmental and health concerns that were identified include:

- groundwater pollution;
- soil pollution;
- underground transport of landfill gas;
- odour;
- landfill gas fires and explosions;
- landfill fires usually incurred in order to reduce the volume of waste;

¹⁹ Unlike in other Member States, the issue of whether these closed sites continue to be used for the illegal dumping of wastes has not been raised as a problem by the Cypriot authorities.

- animal grazing - the landfills are not fenced thus it is rather common for herds to be entering the waste disposal areas.

A general assessment of the level of impact to the environment based on the said Cypriot study and the views of interviewees is provided in the following table:

Table 3.2 *Level of environmental impacts - Cyprus*

	High	Medium	Low
Groundwater pollution	X		
Soil pollution	X		
Gas emissions		X	
Surface water pollution	X		
Effects on Human Health		X	

Private entities/municipalities or other public bodies

No specific information has been forwarded regarding the extent to which the problem of illegal landfilling covers private entities and/or extends to municipalities or other public bodies. The 2004 study focussed on municipal landfills.

Elimination of illegal landfills

In accordance with the Waste Management Strategy of 2003, four fully authorised landfills will be operating by 2009. These are foreseen to replace all existing sites thus none of the existing illegal landfills should operate after 2009.

For the 10 largest of the identified illegal sites, EIAs have been prepared in the context of the study, and rehabilitation plans have been elaborated. The study also resulted in the formulation of general rehabilitation guidelines for the remaining sites.

The Ministry of Interior has undertaken the responsibility to restore, close and manage all identified illegal landfills in accordance with the specifications prescribed in the study. They will also finance the proposed rehabilitation of all identified illegal landfills. The preliminary total cost of rehabilitation is estimated at EUR 60 mio.

The method of rehabilitation has been selected for all 113 sites. Some will be restored either via on-site rehabilitation works and some by the removal of the buried waste.

The larger sites will be rehabilitated in accordance with the provisions of complete EIA and rehabilitation studies that have been undertaken. The remaining will follow the general guidelines drafted in the 2004 study.

The EIAs have provided specific steps to be included in the rehabilitation and aftercare plan for each of the ten major sites. Each step is accompanied with details on how it is implemented. Rehabilitation and aftercare works will include among others, the following main steps:

- fencing of the sites;
- ground works for establishing suitable gradients;
- covering with coarse materials;
- complete waterproofing at the upper layer;
- installation of drainage system;
- surface covering and planting;
- drainage management works;
- landfill gas management works.

More generally, the application and enforcement of the provisions of the 2002 Law on the management of solid and hazardous waste is expected to ensure the proper disposal and avoid illegal dumping of waste in the future (e.g. requirement of collection operators to have a license; requirement of all waste management operators to maintain a register of managed waste; inspections of waste management operations, including issuance of fines etc.).

Rehabilitation plan

Based on the 2004 study, a schedule of formal closure for all illegal landfills has been put in place. In accordance with this program, illegal landfills in each county will end operations concurrently with the start of operations of the respective new authorised landfill in that county and will be restored within one year from the end of operations. The following program is foreseen:

- all sites in the Paphos county will cease operations in 2007 and be rehabilitated in 2008;
- all sites in the Larnaca/Ammohostos counties will cease operations in 2008 and be rehabilitated in 2009;
- all sites in the Nicosia and Limassol counties will cease operations in 2009 and be rehabilitated in 2010.

Thus, in accordance with the program set by the Ministry of Interior all new landfills will be operating in 2009 and all illegal landfills will cease operation by 2009 and will be formally closed and rehabilitated by the end of 2010.

Factors contributing to the existence and hindering the elimination of illegal landfills

The Cypriot authorities expect that after 2009 there will be no incidences of new illegal landfills given that a legal landfill will be in operation in each county, thus eliminating such a need. It is noted that taking into consideration the increased transportation distances between rural communities and the four new landfills, a network of transfer stations is foreseen. Thus, further follow-up work for the identification of illegal landfills is a priori deemed unnecessary.

However, keeping the 2009 timeline hinges on the timely establishment of the four new landfill sites. Only the Paphos site is already operating. Otherwise, delays have already occurred during the selection of the sites, which has, however, by now been completed. Still, as regards the Nicosia landfill there remains significant resistance against the project by local authorities and inhabitants neighbouring the proposed site. The tendering and selection of contractors and engineers for the detailed design and subsequently the construction of the landfills in Nicosia and Limassol still remain to be undertaken, while the tender for the construction of the Larnaca site is underway.

Implementation of the Waste Management Strategy may also face problems in the licensing of waste management operators. The municipalities generally possess the required infrastructure and know-how for waste collection operations. Thus it is foreseen that they will comply with the new waste management requirements without facing any serious problems. The rural communities however in general have limited know-how and resources and have a history of disposing waste in an uncontrolled fashion. It may therefore be over-optimistic to expect that they will be in a position to successfully manage their waste within the expected standards with the onset of the new landfills' operation. Also they may not be in a position to outsource such services due to lack of funds. The increased burden for these communities as well as a general lack of sensitivity concerning environmental issues may result in resistance to conforming to the new requirements and thus produce problems and delays in implementation. Also it may prove difficult for private organisations to run waste collection operations unless financial support is provided for this purpose by the state.

In addition to these potential problems in rural areas, it must be noted that the lack of personnel within the competent authorities can limit their enforcement capacity, which in turn may lead to the continuation of illegal dumping in some areas.

Regarding the rehabilitation of the existing illegal sites, it is a major step that environmental impact assessments and rehabilitation guidelines have already been prepared and approved for the rehabilitation of illegal landfills, as the Ministry of the Interior may now readily put forth tenders for implementation of rehabilitation works. Rehabilitation however may not begin until the new landfills are in operation since until then there are no disposal options other than the existing illegal landfills.

Summary

There appears to be a relatively clear picture regarding the existence of illegal landfill sites in Cyprus. 113 such sites have been identified through a study implemented in 2004. The study also included approaches for the rehabilitation of such sites. Implementation of the follow-up from the study is within the remit of the Ministry of Interior which will also finance the necessary activities. The operation of four new landfills in line with the EU Landfill Directive is foreseen by 2009, coupled with the concurrent end of operation of the identified illegal landfill sites. It is intended that all illegal landfills will be officially closed and rehabilitated by the end of 2010.

However, several issues remain which cause concern regarding the timely full implementation of the planned activities, including delays in the actual establishment of the new sites, a risk of insufficient knowledge about waste management requirements especially in rural areas, a lack of human resources ensuring full enforcement, and a risk of delays in the actual closure, rehabilitation and after-care of the identified illegal sites.

3.1.2 Czech Republic

Context

In the Czech Republic, about 25 mio. tons of waste were generated in 2005. About 3 mio. tons were municipal waste. A share of 80% of municipal waste was landfilled.

According to the available information, 237 waste landfills including 33 for hazardous wastes are currently legally operated in the Czech Republic. The regional authorities have received information from all those sites on the status of their compliance with the requirements pursuant to the EU Landfill Directive. The authorities are at the moment processing the environmental permits for continued operation or alternatively giving closing decisions. It is estimated, that between 30% and 50% of the currently operated landfills will be closed by 2009 at the latest, either because their capacity will have been reached, or because of continued non-compliance with requirements under the EU Landfill Directive or relevant Czech waste legislation (i.e. insufficient implementation of the relevant corrective measures as laid down in the conditioning plan and/or already issued IPPC permits).

The Czech Republic approved its national Waste Management Plan in 2003. Neither the national nor regional waste management plans deal with the issue of illegal landfilling. This conclusion was also confirmed through interviews with selected respondents who confirm that the actual waste legislation does not specifically deal with this issue. No standard procedures for the identification and further management of illegal landfills exist within the Czech Republic.

Legal and administrative framework

Waste management and the landfilling of waste is governed mainly by the Act on Waste, Act 185/2001 Coll., concerning wastes and changes to several additional laws. The Act took effect on 1 January 2002; an amended version was issued in 2005 as Act 106/2005 Coll. In addition a number of implementing measures are in place (decrees, regulations and standards).

Illegal landfilling, also termed "black landfilling" in the Czech Republic is usually understood as the dumping of wastes, i.e. an illegal means of waste handling comprising the illegal disposal of waste at non-permitted sites.

On the basis of the Act on Municipalities, the responsibility to identify, liquidate and remediate cases of black landfilling rests with the municipality on the area of which it is occurring. In principle, the person having dumped the waste is responsible to remove the waste, and/or cover the costs thereof. Where the

waste originator cannot be identified, the onus of clean-up and financing thereof rests on the municipality²⁰.

Institutional set-up and responsibilities

The following responsibilities apply in the Czech Republic regarding illegal landfilling:

- The Ministry of Environment operates and regularly updates a database "System of Evidence of Contaminated Sites" (SEKM), which also includes data on "old environmental burdens", including closed landfills. More generally speaking, the Ministry also executes supreme state supervision in the waste management sector.
- The Czech Environmental Inspectorate controls and enforces compliance by legal and natural persons, as well as municipalities with legal, regulatory and administrative requirements in the waste management sector. Elimination of small dumpsites and random waste dumping is the responsibility of the municipality.
- Regional authorities are responsible for permitting waste management facilities, including taking decisions for closure or further operation on the basis of delivered conditioning plans, in parallel with the Czech Environmental Inspectorate for monitoring of compliance with waste management legislation.
- Municipal authorities also have compliance monitoring tasks. As mentioned above, based on the Act on Municipalities the municipality is responsible to deal with instances of "black landfilling", i.e. including identification and removal, and ultimately coverage of the costs thereof.

Administrative capacities

Neither at the national nor regional levels is there dedicated staff dealing specifically with illegal landfilling. This aspect is incorporated into other responsibilities of relevant officers at various levels. In total, 12 waste specialists manage the waste management agenda of the Ministry of Environment. From three to ten persons deal with the waste management issues at regional level (14 regional authorities). On average, from eight to ten environmental inspectors deal with the monitoring and control of waste management operations (mainly site inspections) in each of the ten regional offices of the Czech Environmental Inspectorate.

The upper institutional level (MoE, majority of regional authorities and inspection bodies) possess a sufficient number of skilled personnel in the area of waste management. On the other hand, the smaller municipalities do not have a sufficient level of relevant administrative capacity, both in quantitative and qualitative terms.

Identification of illegal landfills

In 2004, the Ministry of Environment developed a draft amendment of the Waste Act the purpose of which was to systematically and comprehensively

²⁰ As is described in detail below, a proposal was made in 2004 to cover the issue of "black landfills" in the Waste Act, but this proposal was subsequently rejected by Parliament.

address the issue of "black landfills". The proposed amendment was submitted to the Parliament, but was subsequently rejected by its legislative commission. Since then, no further targeted action has been undertaken.

The amendment targeted two issues of relevance for the identification and elimination of illegal landfills:

- provision for obligatory start-up of the procedure of identification of the originator of illegal waste disposal by the municipality in all cases where such activity was found to take place ex-officio or upon notification;
- establishment of an inventory of all "black landfills" within the Czech Republic.

The proposed amendment also included a temporary clause based on which municipalities could be exempted from their obligation to cover the costs for the removal of the waste where the generator could not be identified: this clause would apply in the case of all "black landfills" notified by municipalities to the Czech Environmental Inspectorate within a period of three months from the entry-into-force of the amendment. In those cases, the instances of "black landfills" notified were foreseen to be classified as "old environmental burdens", the responsibility for which lies with the Ministry of the Environment. Remediation of old burdens is financed either by the National Property Fund (in case the land owner has an agreement with this Fund) or the State Environmental Fund. 15% of the total number of old burdens are considered to be cases of extreme or high environmental risk and it is mainly those that are prioritised for remediation/recultivation through the State Environmental Fund.

The draft proposal was accompanied by supporting documentation on the estimated costs resulting from the subsequent systematic remediation of sites. The total cost for the remediation of "black landfills" was thus estimated to amount to approximately CZK 8.7 bn. (EUR 310 mio.) until the end of 2010.

Incidence of illegal landfills

It has been stated by the Czech authorities that all officially operated landfills in the Czech Republic are permitted and thus legal. Those landfills that will not comply with the requirements of the EU Landfill Directive as reflected in Czech legislation by July 2009 at the latest will be closed down²¹. It is recognized, however, that "black landfills" exist, but no comprehensive information is available at the national level. Since the above mentioned unsuccessful proposal to amend Czech waste legislation so as to tackle the issue systematically, no further activities have been undertaken.

Inventory

Consequently, there is no comprehensive inventory in place of "black landfills". However, the Ministry of Environment operates a database of various kinds of contaminated sites, including registered and documented waste landfills which

²¹ Many Member States surveyed interpret Article 14 of the Landfill Directive as establishing a single deadline, 16 July 2009, at the time of which all existing landfills that do not comply with the requirements of the landfill Directive have to be closed. This issue is discussed in more detail in the cross-country analysis below.

were closed during the period 1989-2000²². This database, "System of Evidence of Contaminated Sites" (SEKM), currently comprises, inter alia, the following sub-databases:

- system of evidence of old environmental burdens (SESEZ);
- database completed by the regional authorities in 1998 on closed landfills;
- national database of landfills permitted under the conditions of the former Waste Act No 238/1991. These sites were originally scheduled to close down, but their operations were prolonged in order to provide the municipalities with a transitional period to find out other options for waste disposal. Today this database only represents closed down sites.
- In addition, ten out of 14 regional authorities have developed their own registers of old environmental burdens including closed landfills, based on the national SEKM database. These registers provide detailed descriptions of the current status of the old environmental burdens identified.

In the 10 regional authorities with registers, about between 1.500- 2.000 closed landfills are registered. This database does not contain information on "black landfills".

Furthermore, in the region of Prague more than 1.500 locations of old burdens are registered, including sites of "black landfilling".

Impact

The national database SEKM includes a risk ranking for the registered sites, including closed landfill sites, from 1 - low risk, to 4 - extreme high risk. Based on the information contained in the ten regional registers, it can be estimated that for about 15% of closed landfill sites, the environmental risk is considered high or extremely high. Descriptions are fairly detailed, including impact description and a description of proposed interim and final measures.

Regarding the identified potential risks, the most significant one is the contamination of soil, groundwater as well as surface water. Where mainly household waste was previously stored, the risk of air emissions is also stated.

Private entities/municipalities or other public bodies

No specific information has been forwarded regarding the extent to which the problem of illegal landfilling covers private entities and/or extends to municipalities or other public bodies.

²² Clearly, all registers also including information on sites of "black landfilling" are of relevance for the current study. To the extent that the registers do not specifically contain such sites, they may still be of some interest in the context of the current study. This would be the case where such closed sites are continued to be used for illegal dumping. However, the Czech stakeholders have not specifically raised the issue of continued use of closed sites for illegal waste dumping. Closed sites as such (not yet rehabilitated) are not covered by the study. Nevertheless, because of the potential impact of closed sites as sites of illegal dumping, the information on the existing databases has been included.

Elimination of illegal landfills No national measures are in place, systematically to eliminate "black landfills" as the proposal for legislation to deal with this issue was refused in 2004. Random measures to combat "black landfills" are taken by municipalities though most local authorities do not have the necessary capacity to deal with the problem.

Incidences of waste dumping at old closed-down landfills registered in the national and/or the regional database of old burdens, is taken care of by systematically rehabilitating the closed-down landfills.

The Ministry of Environment (Department of old environmental burdens) has the general responsibility for dealing with old burdens. As part of a research project financed by the Ministry, the department is currently preparing a new methodology for the categorisation of priorities for the remediation of old environmental burdens. The objective of the project is to update and broaden the existing SEKM database including the tools for the detailed prioritization of the old environmental burdens from an environmental risk point of view. Public hearings were conducted in February 2007. The project is scheduled to conclude this year.

This methodology is not directly focused on the "black landfills" issue, but could be used for categorisation of their risks. It is anticipated that this methodology could also be used as supporting material for the elaboration of standard procedures.

It is anticipated, that the existing SEKM database operated by the Ministry of Environment, will be the basis for the further management (remediation etc.) of old, already closed landfills as well as financing of their potential removal.

Rehabilitation plan Based on the central SEKM database and their own research, the regional authorities have developed their own registers of old environmental burdens and have defined priorities for their remediation. Primarily, closed landfill with extreme high or high risk are eliminated, but there are no specific timetables in place. This process is financed through the regional budgets or the State Environmental Fund. If the original owner of the contaminated area has an agreement with the National Property Fund (currently Ministry of Finance), the defined remediation works can also be financed through that budget. The second possibility for obtaining the money is to submit an application to the State Environmental Fund.

Factors contributing to the existence of and hindering the elimination of illegal landfills

Key factors are considered to be:

- insufficient administrative capacities for regular inspections of all suspected sites, waste producers etc.;
- increased stringency of the conditions for the disposal of waste on landfills, including fee increases for waste disposal;
- absence of legal requirements and relevant implementing rules (procedures, manual, and methodologies) to address the issue of "black landfills".

Summary

Currently, 237 officially known waste landfills are legally operated in the Czech Republic, although between 30-50% are expected to close down by July 2009 at the latest, either because their capacities will be exceeded, or because of lack of compliance with the requirements of the EU Landfill Directive. There are already some 1700 closed landfills registered in a national and regional databases of old burdens.

There is no complete picture at the national level on the incidence of illegal landfills in the Czech Republic. In 2004 a proposal for legislation on the investigation and inventorying of so called "black landfills" was turned down and since then no real attempt on a national basis to deal with the issue has been seen. Capacities at the local level, which is a priori responsible for the removal of illegally dumped wastes, are insufficient. Efforts are undertaken both at the national and regional level to deal with the above-mentioned closed-down landfills. Sites with high environmental risk are prioritised for rehabilitation. To the extent that these old sites may still be used for illegal dumping of wastes, these activities contribute some way to tackling the issue of illegal waste dumping at closed sites.

The main cause for the illegal dumping of waste include the lack of administrative enforcement capacities, especially at the local level, the absence of standard approaches for dealing with the issue and increased pressures on waste disposal due to increased stringencies of legal waste disposal, including increases in disposal fees.

3.1.3 Estonia**Context**

In Estonia, 556 000 tons of municipal waste were generated in 2005, corresponding to about 3% of total waste generated. 370 000 tons were landfilled. The share of municipal waste going to landfill has decreased over the past six years from 87% in 2000 to 65% in 2005.

In 1991, after the collapse of Soviet Union, there were hundreds of landfills in operation in Estonia. Most of the sites were probably legal: established and run in accordance with the laws of the time. Over the last 15 years the number of landfills in operation has decreased dramatically. According to waste reporting of 2000, there were 148 operating landfills of mixed municipal and other non-hazardous waste and 22 internal landfills of industrial waste in enterprises. In a concentrated effort to implement the requirements of the Landfill Directive, most of the sites have been closed down. By the end of 2003, 37 landfills of non-hazardous waste, 10 landfills of hazardous waste and 3 landfills of inert waste remained in operation.

Currently, 30 sites are in operation, of which eight are expected to continue operations after July 2009.

Legal and administrative framework

The main acts governing waste management and the landfilling of waste are:

- the 2004 Waste Act;

- Regulation of 29 April 2004 no. 38 of the Minister of Environment "Requirements for building, use and the closure of landfill", transposing the EU Landfill Directive.

Section 128 of the Waste Act stipulates the chain of responsibility for illegally landfilled waste, primarily aimed at combating illegal dumping of waste, with the primary responsibility of the polluter, subsidiary responsibility of the landowner, and, finally, ultimate responsibility of the municipality, but with a regress possibility vis-à-vis the landowner²³).

Section 54 of Regulation no. 38 lays down a definition of illegal landfill sites. It is a negative definition: all landfills that are not legal are considered illegal. The definition of "landfill" is the same as in the EU Landfill Directive. The definition of "legal landfills" is as follows:

- Legal landfill in operation is a landfill that has an operator. An operator is a person responsible for the operation and monitoring of landfill. An operator must have an appropriate waste permit.
- Legal landfill that has ceased operations is a landfill that was operated, as a principle, lawfully and which does not receive waste after 1 May 2004.

Section 56 of the regulation stipulates the following:

"Taking into consideration, inter alia, Section 128 of the Waste Act, the environmental surveillance agency²⁴ takes measures to prevent further use of illegal landfills and provides a precept for elimination of the landfill. The environmental surveillance agency may instead require tidying up the site if the competent authorities, taking into consideration the condition of the landfill and local particularities, are convinced that the landfill does not present a threat to the environment and human health and that negative environmental impacts from the closed site are negligible".

The primary aim of the provisions is to ensure that the use of small landfills was discontinued after 1 May 2004. According to the Head of the Waste Department of the Czech Ministry of Environment the financing of closure depended on the status of the discontinued site: closure of legal landfills could be (co-)financed by the state but not the closure of illegal landfills.

There are otherwise no standard approaches in place in Estonia governing the identification, investigation, and elimination of illegal landfills.

Institutional set-up and responsibilities

As there is no consistent overall policy or regulation dealing specifically with illegal landfills, the institutional responsibilities are not clearly defined. The

²³If the illegal site contains waste that should be covered by an organized waste management scheme but the local municipality has failed to (sufficiently) develop such scheme, the municipality shares with the landowner the responsibility for elimination.

²⁴ I.e. the Czech Environmental Inspectorate or local municipalities.

following description is based on the general responsibilities of various authorities.

- The Ministry of the Environment has the responsibility to form overall waste policy at the national and regional level. As such, the Ministry would also be responsible for establishing clear guidelines for the identification and investigation of illegal landfills. Furthermore, the Ministry has a coordinating role through its regional departments. Finally, it would be the responsibility of the Ministry to inventorise data on illegal landfills. Local municipalities and the Inspectorate would have to assist by providing information. No inventorying has been carried out in practice. The Ministry and the Central Administration of the Inspectorate have only given scant attention to illegal landfills.
- In principle, the Environmental Inspectorate has the responsibility to identify illegal landfills through regular inspections, including inspections of internal waste storage. The Inspectorate also has the responsibility for preliminary investigations of landfills. In practice the inspectorates investigate only newly discovered sites, rather than making an effort systematically to identify all relevant sites.
- Local municipalities have to provide information to the Inspectorate of any illegal landfills.

Administrative capacities

To the knowledge of the national expert, there is no staff in place in Estonia dedicated to the issue of illegal landfills. Eleven officials work in the Waste Department of the Ministry of Environment and seven in the Waste Bureau of the Environmental Information Centre of the Ministry. In the 15 regional departments there are 15-20 officials working on waste issues (some of them are responsible for several sectors, e.g. air and waste). The Environmental Inspectorate has about 30-40 inspectors available for inspections across different environmental sectors (air, waste, water etc.). The amount of time devoted to waste management issues depends on priorities. Landfills were a priority in 2002-2003. Most municipalities do not have an official specialised in waste issues, some do not even have an official specialised in environmental issues. By contrast, large cities have several specialised officials. Tallinn, for instance, has six officials in the Waste Management Department.

According to the respondents to the interviews the number of inspectors dealing with waste issues should be increased.

Identification of illegal landfills

No specific measures are taken by Estonia to identify illegal landfills.

The view shared by all respondents was that illegal landfills are not a substantive problem in Estonia. In general all landfills are either believed to have permits or have received closure decisions.

However, respondents also believed that random fly tipping is a problem and also acknowledge that it is difficult to draw a clear line between random fly tipping and illegal landfills. It has been stated by stakeholders that there are cer-

tain areas, for example woods in city outskirts, certain areas along roads, old quarries, and also including closed landfills, where waste, primarily municipal waste and construction waste, is regularly tipped by a considerable number of people. Although there is no precise data on this, it appears from the responses to the interview questions that there are several sites where such uncontrolled dumping occurs.

Inventory	There is no nationwide inventory of illegal landfills, although respondents to the interviews believed that some officials in regional authorities - regional departments of the ministry and regional inspectorates - have an overview of illegal landfills in their region and that in most municipalities officials will have more precise information on the existence and number of illegal landfills.
Impact	There is no comprehensive information at the national level on the location, composition and environmental pressures of illegal landfills. The respondents in the Inspectorate were of the opinion that most of the uncontrolled waste disposal occurs on public land, especially the land that is still subject to land reform. The typical composition of waste resulting from illegal dumping is construction waste and municipal waste. However, industrial waste, including hazardous waste, is found occasionally. The environmental pressures are likely higher in North and Central-East Estonia due to relatively unprotected groundwater. One of the respondents was of the opinion that compared with the impacts of contaminated sites or storage sites of obsolete pesticides, the impacts are insignificant. For instance, practically all old legal sites did not dispose of a proper base lining and many of them were situated on limestone and sand deposits; yet, very few instances are known where such landfills gave rise to serious contamination. The lack of noticeable impacts is associated with the small size and diffuse siting of the typical old, closed landfills.
Private entities/municipalities or other public bodies	No specific information was obtained in Estonia regarding whether there are any privately operated illegal landfills. It has been stated that all 30 official landfills have permits. Illegal dumping of waste can be observed on land which can be both publicly or privately owned. It seems likely that there are several internal long term storage areas, which can be considered landfills. That they exist without being addressed by the public authorities, is likely the consequence of insufficient quality of surveillance. Inspectors do not have time to go into details; often the inspection has a formal nature. There is no mechanism/control for checking the quality of surveillance.
Elimination of illegal landfills	The Ministry does not prioritize illegal landfills. No clearly formulated general policy approach towards illegal landfills exists. It appears that landfilling without a permit is not tolerated. The legal approach to combat random waste dumping is through landowners' subsidiary liability. There is also the above-mentioned legal provision in the Regulation on landfills, whereby the competent environmental surveillance authority (the local municipality) has to take relevant measures to prevent further use of illegal landfilling and either eliminate the site by removing the waste or by tidying it up, i.e. bulldozing and covering up the site.

Measures that might be taken to prevent illegal waste dumping at sites formerly used for legal landfilling (e.g. quarries, or closed sites) are fencing, posting signs that forbid waste dumping, cutting off access roads and occasionally guards. Some municipalities arrange and finance (occasional) cleaning up of areas that attract municipal waste. In order to prevent illegal dumping, some municipalities have containers that are emptied at the cost of the municipalities.

Since the composition of illegally dumped waste typically is construction waste and municipal waste, another policy approach has been to enhance the effectiveness of control over waste management at municipal level. The main effort has been the introduction of obligatory organized waste management in municipalities that have more than 1500 inhabitants. Once the management scheme has been set up all the inhabitants are bound to the scheme by law (obliged to pay for regular waste removal). As a result the incentive for uncontrolled waste dumping by the public is expected to diminish considerably. The second step is to set up waste stations for the collection of municipal waste that due to its nature (e.g. waste from construction) and/or size is not adequately covered by the scheme. In practice, less than a third of the municipalities have set up municipal waste management schemes although the requirement came into force in 1998. Also, only around 20 waste stations have been built although the National Waste Management Plan of 2002 required the establishment of 80-100 waste stations.

Rehabilitation plan No general plan for rehabilitation in Estonia exists as there is no evidence of a large number of illegal landfills to be rehabilitated.

Factors contributing to the existence of and hindering the elimination of illegal landfills There are several factors that contribute to uncontrolled dumping of waste. It seems probable that the following factors play a role:

- the ineffective system of collection, transport and disposal/recovery of municipal and construction waste;
- inadequate surveillance of waste management and insufficient landowner surveillance, especially on lands that are still subject to land reform;
- widespread attitude that waste disposal should be virtually free of cost - members of the public often argue that waste disposal costs too much although the cost is very low compared to e.g. the cost of heating or food;
- habit to dispose waste nearby or in certain areas, due to the fact that until recently, hundreds of small landfills existed: it is virtually impossible to eliminate such landfills without eradication of the underlying causes: attitude and insufficient capacity (both in terms of the number of people and their competence).

Summary *Regarding officially known landfills which have been or still are in operation, a rather clear picture has been established of which of these are to close down and which ones are to continue operations after 2009. None of the 30 sites, of which eight are to continue, are considered to be illegal by the Estonian authorities.*

It is acknowledged that illegal dumping of waste occurs, though no overview of the actual size of this problem is established by the authorities at the national level. The uncontrolled dumping of waste occurs inter alia in closed-down old landfills which have not been rehabilitated. Nor is there any systematic information on the location of illegal dumpsites, the composition of the waste dumped and the environmental pressures resulting therefrom.

There are certain legal mechanisms in place to deal with illegal dumping of waste, with the ultimate responsibility of the local level.

An ineffective system of collection, transport and disposal/recovery of municipal and construction waste seems to be the biggest issue causing people to illegally dump waste in Estonia.

3.1.4 Hungary

Context

In Hungary, close to 12 mio. tons of waste were generated in 2004, approximately 11 mio. tons thereof non-hazardous wastes. The volume of municipal waste generated in 2004 amounted to 4.6 mio. tons, of which 85% were landfilled. Waste landfilled in Hungary amounts to around 80 % of all waste generated. The share for non-hazardous wastes landfilled is 80%, the share of hazardous wastes landfilled about 22%.

Waste management in Hungary is governed by the 2002 National Waste Management Plan, covering the period 2003-2008. The plan foresees a shift of waste management from landfilling towards the recovery and recycling of waste and sets specific reduction targets (a reduction of the percentage share of waste landfilled from 2002 levels to 65% in 2008). Regarding landfill installations, ultimately, the plan foresees the establishment of regional landfills, serving at least 100 000 inhabitants each, so that the total number of landfills operating in Hungary should not exceed 100.

According to a 2002 survey conducted under the Phare program, 1367 landfills where operated²⁵ in Hungary, 620 of those without permission. They are stated to have been closed down since then. In the context of a further national review carried out in 2004/2005 on the basis of the Act on Waste, all landfills had to submit a plan for review. As a result of this exercise, currently 178 non-hazardous landfill sites have received a permit for operation, but 125²⁶ will be closed down by July 2009, and 53 will continue operating beyond July 2009, following restructuring. The remaining 569 landfills are stated not to operate according to the knowledge of the Ministry of Environmental Protection and

²⁵ I.e. this number does not include any landfills which, at the time of the survey had already closed down. In fact, according to another source, some additional 1300 landfills were not in operation anymore at the time of the survey, bringing the total number up to some 2670.

²⁶ Those are stated to often lack basic technical protection.

Legal and administrative framework	<p>Water Management²⁷. In all there are stated to be some 2400 landfill sites in Hungary which are non-operating/closed-down, but not rehabilitated yet.</p> <p>Landfilling of waste in Hungary is principally covered by the following acts:</p> <ul style="list-style-type: none"> • 2000 Act on Waste (LIII); • The Decree of the Ministry of Environment No. 20/2006. (IV.5.) on waste disposal in landfills <p>The abandonment, dumping or uncontrolled disposal of waste is prohibited in the Act on Waste, transposing Article 4 (2) of the EU Waste Framework Directive. The Act sets up a hierarchy of responsibility for illegally placed waste (primary responsibility of the owner of the waste, secondary responsibility of the owner of the property; responsibility of local government for wastes abandoned on public grounds within the boundaries of the community including regress provision where the owner of the waste can subsequently be identified). Enforcement of the Waste Act is the responsibility of the local governments.</p> <p>Illegal landfilling has recently been classified as a criminal offence. Criminal law Article 281/A now sanctions illegal landfilling by 3 years imprisonment, illegal landfilling of hazardous waste is sanctioned by 5 years imprisonment.</p> <p>There are otherwise no standard procedures or approaches in place for the identification, investigation, elimination, rehabilitation or prevention of the future emergence for illegal landfills.</p> <p>However, in 2004, the Ministry of Environment prepared a draft rehabilitation program for old deficient landfills, specifying the tasks of operators and local governments with regard to closed landfills²⁸. The program is stated not to have been adopted due to lack of funding for rehabilitation. Nevertheless, the substance developed under this program is used in the context of the implementation of EU financed waste management projects (e.g. under ISPA, Cohesion Funds).</p> <p>Other activities that have been carried out with relevance for the subject matter are described below.</p> <p>According to the responsibilities as set by the 2000 Waste Management Act, the following responsibilities would, in principle, apply²⁹:</p>
Institutional set-up and responsibilities	

²⁷ Hereafter, the "Ministry of Environment".

²⁸ In fact the 2002 Hungarian Waste Management Plan foresees the preparation and implementation of a detailed interventional program for the closure and rehabilitation of "old" landfills, as identified in the context of the above-mentioned Phare survey (finalised in 2002).

²⁹ Although (as elaborated elsewhere) the actual measures that have been taken in practise to identify, investigate, regularise, and restore illegal waste sites are based on ad-hoc rather than a systematic approach, and administrative capacities are limited.

- The Ministry of Environment and Water Management, the Ministry of Local Government and Regional Development and the Ministry of Justice and Law Enforcement would be the competent bodies for preparing comprehensive principles and procedures related to illegal landfills.
- The local governments responsible for the concerned areas would be required to investigate and identify illegal landfills in conformity with the provisions of the aforementioned Act on Waste Management. This flows from the general principle that enforcement of the Waste Act is the responsibility of the local governments. Following the investigation, and, if the abandoned waste may contain components that can be qualified as hazardous, the involvement of the Environmental Inspectorate, i.e. its regional branch (hereafter, the "environmental authority") responsible for the area concerned is provided for.
- As outlined above, the actual elimination of identified illegal waste abandonment is the primary responsibility of the owner of the waste, or, secondarily, if this owner cannot be identified, the owner of the property. If waste is deposited illegally on public grounds, the local government is responsible to eliminate such illegal waste deposit site.
- The environmental authority would be responsible for keeping data on such illegal waste abandonment, provided that an administrative action is initiated. This flows from a Decree about an Administrative Recording System, 2000.

Administrative capacities

There are no resources at the national level dedicated to the issue of illegal landfilling. Nor do local governments and authorities have personnel specifically employed for the detection and elimination of illegal landfills.

It is recognized that due to the nature of the illegal activity, there would be a need for continuous surveillance and patrolling, however, this would require resources that are currently not available to local governments and authorities.

The current practice is that in addition to civil society organisations, foresters, civil guards, field guards and the police are involved in the identification of those placing waste illegally.

Identification of illegal landfills

The following measures of relevance for the purposes of the current study have been taken by Hungary. However, it should be noted that they were not directed at identifying illegal landfill sites, but are part of the Hungarian effort to align to the requirements of the EU Landfill Directive:

- As described above, a 2002 Phare survey revealed the existence of some 1370³⁰ operating landfill sites in Hungary, 620 of those without permission, which according to the Ministry of Environment have been closed down since then.

³⁰ Moreover, at the time of the survey, an additional 1.300 sites had already been closed down.

- Following the 2004/2005 review, currently 178 non-hazardous landfill sites have received a permit for operation, but 125 will be closed down by July 2009. The 125 are stated to often lack basic technical protection but they are not said not to be classified as illegal by the Hungarian authorities until 2009. The remaining 569 landfills are stated not to operate anymore according to the knowledge of the Ministry of Environment.

In addition, according to information provided by the Hungarian NGO ("HUMUSZ") interviewed for the purposes of the study, there has been a systematic assessment of illegal landfilling carried out with the involvement of civil society organisations aimed at identifying illegal landfills in Borsod county. This county accounts for about 10 % of the total land area of Hungary. The sites were identified in the course of the assessment by visits to the sites. The exact coordinates were established and photographs were taken for documenting purposes. The quantity and the composition of the waste, as well as the potentially endangered objects were identified by visual inspection. 3.500 illegal sites were identified as a result of the assessment.

The identified sites range from garbage piles with a size of some cubic metres dumped in ditches and forests to areas that are used more or less regularly for illegal dumping and contain thousands of cubic metres of waste.

Incidence of illegal landfills

It has been underlined by the Hungarian authorities that the number of illegal landfills, and the quantity of waste dumped illegally cannot be defined with precision because there is no definition on the basis of which an illegal landfill may be classified as such. Without this, it has been pointed out; no differentiation may be established between a pile of garbage abandoned by the side of a ditch and an area used as an illegal landfill on a regular basis by those pursuing this illegal activity.

In fact, according to the Ministry of Environment there are no illegal landfills operated in Hungary. If the authorities were aware of their existence, it is stated, they would be closed down immediately. However, it is recognized that there is a problem of "wild dumpsites" where waste is randomly dumped and the clean-up is the responsibility of the local governments.

Nevertheless, it appears possible that a differentiation may be made between two issues in Hungary:

- Firstly, there appear to be a great number of landfills, which, over the past years, have been closed down, and it has been indicated, that at least to some extent such former landfills are continuously used as illegal dumpsites.

In terms of figures, some 2.500 landfills have been closed down over the past years, but there appears to be no knowledge at the level of the Ministry, how many of these "old landfills" continue to be used illegally.

- Secondly, and with a certain overlap, there is a problem of illegal dumping of waste whereby it is difficult to draw a border line between random

dumping where such activity only takes place on a one-off, or limited basis and cases where such activity takes place more frequently at the same site over a longer period of time.

According to the estimate of HUMUSZ based on the experience of Borsod county and another program "Tájsebészet", described in more detail below, the number of illegal landfills in Hungary is around 15.000³¹.

In addition, it is known that some 125 landfills which are currently still in operation do not fulfil the requirements of the EU Landfill Directive, lacking basic technical protection, but having received a national permit³² to continue operation until July 2009³³ when they will be closed down.

Inventory

There is no national inventory in place of illegal landfills. The above-mentioned Administrative Recording System contains only the data of the sites of illegally abandoned waste (including the identification of the abandoned wastes), which have been identified and processed by the (local) authorities, i.e. where authorities have initiated administrative action. However, administrative action having been taken to eliminate such deposit sites, these sites will not necessarily remain sites of illegal waste dumping. Thus, the recording system is not able to provide up-to-date information on existing illegal landfill sites. Only the data related to an illegal deposit of waste which is followed up by local authorities, having initiated administrative action via the owner of the waste can be searched for one by one. However, there is no national database of illegal landfills, or current sites of illegal deposit of wastes.

Impact

According to stakeholders interviewed in Hungary, illegal dumping of waste is significant in the following areas (indicating the types of wastes as well):

- in closed "old" sites (household wastes, construction and demolition wastes, community wastes, batteries);
- in untidy areas and next to roads in the close proximity of large towns and their vicinities (construction and demolition wastes, household wastes, and, less frequently, production wastes);
- in deserted, former industrial areas (construction and demolition wastes, production wastes);

³¹ There is likely to be a (partial) overlap between this number and the number in the previous bullet point. Also, many of these sites are likely to be singular sites of littering or fly tipping, which are, as such not covered by the study.

³² I.e. would not be considered as "illegal" within the meaning of the notion as described for the purposes of the study.

³³ According to the Landfill Directive as interpreted by the European Commission, once it has been determined that a landfill is to close down, the closure has to be effected immediately, and the landfill may not legally receive any waste any longer. This issue, relating to the interpretation of Article 14, is also addressed in more detail in the cross-country analysis below.

- in abandoned surface mining areas (construction and demolition wastes, community wastes);
- in wetlands that are not suitable for agricultural production (construction and demolition wastes, household wastes).

Otherwise, no detailed information is available on the environmental impacts from illegal landfills. According to HUMUSZ, gas emissions may be considered as insignificant as organic waste is rarely disposed of illegally. In their view, the most important issue is the negative aesthetic impact.

Private entities/municipalities or other public bodies

No specific information has been forwarded regarding the extent to which the problem of illegal landfilling covers private entities and/or extends to municipalities or other public bodies. In this context, it should be noted that the information on landfills provided by the Hungarian authorities predominantly appears to relate to municipal non-hazardous landfill sites.

Elimination of illegal landfills

There appears to be no systematic approach in place in Hungary aimed at the elimination of illegal landfill sites. Insofar as the rehabilitation of closed-down "old" landfills is concerned³⁴, the 2004 draft rehabilitation program was aimed at eliminating the environmental risks from such sites, but is not implemented across the board due to the lack of funds.

According to HUMUSZ, non-permitted waste disposal in closed landfills is "not too infrequent". They point out that local governments try to solve the problem with varied efficiency by closing down the roads leading to the landfill site and/or by the enclosure of the sites themselves.

The Ministry of Environment supports the "Tájsebészet" ("Landscape Surgery") Program, implemented since 2001 by civil society organizations. In the context of this program, 1000 sites of illegally dumped wastes have been identified, and 15 % of these sites have been cleaned up to date. The program is managed by HUMUSZ. HUMUSZ invited tenders from NGOs for voluntary efforts for identifying and recultivating sites. Work completed had to be documented and organizations that performed the best were awarded. Several hundred organizations took part in the program until 2006.

In addition to the aforementioned national programs, it has been stated that civil society organizations, schools, and other public organizations conduct campaigns occasionally to detect illegal landfills and to collect waste.

Rehabilitation plan

It follows from the above, that a systematic plan for the rehabilitation of illegal landfill sites, including timetables does not exist. According to the Ministry, local authorities are responsible for the clean-up of sites, but they are not given any guidance (see above, the 2004 draft rehabilitation program has not been adopted), and funding is a problem.

³⁴ Which would only be covered by the study to the extent that they are still continued to be used as sites for illegal dumping.

Factors contributing to the existence of and hindering the elimination of illegal landfills

According to the responses of stakeholders interviewed for the study, illegal landfilling can be attributed to the following factors:

- Environmental awareness is at a very low level. Illegal landfilling is not characterised by strict social objection.
- Local governments are broadly speaking indifferent.
- Huge resources would be required to implement effective control, but they are not available, neither at national nor at the local level.
- Due to the lack of effective control, and, it seems, increased fees for the legal disposal of wastes, a great number of private individuals and enterprises opt for the easier and cheaper way to get rid of their waste by illegal waste dumping. The largest proportion of illegally dumped waste is composed of building, demolition and household waste not collected by the regular municipal waste collection service³⁵. With regard to waste which is not collected by the regular waste collection service, in some cases, lack of information of the waste generators as to where to take their waste is noted to be the cause for illegal dumping.

Summary

There is no complete picture at the national level on the incidence of illegal landfills in Hungary, although the issue is, to a certain extent recognized as a problem in Hungary: illegal random waste dumping is recognized, as is the fact that an unknown number of the thousands of closed down "old" landfills may still be used for illegal waste dumping. The responsibility for enforcement is on the local level, but there is no guidance from the national level, nor is there any funding available, neither at the national nor at the local level. A national rehabilitation program, meant to establish guidelines for operators and municipalities remains at the drafting stage due to the lack of funds.

NGOs have been active, partly financed by the government, to disclose, and partially eliminate, sites of illegal waste dumping.

The main causes for illegal waste dumping are a lack of environmental awareness, lack of sufficient administrative capacities, paired with a certain indifference of local authorities, the wish to avoid fees for legal waste disposal as well as a certain lack of information on how and where to dispose legally of waste not covered by public waste collection services.

3.1.5 Latvia

Context

In 2005, some 716.000 tons of municipal waste were generated of which 560.000 tons was landfilled. This amounts to about 78% of municipal waste

³⁵ Municipalities are responsible to organise the collection of wastes from households and such services are in place nationwide, covering all municipalities. However, municipal solid waste generated by (small) enterprises is not removed within the scope of this public service.

being landfilled in 2005. The share of municipal waste going to landfill has decreased from 93% in 2000 to 83% in 2004.

The main objective of the municipal waste management strategy 1998-2010 is, inter alia, to decrease the negative environmental impact caused by the illegal dumping of waste. The strategy envisages the development of a regional approach to waste management with the construction of 10-12 new regional municipal waste landfills and the improvement of the quality of municipal waste management services, as well as the improvement of the environment through closure and re-cultivation of waste disposal sites.

During the preparation of the strategy, an inventory of dumpsites (site for the disposal of waste, which does not conform to the requirements regarding landfill³⁶) was established. In 1998, it was estimated that 558 dumpsites were operating in Latvia. 75% of the dumpsites were less than one hectare and 77% received less than 1.000 m³ of waste per year. By the end of 2000, 50 dumpsites were closed and re-cultivated.

In 2005, four landfills and 332 dumpsites were registered by the Ministry. Four landfills and 146 dumpsites were in operation with an environmental permit. 186 of the registered dumpsites were closed but not yet rehabilitated.

After 2009, all dumpsites will be closed and by 2012 they will all be rehabilitated. After July 2009, 11 landfills corresponding to the requirements of Directive 1999/33/EC will have a permission to operate; of these, four are already in operation today³⁷.

In the "State Waste Management Plan 2006- 2012", adopted in December 2005, the objective regarding the closure of dumpsites is reiterated as one of the priorities in the implementation of State Waste Management Plan.

Legal and administrative framework

National legislation on waste management and landfilling includes, inter alia, the following:

- Waste Management Act of 2000, last amended in October 2006;
- Regulations "On Requirements for Sitting of Landfills and for management, Closure and Rehabilitation of Landfills and Dumpsites (June 2006); "On issuing, prolonging and annulling of permits for waste management" (May 2006); "On issuing, prolonging and annulling of permits for waste management"(May 2005).

³⁶ The Latvian Waste Management Act of 2000 distinguishes between landfills and dumpsites, whereby landfills dispose of better environmental protection measures than dumpsites. In the view of the consultants, this clearly constitutes a case of non-compliance with the EU Landfill Directive.

³⁷ Many Member States surveyed interpret Article 14 of the EU Landfill Directive as establishing a single deadline, 16 July 2009, at the time of which all existing landfills that do not comply with the requirements of the landfill Directive have to be closed. This issue is discussed in more detail in the cross-country analysis below.

The Latvian Waste Management Act distinguishes between landfills and dumpsites, whereby landfills have better environmental protective measures than dumpsites. The Act requires both operators of landfills and of dumpsites to have obtained the relevant permits for the disposal of waste. As a consequence, dumpsites in the Latvian understanding of the word are not considered per se sites of "illegally dumped wastes" as they would need a permit according to national legislation and would thus not be illegal³⁸.

Latvian legislation contains a prohibition to dispose of waste at places which are not foreseen for waste disposal, i.e. littering or rubbish heaps. Administrative fines can be imposed for breach of the prohibition. They are set by the Latvian Administrative Breach Code and may be imposed by the State Environmental Service inspectors or municipal police. The fines range between LVL 20-500 (EUR 28-700) for private persons and between LVL 100-1000 (EUR 140-1400) for legal entities. In certain cases the criminal procedure for illegal dumping of waste can be applied.

Where the person responsible for illegal waste dumping can be identified, he or she is held responsible for the clean-up of the site. Otherwise, the landowner or the municipality have to take necessary measures to clean up littering or illegally dumped waste.

Institutional set-up and responsibilities

The following institutions are involved in the waste management sector and would, in principle, be responsible for dealing with illegal landfills as follows:

- The Ministry of the Environment would be responsible for the formulation of overall policy/procedures regarding illegal landfills.
- The State Environmental Service and municipalities are in principle responsible for investigating and identifying illegal landfills.
- Municipalities are ultimately responsible for eliminating/regulating illegal landfills once detected in their territory.

Administrative capacities

There is insufficient administrative capacity of environmental protection authorities. The number of regional inspectors is not sufficient. There are eight Regional Boards, with only one or two inspectors each responsible for legal dumpsites control in Latvia. The control of illegal dumpsites is for the greatest part the responsibility of local municipalities, and needs to be improved. In total there are about 540 local municipalities, most of them small and lacking financial and human resources to carry out control of waste management, including control of illegal landfilling. With the implementation of Regional Waste Management Plans (in total for eleven regions) it is hoped that the administrative capacity will be upgraded³⁹.

³⁸ But as noted already above, clearly the Latvian distinction is not in conformity with the EU Landfill Directive and thus a breach of Community law.

³⁹ Up to date four out of the eleven regional waste management plans have been adopted.

Identification of illegal landfills	<p>There are no systematic measures taken in Latvia to identify illegal landfills. However, in the past years an effort has been made to identify and close down landfills with an insufficient level of environmental protection.</p> <p>As noted above, in 1998, it was estimated that 558 dumpsites were operating in Latvia. 75% of those were less than one hectare and 77% received less than 1.000 m³ of waste per year. It was estimated that this type of smaller dumpsites did not cause significant pollution of the groundwater, whilst the rest was recognized as causing potential environmental pollution. The main measure applied to deal with this environmental risk has been to close down these sites.</p> <p>Up to 2005, all except four landfills and 146 dumpsites (all having a valid national permit) have been closed down, although not all have been rehabilitated yet.</p> <p>It is also acknowledged that there are some cases, when in closed but not yet re-cultivated dumpsites, waste is disposed of illegally, as well as cases when in the legally operating dumpsites, i.e. those disposing of a permit⁴⁰, notably located near big cities, the volume of wastes disposed of exceeds the volumes allowed for in the permit.</p> <p>However, this issue is not dealt with systematically at the national level, but is mainly left to municipalities to deal with.</p>
Incidence of illegal landfills - inventory	<p>All currently operating landfills and dumpsites have a permit⁴¹. There are no exact numbers available on those cases where waste is disposed of illegally in closed but not yet rehabilitated dumpsites, although it may be assumed that the location of those is documented. Neither is there any comprehensive information on sites where random waste dumping may have reached such significance so as to have resulted in the emergence of illegal dumpsites: a register of such occurrences has not been introduced.</p>
Impact	<p>It was estimated that the majority of dumpsites identified in 1998 did not cause significant pollution of the groundwater, whilst the rest was recognized as causing potential environmental pollution. Regarding incidences of illegal waste disposal in other locations, mostly due to random waste dumping, there are no sources of information indicating serious environmental pollution or pollution of groundwater.</p>
Private entities/ municipalities or other public bodies	<p>No specific information has been forwarded regarding the extent to which the dumpsites identified since 1998 also include sites operated by private entities. As the exercise was carried out as preparation to the municipal waste management strategy, it is likely that only municipal sites were covered.</p>

⁴⁰ This would be a national permit, but as noted above, the distinction between landfills and dumpsites, and the separate permitting of dumpsites, although they do not fulfil the requirements of the EU Landfill Directive, is not in conformity with EU law.

⁴¹ See previous footnote.

- Elimination of illegal landfills The main measure applied to deal with the environmental risk from dumpsites identified in the 1998 exercise and beyond, has been to close down these sites. However, not all sites are rehabilitated yet.
- The Ministry of Environment has also carried out a review of legal provisions regarding illegal dumping. The main conclusions have been that enforcement of legislation has to be improved, as well as more attention has to be given to public awareness raising activities, and also land-owners and municipalities have to be better involved in solving the issue.
- In addition, a number of awareness raising and clean-up campaigns at various levels are regularly taking place.
- Rehabilitation plan As noted above, sites have continuously been closed down since 1998, but have not always been rehabilitated yet. According to the Latvian Waste Management Strategy, it is intended that after 2009 all dumpsites, including those currently still operating legally under national permits, will be closed and by 2012 they will all be rehabilitated.
- Factors contributing to the existence of and hindering the elimination of illegal landfills The following factors are seen as likely to be contributing to illegal waste dumping:
- Waste management services are not available to everyone. Problems arise especially in the countryside, where people mostly live in single-family houses. Fragmented administrative responsibilities and lack of cooperation between municipalities and commercial waste collectors lead to deficiencies in the implementation system regarding household waste collection from private house-owners. This results in some households avoiding to be served by commercial waste collectors, in order to save on the monthly or annual fees for waste collection. Today, only 30-40% of households have agreements on waste collection in rural areas, in the Riga region the coverage is 50-60%. In general the situation is better in the cities, where more than 80% of population are receiving waste management service.
 - Insufficient control over production enterprises, creating ground for potential illegal dumping of waste.
 - With the introduction of landfills, transportation distances have increased considerably, as well as the price for the disposal of waste.
 - In recreational areas – sea side, water bodies – seasonal fluctuation of tourism causes problems of illegal landfilling and littering.
 - Special systems for the collection of bulky waste in the municipalities are not available.
 - Reconstruction and development activities in the housing sector have been growing in the past years and often construction and demolition wastes are dumped in forests due to lack of construction waste landfills in the nearer vicinity.

- Municipalities are responsible for waste management in their administrative territories, but they do not have sufficient capacity for control/enforcement of illegal waste dumping (municipal police or public inspectors).
- Lack of cooperation programs or projects between municipalities and state environmental institutions (State Environmental Service) about more effective illegal waste dumping control and elimination.
- Penalties for illegal waste dumping may be too low.
- Lack of information about waste management possibilities in the municipality is needed.

Summary

In line with the Latvian municipal waste management strategy 1998-2010, and the State Waste Management Plan 2006-2012, waste disposal sites ("dumpsites") have been registered since 1998. Since then, a great number of those dumpsites have been closed down, although not all of them have been rehabilitated yet. Currently, 4 landfills and 146 dumpsites are in operation on the basis of national environmental permits. All remaining dumpsites will be closed down in 2009 and rehabilitated in 2012. These sites are not considered as illegal landfills in Latvia. However, in the view of the consultants the distinction between dumpsites and landfills in the current Latvian legislation is not in line with the EU Landfill Directive, nor are the permits for these sites in conformity with EU law.

There are no exact numbers available on those cases where waste is disposed of illegally in closed but not yet rehabilitated dumpsites. Neither is there any comprehensive information on sites where random waste dumping may have resulted in the emergence of illegal dumpsites: a register of such occurrences has not been introduced. It was estimated that the majority of dumpsites identified in 1998 did not cause significant pollution of the groundwater, whilst the rest was recognized as causing potential environmental pollution, dealt with by closure of these sites. Regarding incidences of illegal waste disposal in other locations, mostly due to random waste dumping, there are no sources of information indicating serious environmental pollution or pollution of groundwater.

The main reason for the illegal dumping of waste seems to be an ineffective system of waste collection. In rural areas, only 30-40% of the population are covered by a waste collection system, while in urban areas the share is 80%. Increases in the price for waste disposal increase the incentive of households to remain outside public or private waste collection schemes, and disposing of their waste illegally. There is also a lack of certain waste facilities, e.g. for the collection of bulky waste, or the disposal of construction and demolition wastes, and a lack of information on waste management services available. The responsible authorities do not have the necessary capacities to prevent illegal dumping of waste.

3.1.6 Lithuania

Context

The total registered volume of waste generated in Lithuania was approximately 1.3 mio. tons in 2004. Currently only a small quantity of recyclable waste is collected separately and part of it is not suitable for recovery. The part of waste landfilled was 91% in 2004.

There are more than 800 landfill sites existing in Lithuania, out of those, only 300-350 sites are in operation. Not all of the operating sites have a permit. Still, under Lithuanian legislation they are not considered "illegal", if a certain minimum set of information has been provided pursuant to national requirements (see below).

The 2002 national Strategic Plan on Waste Management (last amended in 2005) provides for the closure and regularization of the over 800 landfills that do not meet environmental and public health care requirements, as well as the establishment of new facilities for waste management that conform to legal requirements. The plan foresees the creation of eleven new regional non-hazardous waste landfills and ten regional waste management systems.

Accordingly, key objectives of waste management of relevance for the present study include⁴²:

- by the end of 2011, to close over 800 existing landfills that do not conform to the environmental and public health safety requirements;
- not later than as of the middle of 2009, to dispose of non-hazardous waste only in new regional landfills;
- by 2010, to install the incineration facility of hazardous waste and build a hazardous waste landfill.

At the moment two landfills are operating out of the planned eleven regional landfills. The two mentioned will be enlarged using EU ISPA/Cohesion funding for implementation of regional waste management systems until 2009. The remaining nine regional landfills are being designed or are under construction at the moment. First regional landfills are expected to be opened at the end of 2007; all eleven landfills are expected to be ready for use by 2009.

Legal and administrative framework

The main legislation dealing with waste management and landfilling comprises:

- the Law on Waste Management of 2002;
- the Regulations on the Construction, Operation, Closure and Aftercare of Waste Landfills of 2000, 2001 and 2002.

⁴² Interview Arunas Kundrotas, Lithuanian Environment Minister at <http://www.assises-dechets.org/article74-25-16-en-M--Arunas-KUNDROTAS.html>

As per requirements of the Regulations on the Construction, Operation, Closure and Aftercare of Waste Landfills, the disposal of waste must be prohibited by 16 July 2009 at the latest in landfills that do not conform to the requirements of the Regulations. After having introduced regional waste management systems that allow the possibility to dispose of waste in landfills that conform to EU requirements, the disposal of waste must be immediately ceased in other landfills of the region. All landfills that do not conform to EU requirements must be closed and rehabilitated before 31 December 2011 as per the requirements of the Regulations. The usage of non-complying landfills must be stopped by 2009. The period of two years until 2012 is for final closure and proper rehabilitation. The usage of the non-complying sites would be illegal during those two years⁴³.

The Regulations on the Construction, Operation, Closure and Aftercare of Waste Landfills also provide for a binding procedure to be followed by local municipalities for the provision of specified data (location, operator, status - i.e. closed, or operating, size, waste volumes, waste types etc.) on all landfills that they exploit or that are sited in the territory under their control within 6 months after entry into force of the legislation⁴⁴.

The dumping of waste is prohibited according in line with Article 4 of the EU Waste Framework Directive. This is laid down Article 34 of the national Strategic Plan on Waste Management.

The fines for violation of the requirements of legal acts concerning waste collection and disposal are set in the Administrative Code of the Republic of Lithuania. The maximum fines for illegal disposal of up to one cubic metre of waste are between EUR 200 and EUR 290. They may be increased depending on volumes of waste that are illegally disposed of and on their environmental impact.

Institutional set-up and responsibilities

The following institutions have competences in waste management:

- the Ministry of Environment of Lithuania is responsible for drafting legislation and the National Strategic Waste Management Plan, which is approved by the Government of the Republic of Lithuania;
- regional environmental protection departments under the Ministry of Environment are responsible for implementation and control of the national waste management policy in relevant regions, one of their functions comprising the identification and inventorying of landfills that do not conform to legal environmental requirements;

⁴³ Many Member States surveyed interpret Article 14 as establishing a single deadline, July 2009 at the time of which all existing landfills that do not comply with the requirements of the landfill Directive have to be closed. This issue is discussed in more detail in the cross-country analysis below.

⁴⁴ See above, the regulations date from 2000. All landfills in respect of which the specified data has been provided are not considered illegal in the Lithuanian understanding. Clearly, such national "permit" is not at all in line with EU law.

- municipalities are responsible for the implementation and control of the national targets for municipal waste management. The closure and rehabilitation of non-conforming landfills and aftercare (monitoring) is also their responsibility. Municipalities pursue this function with the help of regional waste management centres.

Administrative capacities

Administrative capacity is considered non-sufficient in Lithuania. There is only one person in the Ministry of Environment of Lithuania directly responsible for implementation of the EU Landfill Directive. Despite the above-mentioned legal responsibilities, there are no persons dealing particularly with landfills in the regional environmental protection departments and municipalities in Lithuania.

Identification of illegal landfills

Illegal landfills are as such not defined in Lithuanian waste management legislation and policy. The current focus is on the establishment of a network of landfills in line with EU requirements. For those purposes the focus has been on the identification of all existing landfills in Lithuania in line with the Regulations on the Construction, Operation, Closure and Aftercare of Waste Landfills, as described above. In that way a regionally-based inventory of landfills has been set up. However, these landfills are not considered as illegal under Lithuanian legislation. Only if the legal deadline of their closure by July 2009 will not be met, will their continued operation be considered illegal.

Incidence of illegal landfills - inventory

More than 800 sites have been identified with less than half of the sites (300-350) in operation. It is believed that all existing landfills are identified in Lithuania. In the Lithuanian understanding, these are legal sites.

Currently there is no central data-base where these sites would be registered. It is expected that it will be possible to provide more detailed information in the Lithuanian report to the Commission regarding the implementation of the Landfill Directive, which will be submitted by 30 September 2007.

Impact

Due to the non-existence of the category of "illegal landfills" in Lithuania there is no information available on environmental pressures of illegal landfills. There is no detailed information of the environmental impact of non-conforming landfills or dumpsites available either.

The majority of landfills in Lithuania do not satisfy basic environmental and sanitary-hygienic requirements. Sites of landfills are often selected without consideration of their impact on the environment. The majority of landfills are established without any engineering preparation, there are no protection dikes of groundwater, the leachate and landfill gas are not collected, there are no boreholes for the control of the quality of groundwater etc. Landfills in small settlements are in a particularly bad state – they are abandoned and mostly illegally established. There is no environmental protection equipment in them. There are no weigh-bridges in any of them to enable control and to register the volumes of waste disposed in them. No monitoring is performed.

Only the main regional landfills live up to certain environmental protection standards.

Private entities/municipalities or other public bodies	According to the national legislation, municipalities were required to provide information and data on all existing landfills within their territory, "in cooperation with the operators of existing landfills and legal persons that own or exploit landfills". Thus, it can be assumed that the landfills identified include both publicly and privately owned landfills.
Elimination of illegal landfills	A range of requirements for rehabilitation and elimination of non-conforming landfills are set in the National Strategic Waste Management Plan and in the Regulation on the construction, operation, closure and aftercare of waste landfills. Following these requirements, local authorities will gradually close the non-conforming landfills on their territories. Measures to close the non-conforming landfills are being taken in most municipalities. It has been stated that technical documentation for the closure of the old landfills is currently under preparation. There is no inventory available on the number of landfills already closed or under closure.
Rehabilitation plan	<p>A timetable regarding the closure of all sites not conforming to the legal requirements is set out in the Regulations on the Construction, Operation, Closure and Aftercare of Waste Landfills, as noted above. Thus, the following timeline is foreseen:</p> <ul style="list-style-type: none"> • 16 July 2009 at the latest: prohibition to dispose of waste in landfills that do not conform to the requirements of the Regulations. The actual timing is determined by the establishment of regional waste management systems that allow the possibility to dispose waste in landfills that conform to EU requirements. Concurrent to that, the disposal of waste must be immediately ceased in other landfills of the region. • 31 December 2011 at the latest: closure and rehabilitation of all landfills that do not conform to the requirements of the Regulations.
Factors contributing to the existence of and hindering the elimination of illegal landfills	<p>The issue of illegal landfills within the meaning of the study is currently not an issue for the Lithuanian authorities. The focus is on closure of existing landfills, which, although not illegal under the terms of Lithuanian legislation, are known not to comply with, sometimes even basic, environmental protection requirements. The lack of administrative capacities is seen as a problematic factor in this process which, as provided by law, is supposed to be finalised by July 2009. Where landfills continue to operate after that date, they would be considered illegal, also under Lithuanian legislation.</p> <p>Another problem is the fact that planning, design and construction of the new regional landfills and implementing regional waste management systems, as well as competitive procedures to select the performers of these tasks is delayed by 1-2 years in most cases. The delay is caused by legal proceedings between the participants and organisers of these competitions or delays of the companies that perform the tasks.</p>
<i>Summary</i>	<i>In Lithuania a register of more than 800 officially known landfill sites has been established. 300-350 of those sites are operating sites. All of these are foreseen for closure by July 2009 at the latest, being replaced by eleven new regional</i>

landfill sites, of which two have already been constructed⁴⁵. For the time being the existing landfills are not considered illegal under Lithuanian legislation, but disposal of waste in these sites will become illegal from the July 2009 deadline. It is believed that all existing landfills are discovered in Lithuania. Measures to close the non-conforming landfills are being taken in most municipalities, but there is no inventory available on the number of landfills already closed or under closure.

Limited administrative capacities and delays in the establishment of new regional waste management systems are seen as problematic issue, and may lead to the continued use of existing facilities in breach of EU law.

3.1.7 Malta

Context⁴⁶

In 2004, approximately 2.5 mio. tons of waste were generated in Malta. Major fractions are construction and demolition waste (88%) and municipal waste (8%). The amount of hazardous waste going to landfill has declined substantially since 1999 (its share is below 1%), and from 2003 this type of waste has been retained on site at the waste generator or exported through private initiative.

There are three principal waste management facilities in Malta currently being operated:

- the Ta' Zwejra Landfill (adjacent to the closed Maghtab site, see below);
- the Qortin Waste Transfer Station;
- the Sant' Antin Solid Waste Treatment and Composting Plant.

Almost all municipal waste is disposed in the Ta'Zwejra landfill site, and minor amounts are separated and treated at the Sant' Antin Solid Waste Treatment and Composting Plant, which, however, is in need of upgrading.

Since 2004, inert waste is to a large part (98%) deposited in approved disused quarries.

Maltese waste management policy is governed by the 2001 Waste Management Subject Plan (hereafter "Waste Management Strategy").

At the time of development of the strategy, there were several existing public landfill sites on Malta and Gozo not designed or operated to waste management standards required by EU legislation and falling well below best practise at the time. According to the 2001 strategy "the current standard of management is

⁴⁵ See the cross-country analysis below insofar as the interpretation of the timelines of Article 14 is concerned.

⁴⁶ The following section is for a large part based on: Malta Environment and Planning Authority, State of the Environment Report 2005, January 2006.

minimal and the landfill sites realistically can only be described as uncontrolled 'dumps'. There were two landfill sites in operation, Maghtab on Malta and Qortin on Gozo. One landfill site, the Wied Fulija site had already been closed. In addition to these there existed a number of unofficial inert waste dump sites on both Malta and Gozo.

The Maghtab and the Qortin dumps were closed in April 2004 in line with the national targets stipulated in the Waste Management Strategy. Instead, an interim national facility was set up at Ta' Zwejra and is currently operational. Another site has been identified as the most suitable site for the development of a long term controlled engineered landfill. Waste from Gozo is transferred to the Qortin Waste Transfer Station and transferred to Malta on a daily basis.

All three old non-operating landfill sites, Wied Fulija, Maghtab and Qortin, are in the process of rehabilitation. Structural Funds have been obtained for capital funding for the rehabilitation of the sites. Site investigations to identify significant environmental impacts were carried out between July and September 2002 and rehabilitation strategies developed (see below for more detail).

Legal and administrative framework

Landfilling of waste in Malta is principally covered by the following acts:

- Legal Notice 337/2001 Waste Management (Permit and Control) Regulations requiring that any waste management facility is covered by a permit
- further regulations of 2002 transposing the EU Landfill Directive 2002 Law on the management of solid and hazardous waste.

The Deposit of Wastes and Rubble (Fees) Regulations of 1997 require, inter alia, that rubble, waste and hazardous waste must be deposited in a licensed waste deposit site. The Litter Act of 1968 is primarily concerned with littering and the control of disposal of domestic waste and makes the dumping of waste in public areas an offence⁴⁷. It has been stated that there are "stiff" penalties in place for the practise of illegal tipping/dumping.

There is no standard procedure in place for the identification of illegal landfills. However, the 2001 Waste Management Strategy acknowledged the existence and problem of non-permitted/controlled landfills in Malta and set the stage for the development of a further strategy to rehabilitate these sites.

Institutional set-up and responsibilities

The Ministry for Rural Affairs and the Environment (in the following, "Ministry of Environment") is responsible for the formulation of the overall policy /procedures regarding illegal landfills. The Malta Environment and Planning Authority (MEPA) is responsible for investigation and identifying illegal landfills, inventorying illegal landfills as well as eliminating or in other ways dealing with illegal landfills.

⁴⁷ European Topic Centre on Resource and Waste Management, Country Fact Sheet Malta, September 2006, at http://eea.eionet.europa.eu/Public/irc/eionet-circle/etc_waste/library?I=/country_fact_sheets/maltapdf/_EN_1.0_&a=d

In practise, WasteServ Malta Ltd. is responsible for organizing, managing and operating integrated systems for waste management in the context of the waste management policy and plan of the Government of Malta, including the rehabilitation of the above-mentioned three old and closed waste sites.

Administrative capacities

It is considered by the Maltese authorities (MEPA) that there is in general sufficient capacity to deal with illegal landfills, although WasteServ Malta has stated that there is a general lack of both human resources and experience and the representative of the NGO has stated that law enforcement is always a problem on Malta.

Identification of illegal landfills

As noted above, illegal landfills, i.e. uncontrolled dumpsites were identified in 2001 in the context of the Waste Management Strategy. Subsequently, site investigations were carried out at the three identified sites on the basis of which rehabilitation studies were developed. The strategy also referred to the existence of a number of unofficial inert waste dump sites on both Malta and Gozo.

According to all three stakeholders interviewed, including an NGO, they do not have knowledge of any illegal landfills in Malta over and above the description of the issue in the Waste Management Strategy and they do not consider the issue a problem. Problems with illegal tipping/dumping of waste were mentioned, but were not highlighted as a major environmental problem.

Nevertheless, according to the 2005 State of the Environment Report, the Cleaning Services Department of the Ministry for Resources and Infrastructure indicated that 20 000 tons of material illegally dumped across the Maltese Islands was cleared during 2004, and 10 000 tons between January and August 2005. In relation to the above-mentioned figures, this represents a share of 0.8% of all waste generated in Malta in 2004.

Incidence of illegal landfills - inventory

Apart from the identification of the three uncontrolled dumpsites in the 2001 Waste Management Strategy and the acknowledgement of several unofficial inert waste dump sites on both Malta and Gozo, there is no information on illegal landfill sites on Malta.

Impact

With regard to the three closed sites, their impact has been described in great detail in a study "Rehabilitation Strategies for Maghtab, Qortin and Wied Fulija landfills". The 2005 State of the Environment Report summarizes the situation as follows:

"... the principal hazards presented by the sites are: aerial emissions from combusting or smouldering wastes; the stability of the waste masses, the impacts on local groundwater quality from leachate during the rainy season, and landfill gas generation. The magnitude of these hazards is dependant on the size of the sites and the age of the waste deposited."

A thorough environmental assessment has been carried out for all three sites.

In Malta, there is no evidence of environmental impact from random waste dumping or other types of illegal landfilling.

Private entities/municipalities or other public bodies	No specific information has been forwarded regarding the extent to which the problem of illegal landfilling covers private entities and/or extends to municipalities or other public bodies. All landfills referred to above are public waste management sites.
Elimination of illegal landfills	<p>Rehabilitation of the three old non-operating landfill sites is in progress, being carried out by WasteServ Ltd.</p> <p>Structural Funds have been obtained for capital funding for the rehabilitation of these sites.</p> <p>Immediate and long-term actions for rehabilitation have been identified and will be implemented in phases.</p> <p>The rehabilitation at each of the three sites will broadly involve:</p> <ul style="list-style-type: none"> • installation and maintenance of gas / emission control systems; • minor re-profiling of the waste mass; • gradual installation of a rehabilitation cover; and • development deployment of passive recreational after-uses on secured parts of the site. <p>Regarding the above-mentioned unofficial inert waste dump sites, it appears that since 2004, inert waste is to a large part (98%) deposited in approved disused quarries⁴⁸.</p>
Rehabilitation plan	According to the 2005 State of the Environment Report, quoting information from WasteServ, due to the large size of the sites, it will take some time for the sites to be completely restored and returned to beneficial use. In fact is envisaged that it may be perhaps as much as 30 years in the case of Magthab before the full rehabilitation of each site is accomplished.
Factors contributing to the existence of and hindering the elimination of illegal landfills	The Maltese do not see illegal landfilling as a major problem. However, random illegal dumping is recognized as an issue and efficient enforcement is considered a problem.
<i>Summary</i>	<i>Malta's focus is very much on the rehabilitation of three major old dumpsites identified in the 2001 national Waste Management Strategy. A major project is underway to rehabilitate these sites with EU funding. Inert waste, formerly disposed of in unofficial inert waste sites is, since 2004, disposed of in approved sites of disused quarrie, although the status of these approvals in relation to the EU Landfill Directive is not clear. Otherwise, illegal landfills are not consid-</i>

⁴⁸ It is not clear, however, whether this approval would be in conformity with EU requirements under the EU Landfill Directive.

ered an issue by any of the Maltese stakeholders interviewed. Nevertheless, there are records for 2004 and 2005 that considerable amounts of waste materials were illegally dumped on Malta. These wastes have been collected by the Cleaning Services Department of the Ministry for Resources and Infrastructure. Legislation appears to be in place prohibiting such dumping, but lack of enforcement is an issue.

3.1.8 Poland

Context

According to the Polish National Waste Management Plan 2007-2010 (adopted in December 2006), close to 12 mio. tons of municipal waste were generated in Poland in 2004. At the same time, around 1.7 mio. tons of hazardous waste were generated. Whereas practically all municipal waste was landfilled, only roughly 19% of the hazardous waste was landfilled.

The previous National Waste Management Plan 2002-2006 (of October 2002) indicated the necessity to eliminate landfills of municipal waste which do not fulfill legal requirements as one of the main goals⁴⁹.

The Plan did not identify illegal landfills of waste other than municipal landfills as a problem necessary to be addressed. The current National Waste Management Plan encompasses the objective to "put the issue of landfills of municipal waste in order". It envisages bringing all landfills in compliance with legal requirements, or - in instances where that would not be possible - closing a given landfill down.

According to figures listed in an Annex to the current National Waste Management Plan there are some 760 municipal waste landfills in Poland. The landfills other than municipal landfills have not been inventorised yet.

The process in Poland serving to ultimately ensure full compliance of all landfills with the requirements of the EU Landfill Directive is complex and inconsistent with EU requirements. The 2001 Act Introducing the Environmental Protection Act provided for a procedure requiring all landfill operators by 31 December 2002 to obtain a permit under the 2001 Waste Act⁵⁰. At the same time, all existing landfills in Poland were covered by an obligation to carry out a so-called environmental audit, to be ordered by an administrative decision at the level of Starost or Voivode⁵¹ by 30 June 2003. However, the two obligations were not linked, so that the permit requirement was independent from the environmental audit and its findings. Following the results of the audit, the Starost or Voivode were under an obligation

⁴⁹ I.e. encompassing both encompass both landfills operating without a permit and landfills not complying with their permit.

⁵⁰ Those decisions are in practise valid for 10 years.

⁵¹ I.e. at the county level (Poviat, where the Starost is the executive authority) or the regional level (Voivode, where the Marshal is the executive authority).

- either to recognise that the landfill was complying with all requirements, thus undertaking no further action;
- to close the landfill;
- to issue an adjustment decision, ordering the instalment of additional equipment;
- or order rebuilding of the landfill, imposing an obligation to apply for a construction permit.

In addition to the deadlines already mentioned above, the relevant legislation also foresaw a deadline of 31 December 2003 for obtaining a decision on additional equipment or rebuilding, to be implemented by the operator by 31 December 2005 and 31 December 2009 respectively. Legally, non-respect of these deadlines resulted in a situation where the full requirements (corresponding to those of the EU Landfill Directive for new landfills) would apply, to be supervised by the Vovoidship regional inspectors for Environment Protection. According to the letter of the law, this meant that non-complying landfills should be ordered to cease operations until fulfilment of the requirements can be ensured, or to close permanently. As noted above, issuance of the permit was independent from the subsequent audit and decisions following therefrom, so that even if a landfill did not comply with an administrative order to upgrade, it was still permitted. Withdrawal of the permit is subject to a separate procedure resulting from the monitoring of the landfill and conclusion of its non-compliance with requirements not correspondent to those under the EU Landfill Directive.

Most importantly, in practical terms the process of adjusting existing landfill sites to current legal requirements corresponding to the EU Landfill Directive has never been coordinated at the national level. Therefore, there is no reliable information on its effectiveness.

Legal and administrative framework

Landfilling of waste in Poland is principally covered by the 2001 Act Introducing the Environmental Protection Act and the Act on Waste from the same year. It appears that the Polish definition of landfills differs from the one under the EU Landfill Directive⁵². Consequently, some sites in Poland are not legally

⁵² In the view of the national expert assembling the Polish country study, the Polish transposition of the definition of a landfill is not in conformity with the Directive, thus leading to a different scope of application of the requirements of the EU Landfill Directive. In accordance with the provisions of the 2001 Waste Act, a waste landfill is “a built structure intended for the landfill of waste”. With respect to the definition of the Landfill Directive (“*landfill means a waste disposal site for the deposit of the waste onto or into land*”), the meaning has been doubly narrowed. The definition does not cover waste landfill sites other than built structures in the meaning of the 1994 Construction Act. The gap is partly compensated for by the separate regulations on underground landfills. However, this does not solve the problem, since waste disposal onto land may also take part outside of built structures (e.g., *surface impoundment of waste*). Also, it should be noted that in Poland the storage of waste is never considered landfilling, not sufficiently taking into account the second indent Article 2 (g) of the EU Landfill Directive.

covered by the requirements set by the Directive. Thus, not all sites requiring a permit pursuant to the Directive, will necessarily require a permit under Polish legislation. In those cases, lack of a permit does not make them illegal from the viewpoint of Polish legislation, although it is clear that Polish legislation is in breach of EU requirements. By contrast, in those cases where a given site is covered, there are - legally speaking - no major differences regarding requirements according to national law on the one hand and the requirements as set out in the Directive on the other hand.

Polish legislation distinguishes between underground and above-ground landfills:

- There are four official underground landfills where process/interstitial waste as well as non-hazardous waste originating from the exploration for and abstraction of minerals is landfilled. As regards underground landfills, the specific requirements of the EU Landfill Directive are not fully reflected in the separate legal framework governing these underground landfills⁵³ and they are not covered by the obligation to bring all landfills in line with the Directive's requirements by July 2009 at the latest. In practise, the operation of these underground waste disposal sites is seen as an issue very much apart from above-ground landfilling and stakeholders interviewed, when talking about landfills, have not made a connection between those underground landfills and the issue of (illegal) landfilling in general.
- As regards above-ground landfills, as indicated above, the Polish definition of a landfill does not comply with the EU definition, thus not all Polish landfills are covered by requirements pursuant to the EU Directive.

The Polish Environmental Protection Act prohibits the deposit of waste on a site not intended for such purpose (in the Polish understanding this includes random dumpsites, and all sites not having obtained a construction permit as a landfill), and attaches sanctions to non-compliance therewith.

Administrative fines may apply to the landfilling of waste on a site not intended for the purpose (max. EUR 8,50 per ton per day, starting from the day of identification until the day of removal by the holder⁵⁴). Fines in relation to landfills not in the possession of a valid national permit are max. EUR 3/ton/day until the decision is obtained. In addition, the storage of waste without a permit for waste recovery or disposal may be fined with max. EUR 3/ton/day. These fines will be imposed by the Voivodships. In addition, in the latter two cases fines may also be imposed by the Inspectorate of Environmental Protection at max. EUR 5/ton/day.

⁵³ Broadly speaking, mining legislation applies rather than waste legislation and administrative competences lie with the mining authorities, coinciding only partly with the authorities responsible for landfills in general.

⁵⁴The fine is imposed on the holder of the waste, with a presumption of the landowner being the holder, and thus held responsible.

There are no standard procedures or approaches in place for the identification, investigation, elimination, rehabilitation or prevention of the future emergence for illegal landfills.

However, currently the Polish Ministry of Environment coordinates a large-scale initiative, carried out with relevant regional authorities and the Inspectorate for Environmental Protection, aimed at identifying all landfills, enabling also the identification of illegal landfills. Once such landfills are identified, further steps will be planned in order to eliminate them. Within this action, internal guidelines for authorities involved in the identification of landfills were prepared by the Ministry (but are not publicly available). Similarly, in the subsequent phase of elimination of illegal landfills, it is intended to prepare relevant guidelines and to disseminate them to the relevant authorities.

Institutional set-up and responsibilities

The Ministry of Environment is overall responsible for the above-mentioned initiative regarding the identification of illegal landfills. It is also responsible for the formulation of guidelines both on the identification and elimination of landfills.

Generally speaking, as regards implementation in the waste management area, most decision-making powers fall, alternatively, under the competences of the Voivodes and Starosts, depending on the magnitude of activities. The relevant regulations determining competence in a given case are fairly complicated and, in practise, this gives rise to difficulties in determining competences.

The Inspectorate of Environmental Protection is responsible for the monitoring and control of waste management operations. It is directed by the Chief Inspector who is subordinated to the Ministry of Environment. The Inspectorate is also represented in the regions, where it is subordinated both to the Chief Inspector but also to the Voivode.

As regards cases where waste is found to be deposited illegally, the head of the local government (Gmina) has the power to intervene. In practise, this competence is rarely used, both because it is difficult to identify the addressee of such decision (the waste holder), because, ultimately, the Gmina itself has to finance the clean-up of a site and also because intervention of the local government may give rise to competence conflicts with other entities which have enforcement competences vis-à-vis waste holders.

It is notable that under the now repealed 1997 Waste Act, the Gminas were obliged to identify all waste sites, including uncontrolled dumping sites, inventorying them. This activity was to be carried out during 1998. However, no coordination measures were ensured. In particular, no collective inventory was developed at national level, nor was any sanction envisaged for failure of Gminas to establish the inventory. In practise, many local governments ignored the obligation and, where they were established, in practise these inventories did not play any major role.

Administrative capacities

There is a perception that the public administration in Poland lacks capacities, both in terms of the staff available, financial resources and know-how.

Identification of illegal landfills

As mentioned above, the Ministry currently coordinates a large-scale initiative, which started in spring 2006, aimed at identifying and subsequently eliminating illegal landfills. Currently, all existing landfills are being identified. For each landfill, an information sheet is to be filled in by the relevant authority. The information sheets are to provide, inter alia information on administrative decisions, including permits, issued for a given landfill, which would allow identification whether it is legal, pursuant to Polish national legislation, or not. This phase is to be finished in 2007. At present, no detailed information on the status is available. For the purpose of the planned identification, the following understanding of the notion of legal landfill has been stated to apply by the stakeholders of the Ministry of Environment and Chief Inspectorate for Environmental Protection (thus delineating also illegal landfills):

- landfills for which the above mentioned permit under the 2001 Waste Act has been issued, and either one of the adjustment decisions (also mentioned above, i.e. requiring additional equipment or rebuilding), and a localisation decision including a construction permit, and a permit for the use of a built infrastructure⁵⁵.

Separate from this initiative, it has been stated that the Chief Inspectorate for Environmental Protection is in the process of preparing guidelines regarding monitoring compliance as part of the responsibility of regional inspectorates. These guidelines are said also to address the issue of illegal landfills.

Incidence of illegal landfills

Currently, no reliable data is available on the occurrence of illegal landfills in Poland at the national level⁵⁶. It is expected that it will become available as the above initiative is being implemented. This initiative covers all landfills, but on the basis of the information to be provided it is expected that it will be possible to identify those landfills which do not have the required permits pursuant to national legislation. It should be noted, however, that the exercise does not serve to systematically identify illegal dumpsites in the Polish understanding (i.e. instances of waste deposit on a site not intended for the purpose).

A regional example

An example of an inventory drawn up in 2002 as a result of a datasearch at local authorities in one region (the Voivodship of Szczecin), the below table illustrates the numbers of landfills complying and not complying with the national legislation at the time of the datasearch. Environmental risk assessments were carried out on all sites in order to prioritise the restoration/closing down.

⁵⁵ The latter two permits are granted under separate legislation not specific to waste management.

⁵⁶ Although it is likely that such knowledge exists at the regional level, the Voivodships.

Table 3.3 Landfills in Szczecin, Poland, 2002

	Landfills not in compliance with national legislation in 2002				Sites in compliance with national legislation in 2002
	no bottomliner no leachate system	no bottomliner + leachate collection	bottomliner no leachate collection	bottomliner leachate collection no gascollection	
Sites for inert waste	9	3			7
Sites for non-hazardous waste	33	7	6	13	12
Total (90 sites)	42	10	6	13	19

Inventory

There is no national inventory of illegal landfills in place. There is a central database under the responsibility of the Environment Ministry on waste generation and management, and in principle also including information on the administrative decisions issued to landfills, building on reports from Vovoidships, which also keep separate databases. Neither the regional nor the national databases are publicly accessible. Also, the database is not fully reliable, otherwise there would not be a need for the current initiative aiming at the identification of landfills and their permitting status pursuant to national legislation. It has been stated by the Ministry of Environment that the central database will be updated following the finalisation of the current initiative.

Impact

Similarly, there is currently no comprehensive information in place on the impact of illegal landfills⁵⁷. However, it is stated that in the second phase of the current initiative, landfills which will be identified as illegal, will be subjected to environmental audits in order to identify their environmental impacts. Those landfills, which cannot be brought into compliance with the legislation, will be eliminated.

Private entities/municipalities or other public bodies

No specific information has been forwarded regarding the extent to which the problem of illegal landfilling covers private entities and/or extends to municipalities or other public bodies. In this context, it should be noted that regularly the Starost or Vovoide will tolerate municipal waste landfills managed by local governments, also when they are operated illegally, or they will legalise them, although they should be closed down. This is done based on public interest consideration (no alternative "legal" disposal possibilities) combined with poor financial conditions of local governments.

Elimination of illegal landfills

It is foreseen that in the course of the second phase of the current initiative of identifying landfills and their permitting status, thus allowing also for the identification of illegal landfills, and following an audit of those determined illegal, those landfills, which cannot be brought into compliance with the legislation will be eliminated. To this end, the Inspectorate for Environmental Protection

⁵⁷ Again, it is not unlikely that such information is more readily available at the regional and local levels.

and relevant regional authorities will issue relevant administrative decisions. They will do so on the basis of guidelines which the Ministry will establish for the benefit of the regional authorities.

Rehabilitation plan It follows from the above, that a systematic plan for the rehabilitation of illegal landfill sites, including timetables does not exist. As regards sites of illegal waste disposal, the local level is ultimately responsible for the clean-up of sites, but in practise this does not happen.

Factors contributing to the existence of and hindering the elimination of illegal landfills The existence of illegal landfills within the meaning described above, i.e. not disposing of the relevant national permitting requirements may be attributed to:

- the absence of a nationally co-ordinated and enforced program for bringing Polish landfills in compliance with the EU Landfill Directive;
- incorrect transposition of the requirements of the EU Landfill Directive, in particular its definition of landfills, and, more generally, a complex and in-transparent legal framework;
- a complicated division of competence in the scope of decision-making and control;
- the absence of an efficient supervision over the local and regional level.

A generally low level of environmental awareness is mentioned as an additional factor.

Summary *There is no information at the national level on the incidence of illegal landfills in Poland. Random illegal dumping is recognized as an issue. This is an issue that according to the legal framework is predominantly up to the local level to tackle. In practise, however, the relevant regulations are not enforced. Moreover, there is no clear picture at the national level regarding the number and permitting status of landfills in Poland. So far, Polish legislation and practise has insufficiently dealt with the issue of bringing all landfills established prior to 2001 in line with EU requirements. This is not least due to complex divisions of administrative responsibility and inconsistent and intransparent substantive legislation and regulation. It may thus be assumed that there is a substantial number of landfills, mainly municipal landfills, operating in Poland which are not in line with the current Polish requirements, leave alone, the requirements under the EU Landfill Directive. The Ministry of Environment is currently conducting an initiative which is aimed at bringing more clarity to the issue by identifying legal and illegal landfills in a first stage (to be concluded in 2007) and aiming at eliminating them in a second stage, for which guidelines will be elaborated. Due to the complexities of the division of responsibilities and lack of efficient enforcement at the local and regional levels, despite the political will at the central level to tackle the issue, it is by far not certain whether the current initiative will result in any real improvements of the situation.*

3.1.9 Slovak Republic

Context

In 2005, roughly 1.6 million tons of municipal waste were generated in the Slovak Republic. 9% thereof were landfilled.

Currently, there are 161 landfills in operation with a permit (status as per 31 December 2005), of those, 110 landfills have obtained a permit to continue operations beyond 2008. They include 12 landfills for hazardous waste, 131 landfills for non hazardous waste and 18 landfills for inert waste.

Prior to the year 2000, when many landfills started to be commissioned, and a massive construction of new landfills started, thousands of landfills were in operation in the Slovak Republic. According to some information, about 8.000 were registered in 1990s. According to another source, about 5.000 landfills existed in Slovakia before the year 2000, most of them very small, serving the needs of the local municipalities only.

Today, there is no national overview on the exact number and location of old sites but it is believed by the Ministry of the Environment that each district environmental office or municipality has a good knowledge about the status of old landfills on their territory.

Legal and administrative framework

Mainly the following legislation provides the legal framework for waste management and landfilling in Slovakia:

- Act No. 223/2001 Col. on Waste;
- Act No. 17/2004 Col. on Charges for Waste Disposal at Landfills;
- Order of Ministry of Environment SR No. 283/2001 on the Execution of Some Provisions of the Waste Act as amended.

There is no separate regulation focused on waste disposal at landfills and the term "illegal landfill" is not mentioned in any primary or secondary legislation. "Illegal landfilling" is mostly understood as the disposal of waste not in compliance with the provisions of the national legal framework.

The dumping of waste is prohibited in line with Article 4 in the EU Waste Framework Directive. This is laid down in the 2001 Act on Waste.

The Act on Waste provides for the responsibility of the person having illegally dumped the waste to provide for the removal and subsequent recovery or disposal of the waste at his or her own cost. If the person cannot be identified, the district authorities⁵⁸ have to ensure the disposal of the waste at their own expense. Where the waste is municipal waste, responsibility is given to the relevant municipality. Both district authority and the municipality are entitled to subsequently claim removal expenses from the person primarily responsible where it can be identified.

⁵⁸I.e. local waste management authorities.

Institutional set-up and responsibilities

The following institutions have competences in waste management:

- The Ministry of Environment is responsible for the formulation of overall policy approaches (as described in the Waste Management Plan of the Slovak Republic) and of primary and secondary legislation
- Regional offices are regional authorities in matters of state administration in waste management. They prepare issue, update and publish the regional waste management plans and hold public hearings of draft plans. Regional offices are bodies of state supervision in waste management and the appeal authority for complaints against decisions of district offices in the region.
- District offices are local authorities in waste management. They prepare issue, update and publish district plans and hold public hearings of draft plans. They approve waste management plans of producers and municipality plans not reaching beyond the territory of the district. District offices approve project documents for closure, reclamation and monitoring of landfills.
- Municipalities are responsible for all waste generated within the respective municipality. Municipalities prepare waste management plans. In matters of state administration in waste management they investigate offences in waste management and provide information to waste holders on the location and operation of waste handling installations in the municipality. Municipalities must provide for an area where citizens can deliver separated municipal waste materials free of charge.

Regarding more particularly the issue of illegal landfilling (i.e. understood as the landfilling of waste in breach of national legislation), the following responsibilities are relevant:

- Regional and district Environmental Offices play a key role in investigating and identifying illegal landfills in co-operation with municipalities, which are responsible for issuing generally binding regulation specific for each municipality, including detailed waste management procedures.
- The most important responsibility for inventorying illegal landfills lies with district environmental offices.
- Responsibility for eliminating/regulating illegal landfills including their detection is shared by the owner of the property, the operator of the landfill or the person identified and the state administration body according to the Act on Waste.
- If the owner, keeper or tenant of the property discovers that waste has been deposited on his/her property in contradiction to the Act on Waste, he/she shall be obliged to inform the district authority and the municipality without any delay.

Administrative capacities

The issue of illegal landfills is being dealt with by the public waste management administration as part of their general competence.

At the national level the number of persons dealing more specifically with landfill issues is as follows:

- Ministry of Environment – one person
- Slovak Environmental Agency – two persons
- Slovak Environmental Inspection – two persons

The Slovak Environmental Inspection has 35 inspectors in all, but there is no separate division with dedicated responsibilities, e.g. the inspection and monitoring of landfills only (i.e. all do everything).

At the regional level there are eight Regional Environmental Offices where mostly one or two persons each are responsible for waste management, including landfills. In addition, there are eight self-governing offices of regions (upper territorial units) in Slovakia responsible for the general development of the regions, which also have environmental departments dealing with waste management.

There are four regional offices of the Slovak Environmental Inspection dealing with IPPC issues and also responsible for landfill operation permitting and inspections. Including the headquarters, there are 42 IPPC inspectors in Slovakia dealing also with landfills.

At the district levels there are 47 district environmental offices controlling waste management, where about 50 staff are responsible for waste management, including landfills.

Each bigger municipality has an environmental department in its administrative structure where, at least one person is responsible for waste management, including landfills. There are 2 920 municipalities in Slovakia and it can be assumed that approximately half of them has an environmental department in its self-government structure.

According to the stakeholders involved in the study the administrative capacities are considered to be sufficient.

Identification of illegal landfills

There are not systematic measures in place for the identification of illegal landfills. According to stakeholders, there is no evidence of illegal landfills in Slovakia.

However, it is recognized that there are some problems with so-called "black landfills", i.e. sites of random illegal waste dumping, e.g. close to field roads, gardens, cemeteries, rivers or brooks, where people from time to time pile up waste from households, gardens or waste from construction. Municipalities are responsible and mainly deal with this issue at their own expense. These prob-

lems of "black landfills" are however, not registered systematically as this is dealt with solely at municipality level⁵⁹.

Data about landfills reported by waste operators as well as waste generators is processed centrally in the information system on waste management in the Slovak Environmental Agency – Centre of Waste Management in Bratislava (COHEM). The same data is available at the Ministry of Environment of the Slovak Republic – Department of Waste Management and each environmental office has data on all landfills in the relevant area. However, this only concerns operating landfill sites.

As noted above, there is no national registry in place either on the exact number and location of old sites but it is believed by the Ministry of the Environment that each district environmental office or municipality has a good knowledge about the status of old landfills on their territory. Also, it has been stated that the Ministry of Environment is going to work on a systematic registration of old landfills.

Incidence of illegal landfills	With neither "black landfill sites" nor old sites of waste disposal currently registered at the national level, there is no information on the environmental incidence of either sites of random illegal waste disposal, nor the continued use of old sites as possible sites for illegal dumping.
Private entities/municipalities or other public bodies	Nor is any specific information available on the share of publicly/privately owned sites of illegal waste disposal.
Elimination of illegal landfills	The issue of "black landfills" is not mentioned in the national Waste Management Plan for the period 2006 – 2010, as it is mostly considered a local phenomenon. Municipalities try to find out the best approaches to avoid the situation that a municipality has to clean-up a site at its own expense, including the development of user-friendly waste management systems, awareness-raising initiatives etc.
Rehabilitation plan	The numerous old non-operating landfills - likely in their thousands - have not been closed down nor rehabilitated yet because of lack of finance. The situation is improving as EU funds are used also for the purposes of landfill closure and rehabilitation.
Factors contributing to the existence of and hindering the elimination of illegal landfills	The reason for the existence of illegal landfills in terms of "black landfilling" seems to be a lack of knowledge nationwide of the size of the problem as well as how to deal with it. No initiatives nationally have been initiated to deal with "black landfilling". In terms of old closed down landfills knowledge is also missing on the actual number of sites. How much waste is actually still illegally dumped at these old closed down sites is also unknown.

⁵⁹ To the extent that these sites remain insignificant, and limited to random "one-off" waste dumping, they would not fall within the scope of the study.

Summary

There are currently 161 officially operating waste landfills in the Slovak Republic. All these landfills have relevant permits and approved conditioning plan. 110 sites are expected to continue operation after 2009.

An unknown number of old non-operating landfills still exist, potentially in the thousands. There is currently little knowledge about the number, status and impact of these at the national level. Furthermore, most municipalities face the problem of "black landfilling", i.e. sites of random illegal waste dumping. No national initiatives are in place to combat this problem.

3.1.10 Slovenia

Context

In 2005, approximately 800 000 tons municipal waste were collected by public waste management companies in Slovenia. About 80% of this waste was landfilled⁶⁰. In the same year, over 5.5 mio. tons industrial waste was generated, over 5.4 mio. tons thereof non-hazardous wastes. Around 1.2 mio. tons of the total industrial waste was landfilled, the vast majority internally⁶¹, at the site of the enterprises.

An inventory from 1999 revealed the existence of 83 landfill sites⁶², thereof 23 industrial sites and 60 municipal waste sites. According to the Ministry of the Environment, it is expected that 23 sites, thereof 19 sites for non-hazardous wastes (14 municipal waste sites and 5 industrial waste sites), one hazardous industrial waste site and 3 industrial inert waste sites, will continue operation after 2009. It is planned that after 2008, 14 centres for municipal (non hazardous) waste will be established. A new operational program dealing with the establishment of such regional infrastructure is currently under preparation. There are 37 landfill sites which have already received a national permit providing for continued operation, subject to technical adjustments, until 31 December 2008, at which time they will close. The others are in the process of acquiring the required national permits and are, in the meantime subject to regular reporting and monitoring as sites which have already received a national permit.

Illegal dumpsites were not included in the 1999 inventory.

Legal and administrative framework

Waste management and landfilling in the Republic of Slovenia is mainly governed by the following legislation:

- the Environment Protection Act, (OJ RS, No. 41/2004, 39/2006, 49/2006, 66/2006);
- Rules on the management of waste, (OJ RS, No. 84/1998, 45/2000, 20/2001, 13/2003, 41/2004);

⁶⁰ Statistical Office of Slovenia, at

http://www.stat.si/pxweb/Database/Environment/27_environment/02_waste/27061_waste_removal/27061_waste_removal.asp

⁶¹ See at http://www.stat.si/eng/novica_prikazi.aspx?id=463

⁶² 81 of these sites were in operation.

Institutional set-up and responsibilities	<ul style="list-style-type: none"> • Decree on the landfill of waste, (OJ RS, No. 32/2006). <p>Responsibility for waste management in Slovenia is distributed so that:</p> <ul style="list-style-type: none"> • The Ministry of Environment and Spatial Planning would be responsible for the formulation of overall policy/procedures regarding illegal landfills and for investigating and identifying illegal landfills. The Ministry would also be responsible for inventorying illegal landfills. • The Ministry of Environment and Spatial Planning together with the Environmental Agency and the Inspectorate for Environment (inspection and supervision) is in principle responsible for eliminating or in other ways dealing with illegal landfills. • In case, when the originator of the illegal dumping of municipal waste is not known, the elimination of the site is the obligation of the local (municipality) level, in particularly when municipal waste is illegally disposed of. The inspection on the basis of local (municipality) regulations is in the responsibility of municipal inspectors. However, in practise, almost no or very little of the municipal waste is dumped illegally. <p>In case of illegal dumping of non-municipal waste (e.g. dumping of waste from small companies, construction waste) the inspection and sanctions are under the competence of the Republic. The framework for the regulation on this subject is The Environmental Protection Act (OJ RS, No. 41/2004, 39/2006, 49/2006, 66/2006). Based on this Act, regulations that deal with individual types of waste (e.g. the management of waste oils, packaging and waste packaging, batteries, construction waste etc.) were enacted. In case of illegal dumping of this type of waste republic inspectors from the Inspectorate for environment and spatial planning are responsible for the inspection and sanctions.</p>
Administrative capacities	On the basis of the interviews carried out for the study, the administrative capacity to deal with the issues of illegal landfills is sufficient.
Identification of illegal landfills	<p>Besides the measures taken in 1999 to identify landfills in general, no measures are documented in Slovenia aimed at systematically identifying illegal landfill sites.</p> <p>Illegal dumping of municipal waste is not considered a big issue in Slovenia. It is recognized that illegal dumping of construction waste and soil occurs to some extent, but there is no information on the overall size of this issue. Especially in the karst area of Southern Slovenia it is stated that construction waste and soil are used - illegally - in order to level out the area in order to improve land use, although the areas in question are in many cases protected⁶³.</p>
Incidence of illegal landfills	The landfills registered have either already received national permits to operate (until 2008), or they are in the process to receive such permits. Regular report-

⁶³ According to the stakeholders interviewed for this study, waste is not dumped *into caves* in this Karst area.

ing and monitoring is obligatory for these sites, and they are under the same level of supervision by the Inspectorate for Environment and Spatial Planning as those landfills that have already acquired national permits. Thus, although not necessarily fully complying with the requirements of the EU Landfill Directive, these officially known sites are not considered illegal in the Slovenian perspective.

A few studies have been conducted regarding wild dumpsites but no inventories of illegal dumpsites exist, although there is some evidence for the existence of such sites⁶⁴.

Impact

The currently existing landfills, not considered illegal pursuant to national legislation, are still in the stage of adapting their operations to new limit values and regulations. Currently the biggest problem is a relative high amount of biodegradable municipal waste going to landfill, and consequently high amounts of organic material in the leachate, which are the main reasons that the environmental permits for some particular sites have not been issued yet.

Estimates of environmental impact of the currently existing landfills, not yet up to the standards as required by the EU Landfill Directive, include the following:

Table 3.4 *Level of environmental impacts - Slovenia*

	High	Medium	Low
Groundwater pollution	10%	30%	60%
Soil pollution		30%	70%
Gas emissions	10%	50%	40%
Surface water pollution	10%	50%	40%
Effects on Human Health	10%	40%	50%

Private entities/municipalities or other public bodies

23 of the officially registered landfill sites are industrial sites, the remainder municipal sites - although no information is available how many of these sites under each category are operated by private, how many by public operators. There is no information at all on illegal dumpsites.

Elimination of illegal landfills

There are no measures in place to deal with illegal landfills. With regard to the officially registered sites, which, although legal in the Slovenian understanding, do not yet comply with EU requirements, they are permitted under national law to operate until the end of 2008: after the inventory of 83 landfills was established in 1999, operators were given either the opportunity to continue operation until 2008, or after 2009, subject to the acceptance and implementation of a technical adjustment program to get a permit issued in line with national legislation (valid until 31 October 2007 for IPPC installations and until 31 December 2008 for others). Otherwise the operators were obliged to accept a technical

⁶⁴ See minutes of the meetings of an event regarding landfilling in Slovenia, in the framework of the Commission-funded project "Information Exchange and Awareness Raising" at http://www.bipro.de/waste-events/doc/si_outcome_minutes.pdf, page 2.

adjustment program in view of getting a closure decision for closure until 31 December 2008. It is expected that some 23 sites will continue operations after 2009.

In order to prevent the illegal dumping of waste, the Inspectorate for Environment and Spatial Planning performs inspections on waste management based on a yearly work plan, and governed by the inspection priorities identified in cooperation with other Inspectorates. It has been stated that currently an action is running in cooperation with the Inspectorate for Agriculture on illegal waste dumping.

Rehabilitation plan

As in the understanding of the interviewed Slovenian authorities, illegal landfills are not an issue, there are no plans for rehabilitation. All 83 officially known sites will be closed and rehabilitated in due time.

Factors contributing to the existence and hindering the elimination of illegal landfills

Slovenia is a relatively small country. The areas that suit the criteria for landfill locations according to the legislation is very limited. Thus, shortage of disposal capacities is one of the main reasons for the continued presence and operation of the existent landfills, although they do not fully live up to EU requirements.

Summary

All 83 officially known waste landfills are legally operated in Slovenia. All these landfills have either the relevant permit, the required closure decision or are in the process of getting an approval from the authorities. None of these are considered to be illegal.

Illegal dumping of municipal waste is not considered a big issue in Slovenia. On the other hand illegal dumping of construction waste and soil occurs to some extent though there is no information on the overall size of this problem. Especially in the karst area of the southern Slovenia construction waste and soil are used illegally to levelling out the areas in order to improve land use in spite of the fact that these areas are in many cases protected. To date, no systematic initiative has been undertaken to deal with this issue, the focus being on gradually establishing a waste management infrastructure in line with EU requirements.

3.2 Cross-Country Assessment

3.2.1 Types of illegal landfilling

As described above (Section 3, introductory part), the notion of illegal landfills remains difficult to delineate.

However, it is possible, on the basis of the information received from the Member States covered by the study, to identify a number of types of illegal landfilling, or illegal landfills. Overall, a differentiation can be made between *sites* established with the purpose of depositing waste and the *activity* of illegal waste dumping resulting in the emergence of sites of some significance that would fall within the notion of illegal landfills.

Sites established with the purpose of waste disposal

In all Member States covered by Task 1, inventories have been established to register all existing landfill sites, in the course of implementing the EU Landfill Directive, whether permitted or not. Typically, this process included all officially-known landfill sites, established as sites for the disposal of waste, but often not locations of random illegal waste dumping, where such illegal waste dumping has led to the emergence of sites of some significance. Also, at least in some cases (e.g. in **Poland**) there is doubt as to whether the national exercises carried out to inventorise landfills have indeed been efficient enough so as to comprise all relevant sites, having depended on data flows from local and regional levels, which, at least in the case of Poland, has not been effectively coordinated and followed-up at the national level.

In all Member States covered, the process has already led to the closure of certain sites, while others have remained operating under some kind of national permit, or, at least some kind of national recognition⁶⁵, although these permits are often not in line with the requirements of the EU Landfill Directive. This also includes countries (e.g. **Cyprus**) where it has been recognized that all landfills thus inventorised will eventually be closed down, concurrently with the establishment of new EU-compliant landfill sites. In one country (**Malta**), all previously operating sites have been closed down and are now in the process of rehabilitation.

Typically, the Member States do not consider those inventorised sites, as illegal sites, as the continued operation of these sites is considered in accordance with national legislation. As the study focuses on illegal landfill sites as sites not having a permit pursuant to national legislation, they would also not be seen as illegal for the purposes of this study, although, as mentioned above in the individual country summaries, it is often recognized by the countries themselves that these landfills are not (yet) EU-compliant. Also, at least in some cases (e.g. **Lithuania**) legal provisions prohibit the disposal of waste in those landfills after 16 July 2009 (i.e. the end of the transitional period for existing landfill sites according to the EU Landfill Directive). After that date, these landfills would thus - at least in principle - also be illegal pursuant to national legislation.

Closed sites continued to be used for illegal dumping

In several Member States (e.g. **Lithuania, Latvia**) cases of closed landfills (but not yet rehabilitated) appear to be more or less systematically registered. As such, they are not covered by the terms of reference that exclude closed, but not yet rehabilitated landfill sites. But these sites are of relevance for the study to the extent that such closed sites are still used for the dumping of waste. The continued use of those landfills for the dumping of waste, whether or not tolerated by local municipalities, must be considered as illegal, and the landfill sites thus considered as illegal landfill sites. Indeed, this is as a rule also recognized by the Member States concerned, although there is not a clear picture in any of the Member States of how many of these closed sites are actually continued to be used for illegal dumping.

⁶⁵ This is the case in Lithuania, where although none of the currently operating sites has a permit, they are considered legal, basically by virtue of their registration.

It also appears that the term "closure" as used by Member States, does not necessarily imply, that, as is required by the EU Landfill Directive, certain closure procedures have been followed, nor is there necessarily a uniform understanding in Member States speaking of "closed sites", of what closure implies in technical terms, e.g. fencing, closing-off access roads, covering-up etc. In accordance with the EU Landfill Directive, Annex 1, surface sealing in terms of 1 meter of top soil is required as part of the correct closure of the site. It appears that in some Member States the term closure only means cease of operations, combined perhaps with some efforts of fencing and closing access roads.

Finally, it should be noted in this context, that the "closed" sites reported by Member States in many cases do not only refer to sites that were closed in the context of implementing Article 14 of the Landfill Directive, but also to sites that may have been closed prior to the entry into force of the Landfill Directive, e.g. in **Estonia** and **Hungary**.

The activity of waste dumping

According to Article 4 (2) of the EU Waste Framework Directive, Member States shall take the necessary measure to prohibit the abandonment, dumping or uncontrolled disposal of waste. Thus, all these activities, in the following described as "dumping"⁶⁶, are to be considered as illegal. They result in the emergence of dumpsites, whereby the following cases may be distinguished:

- *Sites of random illegal dumping*, or, referring to the wording of the terms of reference to this study, sites of littering or random fly-tipping, i.e. "one-off" incidences resulting in random waste heaps of mainly municipal waste, although there may also be cases of random dumping of production waste or construction and demolition waste. According to the terms of reference, the study was not intended to address problems of litter abuse or random fly tipping and, consequently, this type of waste dumping is not covered systematically in this report. Nevertheless, interviews carried out with stakeholders indicate that this problem appears to be not insubstantial in terms of volume⁶⁷, but minor in terms of environmental impact, though very difficult to quantify. This is e.g. stated in **Latvia** and **Estonia**⁶⁸.
- *Permanent illegal dumpsites*, i.e. sites emerging from the illegal dumping of waste by a larger number of people and over a larger period of time. This may be the case in quarries, woods, at riverbanks, or any other site where, over time, singular incidences of random dumping at the same site

⁶⁶ By contrast, the terms of reference for the study refer to litter abuse and fly tipping. It is submitted that those activities would also be comprised by Article 4 (2) of the Waste Framework Directive.

⁶⁷ E.g. in Malta (see above), where the Cleaning Services Department of the Ministry for Resources and Infrastructure indicated that 20000 tons of material illegally dumped across the Maltese Islands was cleared during 2004, and 10000 tons between January and August 2005. According to the calculations of the consultants, this represents a share of 0.8% of all waste generated in Malta in 2004.

⁶⁸ This is a common problem which is also faced in the "old" Member States. In Denmark, a campaign for waste collection was carried out in spring 2007 by a Danish NGO. Nationally, 184 tons of mixed waste and 174 tons of cans were collected in one day.

lead to the emergence of a dumpsite. Some but not all Member States have inventories which include such kind of dumpsites.

Clearly, and this has also been underlined by some of the Member States, the borderline between sites of random illegal dumping and illegal dumpsites cannot always be clearly drawn, as there is a large grey area. The significance of the site⁶⁹ is certainly a factor, but the notion of significance itself leaves wide margins of interpretation.

Infilling with demolition and construction waste

Finally, in some Member States (e.g. **Slovenia, Estonia**) instances of systematic dumping of demolition and construction waste or contaminated soil in larger areas for landscaping purposes which may fall within the notion of illegal landfilling are observed. However, none of the Member States have reported any systematic registration of this type of illegal waste dumping.

Types of illegal landfills covered by this study

The various types of illegal landfills documented in this study can also be illustrated by the following figure. The area between the red dashed lines illustrates the coverage of the study.

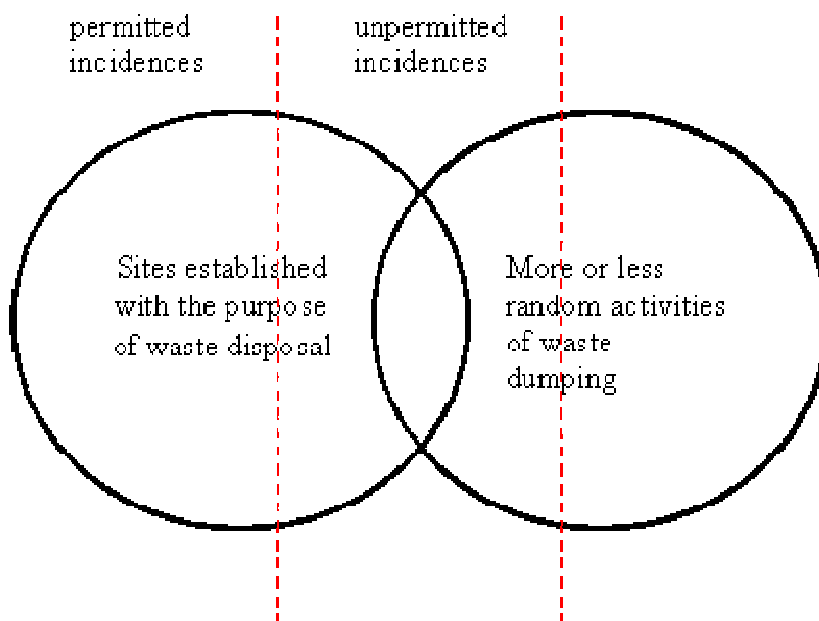


Figure 3.1 Illegal landfills - illustration

⁶⁹ As also referred to in the terms of reference for the study, speaking of "other significant unpermitted and uncontrolled landfilling" (emphasis added).

Incidences in the left circle of the figure are better documented than incidences in the right circle. While inventories of landfills to close down⁷⁰ or to continue operations in compliance with the Landfill Directive are in place in most Member States, registration of illegal waste dumping is virtually non-existing, at least at the national level, in all Member States.

3.2.2 Legal and administrative framework

All Member States have transposed the EU Landfill Directive⁷¹. Illegal landfills as such are not defined in any national legislation, with the exception of **Estonia**, which defines illegal landfills as all sites that are not legal.

Framework for landfill sites to reach compliance with the EU Landfill Directive

Most Member States have plans or strategies in place in order to achieve compliance of existing sites with the EU Landfill Directive, including the closure of sites. These plans or strategies include an inventory of landfill sites. In several Member States (e.g. **Hungary**, **Latvia**) the closure of landfills has already started⁷², but in all Member States, landfill sites continue to be operated, which have some sort of national permit, or are in the process of obtaining those, but are not necessarily compliant with the EU Landfill Directive. In most cases, it is foreseen that they will be close at the end of 2008 or in 2009, concurrent with the availability of "fully-compliant" landfill capacity.

As can be seen in Section 3.2.4, all Member States, except **Poland**, have projections in place on how many sites will be in operation after 2009.

As appears from the above country summaries, the process of bringing existing landfills in line with EU requirements varies from Member State to Member State, and in the view of the consultants, it is highly likely that it is not always in line with the requirements of Article 14 of the Landfill Directive.

In the case of some Member States, where the closure of sites is already an integral part of the strategy, usually a date of rehabilitation of these sites is also foreseen. This is e.g. the case in **Lithuania** (final date for rehabilitation of all old sites is 2012) **Cyprus** (2010) and **Estonia** (2012). Plans for rehabilitation are further discussed in Section 3.2.6 below.

Framework for managing illegal waste dumping

Regarding illegal waste dumping, as mentioned above, most Member States have transposed Article 4 (2) of the Waste Framework Directive. Regularly, fines may be imposed. In most cases, national legislation imposes the responsibility to deal with those instances of illegal waste dumping on local municipalities. Where the originator of the illegal waste cannot be identified, the landowner will be held responsible for the removal of the waste, and where the waste is illegally placed on public land, the municipality itself will have to fi-

⁷⁰ Or having already been closed down.

⁷¹ However, as explained above, the study did not comprise a systematic compliance check of national transposing legislation. In some cases, e.g. Poland, or Lithuania, we have noted clear instances of non-compliance where we have come across them.

⁷² In some cases as early as in the 1990's, e.g. in Estonia.

nance the clean-up (**Czech Republic, Estonia, Hungary, Poland, Slovenia**). The main difficulty in enforcing the provision, including the imposition of fines, is the impossibility in most cases to identify the person responsible. Thus, private landowners will be reluctant to inform the authorities of the incidence of illegal waste dumping. In the case of public land-ownership, the financial burden is a deterrent factor for the municipality to actually handle the problem.

Approaching illegal waste-dumping, an example from the Czech Republic

In the Czech Republic, a proposal for an amendment to the legislation was put forward in 2004 but was rejected.

The proposed amendment stipulated, inter alia, that any site of illegal waste dumping reported by the municipality within a period of three months after date of entry-into-force of the act, would be characterised as an "old burden". Characterising the dump as an old burden would release the municipality from paying the costs of rehabilitation. The act would also establish a register of random waste dumping.

However, since the proposal has been rejected, no other framework for managing random waste dumping has been introduced.

The Czech proposal seems to be the most profound attempt of a legal and administrative strategy for identifying and eliminating illegal waste dumping.

3.2.3 Institutional system

While the registration of landfills for closure or continued operation, as part of the overall strategy to bring landfills in line with the requirements of the Landfill Directive is almost always coordinated at national (ministerial) level⁷³, the legal responsibility of identification and elimination of illegal dumpsites is most often the responsibility of the municipalities. This is e.g. the case in **Estonia, the Czech Republic and Slovenia**. It can also be seen that in some Member States the responsibility for the illegal dumping of waste also depends on the waste type. In **Slovenia**, illegal dumping of municipal waste is the responsibility of the municipality, while illegal dumping of other waste types is the responsibility of the Inspectorate for Environmental and Spatial Planning. The investigation of illegal landfills in **Hungary** is the responsibility of the local governments. Investigation of sites of hazardous waste disposal is, however, the responsibility of the Environmental Inspectorate.

⁷³ With the clear exception of Poland, however, where to date, the process has been insufficiently coordinated at the national level. Currently, an initiative is going on in Poland attempting to rectify this situation.

Table 3.5 Responsibilities regarding illegal landfills⁷⁴

Member State	Competence	Administrative unit
Cyprus	Overall policy and legal transposition	Ministry of Interior
	Inventory of sites	Ministry of Interior
	Identification and elimination of illegal waste dumping	Inspectorate services
Czech Republic	Overall policy and legal transposition	Ministry of the Environment
	Inventory of sites	Ministry of the Environment
	Identification and elimination of illegal waste dumping	Municipalities
Estonia	Overall policy and legal transposition	Ministry of the Environment
	Inventory of sites	Ministry of the Environment
	Identification and elimination of illegal waste dumping	Municipalities
Hungary	Overall policy and legal transposition	Ministry of Environment (and Ministry of Local Government and Regional Development, Ministry of Justice)
	Inventory of sites	Environmental Inspectorate
	Identification and elimination of illegal waste dumping	Local governments (but Environmental Inspectorate for hazardous sites)
Latvia	Overall policy and legal transposition	Ministry of the Environment
	Inventory of sites	N/D
	Identification and elimination of illegal waste dumping	State Environmental Service/municipalities
Lithuania	Overall policy and legal transposition	Ministry of the Environment
	Inventory of sites	Regional environmental protection departments
	Identify and eliminate random waste dumping	N/D
Malta	Overall policy and legal transposition	The Ministry for Rural Affairs and the Environment
	Inventory of sites	The Malta Environment and Planning Authority
	Identify and eliminate random waste dumping	N/D
Poland	Overall policy and legal transposition	Ministry of the Environment
	Inventory of sites	Ministry of the Environment
	Identify and eliminate random waste dumping	Local government

⁷⁴ In this and the following tables, N/D signifies: no data/information available, whereas N/A signifies: not applicable.

Member State	Competence	Administrative unit
Slovakia	Overall policy and legal transposition	Ministry of the Environment
	Inventory of sites	Regional offices/ District offices
	Identify and eliminate random waste dumping	N/D
Slovenia	Overall policy and legal transposition	Ministry of Environment and Spatial Planning
	Inventory of sites	Ministry of Environment and Spatial Planning
	Eliminate illegal landfills	Municipalities (municipal waste)

3.2.4 Identification and numbers of illegal landfills

A massive trend towards regionalization of waste landfills can be observed in all Member States, resulting in the closure of many small local landfills and the emergence of fewer large landfills at the regional level. Broadly speaking, on the basis of figures provided by Member State stakeholders, over the next two years almost 2.000 sites will still need to be closed down⁷⁵ or raised to EU standards in the ten Member States covered by Task 1, while more than 300 new sites are planned for construction. Even though the process of establishing new sites has been launched several years ago, and although some Member States are clearly more advanced than others, it seems highly unlikely that, across the board, all ten Member States will succeed in complying within the July-2009 deadline of the Landfill Directive.

Only **Latvia** and **Malta** have reported that they have sites operating today which comply fully with all requirements of the Directive and can continue operation after 2009⁷⁶.

Poland as the only Member State, has not reported any numbers of expected sites to continue operation. There is in fact a substantive lack of information on the numbers of all existing landfills in Poland, whatever their status. The Ministry of Environment is currently conducting an initiative to identify legal and illegal landfills (to be concluded in 2007) and, in a second step, to eliminate illegal landfills (no timing known). In the view of the national expert, it is however not certain at all, whether the current initiative will result in any real improvement of the situation in Poland.

As can be seen from Table 3.6, national inventories have been made in all Member States besides Poland.

⁷⁵ This figure does not include the number of landfills that are already reported as closed down by Member States. 1947 sites are operating with some kind of national permit or approval today.

⁷⁶ Other Member States might also have sites operating today which are in full compliance but this has not been reported.

Most Member States are of the view that all officially-known landfills, having been registered in the process of bringing existing landfills in line with EU requirements, are legal. E.g. in **Lithuania** more than 800 sites are registered of which a large proportion does not have an environmental permit and will never get one before they are closed down. They are however identified/inventorised by the national legislation and in accordance with the authorities they are not illegal. Only Cyprus considers the identified 113 sites as illegal, but more than 50 sites continue operations until new fully compliant landfill capacity has been built.

Table 3.6 *Inventories of landfills in Member States*

Member State	Inventories
Cyprus	Inventory of 51 operating sites and 62 non-operating sites - all considered "illegal" but continuing to operate until new fully compliant capacity is available.
Czech Republic	Inventory of 237 officially known legally operating sites Database of more than 1.500 old closed down landfills, contaminated sites etc.
Estonia	Inventory of 30 officially known legally operating sites. Knowledge of more than 100 closed down sites.
Hungary	Inventory of 178 officially known legally operating sites, 569 non-operating sites and 620 sites recently closed down (additional 1300 sites closed down prior to 2002).
Latvia	Inventory of 4 landfills and 148 "dumpsites" in operation and 186 non-operating "dumpsites", all considered legal.
Lithuania	Inventory of more than 800 sites, dumpsites, locations of random dumping, old closed down landfills etc. 300-350 in operations, not all with permit, but none of them considered illegal by virtue of their registration.
Malta	Inventory of 3 closed down dumpsites (currently in the process of rehabilitation) and one legally operating landfill
Poland	Estimate of 760 municipal waste sites legally operating today, no comprehensive national inventory.
Slovakia	Inventory of 161 officially known legally operation sites
Slovenia	Inventory of 81 officially known legally operating sites and 2 non-operating sites.

Although most Member States dispose of information on the number of already closed landfills⁷⁷, it is usually not known at the national level, how many of those are still used for illegal dumping of waste.

⁷⁷ As mentioned above, this may include both landfills that have been closed down in the implementation of Article 14 of the Landfill Directive, as well as sites closed down prior to that. Also, the notion of closure does not necessarily comply with the term as used in the context of the Landfill Directive.

There is also some uncertainty in some Member States whether the national processes of identification of landfills actually covered all sites, or whether only "officially known" sites were included.

Therefore, Table 3.7 overleaf does not contain numbers of illegal landfills as such⁷⁸.

⁷⁸ A table showing the numbers of sites with and without permit (thus legal and illegal according to the notion initially used for the delineation of the scope of the study) could also have been shown. However, the term "permit" not having been defined it is likely to be misleading: for instance a closure decision by a Member State leaving a site some years to close down is in some Member States considered a permit.

Table 3.7 Numbers of landfills, legal and illegal

Member State	Sites approved for continued operation	Sites expected for continued operation	Sites currently operating expected to close down before 2009	Sites legally operated today	Non-operating	Sites closed down recently	Total number of known sites
Cyprus	0	4 ⁷⁹	51	51 ⁸⁰	62		113
Czech Republic	N/D ⁸¹	110	125	237			>1.500
Estonia	N/D	8	22	30		>100	
Hungary	N/D	53 ⁸²	125	178	569	620	1.367 ⁸³
Latvia	4	11		148		186	336
Lithuania	0	11	300-350	300-350			800-1.000
Malta	0	1		1 ⁸⁴		3	
Poland	N/D			760			760 ⁸⁵
Slovakia	N/D	110 ⁸⁶	51	161			
Slovenia	0	23 ⁸⁷	58	81 ⁸⁸	2		83

Incidences of illegal waste dumping

The numbers in Table 3.7 do not systematically reflect incidences of illegal waste dumping. For example, in **Lithuania** more than 800 sites are registered of which 300-350 sites are actively receiving waste. Among those, it is stated by the Ministry of the Environment, are incidences of litter abuse, random fly tipping, contaminated sites but also just badly operated dumpsites⁸⁹ with or without a closure decision. Regarding **Slovenia** and **Slovakia**, the numbers in the table exclusively refer to nationally permitted sites for the landfilling of waste, reflecting that no systematic information on illegal waste dumping is available. A very rough guess from a stakeholder in **Slovakia** mentioned about 5.000 existing sites of illegal waste dumping based on a NGO survey. In the

⁷⁹ Newly constructed sites

⁸⁰ All sites in Cyprus are considered illegal.

⁸¹ N/D signifies: no data/information available.

⁸² Current sites; in all it is expected that the total number of landfills in Hungary should not exceed 100.

⁸³ Plus 1.300 sites not in operation anymore in 2002; the NGO interviewed for the study estimates that there are in all about 15.000 illegal landfill sites in Hungary.

⁸⁴ Interim facility; plus an unspecified number of approved quarries for the disposal of inert waste..

⁸⁵ Only sites for municipal waste.

⁸⁶ 81 sites have received IPPC permit, 27 applications have not been processed yet.

⁸⁷ 14 centres for municipal (non-hazardous) waste are expected to operate after 2008, the rest are industrial sites, sites for inert waste and sites for hazardous waste.

⁸⁸ 37 sites have received a closure decision without having a permit. 36 sites have received a permit for operation until 2009.

⁸⁹ "Dumpsites" within the meaning of the national (not EU-compliant) legislation, see above.

Czech Republic the register of officially known landfills in operation is supplemented by the much larger databases at national and regional levels of old environmental burdens among which are more than 1.500 closed landfills (some of which may still be used for illegal dumping). In **Hungary** it is stated by the NGO stakeholder included in this study that the results from a survey in one county representing 10% of the total land area of Hungary, documented 3.500 illegal waste dumping sites. On that basis, it is estimated by the NGO that there is a total of 15.000 illegal waste sites in Hungary. The sites could be everything from garbage piles to areas that are used more or less regularly for illegal waste dumping and containing thousands of cubic metres of waste. In **Estonia**, a register has not been introduced as it is believed that illegal dumping only exists in the form of litter abuse.

3.2.5 Environmental impact from illegal landfills

Information on environmental impacts differs. In some cases, detailed studies of single site cases (**Malta**⁹⁰; similarly in **Cyprus**⁹¹) are in place. In the case of other Member States (e.g. **Estonia** and **Latvia**) overall estimates of the general potential impact of illegal landfills have been provided.

Furthermore, some Member States focus on the impact from landfill sites (**Cyprus**) while other Member States focus on the impact from illegal waste dumping (**Latvia**).

Environmental impact of closed landfill sites

Regarding closed (but not yet rehabilitated) landfill sites⁹², some Member States have conducted site-specific environmental audits in order to prioritize further rehabilitation measures. This is for example the case in the **Czech Republic**, where a central database of old burdens covering also closed down landfills defines five categories of risk for the environment as a basis for prioritizing their remediation. Another example is **Cyprus**, where impact assessments have been carried out for the ten largest sites identified. In **Malta**, detailed impact assessments have been carried out with EU funding for the three sites already closed.

In other Member States, the information about the impacts of closed sites are less specific.

Environmental impact of illegal waste dumping

Regarding illegal waste dumping, the significance of its environmental impact is unclear. Some Member States are of the opinion that the impacts from illegal waste dumping are minor (**Estonia, Latvia, Malta**), while the majority of Member States have no information on the issue. In **Hungary**, NGOs have documented the impact of a certain number of illegal waste sites (in a broad sense, including instances of random waste dumping, i.e. littering).

⁹⁰ With regard to sites that have been closed down and are now subject to rehabilitation.

⁹¹ Detailed impact assessments have been made for the 10 largest of identified illegal sites which are to be closed down.

⁹² Their impact appears important, as - see above - in an unknown number of instances, already closed-down landfill sites continue to be used for illegal waste dumping.

The following table records some of the estimated (potential) impacts of (illegal) landfills.

Table 3.8 *Environmental impact of illegal landfills*

Member State	Environmental impact mentioned
Cyprus	<p>The study on illegal landfills showed that serious environmental impacts have resulted over the years of operation of the landfills. The major environmental and health concerns that were identified include:</p> <ul style="list-style-type: none"> • Sub-soil wastewater drainage • Underground transport of landfill gas • Odour • Landfill gas fires and explosions • Landfill fires usually incurred in order to reduce the volume of waste • Animal grazing. The landfills are not fenced thus it is rather common for herds to be entering the waste disposal areas.
Czech Republic	<ul style="list-style-type: none"> • Regarding to the identified potential risks, the most significant one is the contamination of soil, groundwater as well as surface water. • Where mainly household waste was previously stored, the risk of air emissions was also stated.
Estonia	<ul style="list-style-type: none"> • The typical composition of waste resulting from uncontrolled dumping is construction waste and municipal waste. However, industrial waste, including hazardous waste, is found occasionally. • The environmental pressures are likely higher in North and Central-East Estonia due to relatively unprotected groundwater. • Compared with the impacts of contaminated sites or storage sites of old pesticides the impacts are insignificant. • The lack of noticeable impacts is associated with the small size and diffuse siting of the typical old landfills.
Hungary	<ul style="list-style-type: none"> • Gas emissions may be considered as insignificant as organic waste is rarely disposed of illegally. • The most important issue is the negative aesthetic impact.
Latvia	<ul style="list-style-type: none"> • It can be assumed that illegal waste dumping mainly consists of littering. There are no sources of information indicating serious environmental pollution or pollution of groundwater. • Landscape degradation • Soil pollution • Groundwater pollution.
Lithuania	<ul style="list-style-type: none"> • In the territory of Vilnius municipality, four landfills were closed in the period of 1979-1990 and partly regularised. Municipal, construction and demolition and other waste was stored in these landfills. The pollution of groundwater is traced in the territories of these landfills but according to the data available there is no hazard to the sources of drinkable water.

Member State	Environmental impact mentioned
Malta	<p>The principal hazards presented by the sites are:</p> <ul style="list-style-type: none"> • Aerial emissions from combusting or smouldering wastes. • The stability of the waste masses. • The impacts on local groundwater quality from leachate during the rainy season. • Landfill gas generation.
Poland	<ul style="list-style-type: none"> • No information available.
Slovakia	<ul style="list-style-type: none"> • Environmental impacts of closed down landfills have not been investigated comprehensively, but it is estimated that landfill gas and leachates from landfills entered the environment in dependence of local conditions. • Many landfills were located close to rivers and brooks potentially causing the extraction of pollutants and their transport by water. Groundwater contamination is also possible. Contamination of drinking water sources have not been reported in connection with landfills.
Slovenia	<p>Illegal dumping of municipal waste is not considered a big issue in Slovenia.</p> <p>Illegal dumping of construction waste and soil occurs to some extent though there is no information on the overall size of this problem. Especially in the karst area of the southern Slovenia construction waste and soil are used illegally to levelling out the areas in order to improve land use in spite of the fact that these areas are in many cases protected.</p> <p>Regarding old landfills currently the biggest problem is a relative high amount of biodegradable municipal waste going to landfill, and consequently high amounts of organic material in the leaching water, which are the main reasons that the environmental permit for some particular sites has not been acquired yet. Other issues which are considered to be of high significance though it is considered that only 10% of all sites have these impacts are</p> <ul style="list-style-type: none"> • Groundwater pollution, • gas emissions, • surface water pollution • effects on human health

Comparing the statements made on (potential) environmental impacts in the individual country studies, it can be concluded that certain environmental impacts are clearly more significant than others.

A rough overview shows that groundwater pollution seems to be by far the most significant impact followed by landfill gas emission and soil pollution. Groundwater pollution and gas emissions are mainly impacts from old landfills, which may be legal and under the control of the authorities. Impacts such as wind blowing, litter, odour, aesthetic and fires are also mentioned and might be more relevant regarding the illegal dumping of waste. The actual impact of these problems is however, difficult to quantify. The most significant result

seems to be that most Member States do not consider illegal dumping to cause serious environmental problems.

3.2.6 Measures to eliminate illegal landfills

In the following table the measures taken by the Member States for the elimination of illegal landfills are summarised. Some Member States (**Cyprus, Czech Republic, Hungary, Latvia, Lithuania, Malta and Poland**) focus on the measures taken to identify, inventorise, assess, prioritize, close down and rehabilitate landfills sites which cannot meet the requirements of the Landfill Directive. Other Member States focus on measures to prevent the activity of illegal waste dumping (**Estonia, Slovakia**).

Table 3.9 Measures to eliminate illegal landfills

Member State	Measures to eliminate illegal landfills
Cyprus	<ul style="list-style-type: none"> • Inventory was carried out in 2004. • Plan with timeline for rehabilitation has been established.
Czech Republic	<ul style="list-style-type: none"> • Databases at national and regional level (10/14 regions), covering "old burdens" and including closed registered and documented waste landfills which were closed during the period 1989-2000. • Systematic rehabilitation of registered old closed landfills at regional level; no timetable established, however. • New methodology for remediation of old burdens (including old closed landfills) is at the moment prepared. • No national measures but municipality measures to combat "black landfills" (proposal for amendment of waste act regarding illegal dumpsites was rejected in 2004).
Estonia	<ul style="list-style-type: none"> • Typical measures are fencing, posting signs, cutting off road access (sometimes guards, containers that are emptied at the cost of the municipality).
Hungary	<ul style="list-style-type: none"> • 2004 draft rehabilitation program for old closed landfill sites, but not adopted because of lack of funds. • NGO identification of more than 1.000 sites and elimination of 15% of these sites.
Latvia	<ul style="list-style-type: none"> • Inventory of dumpsites has been carried out. • Closing down dumpsites is the main instrument for elimination illegal landfills • Plan to improve waste collection system
Lithuania	<ul style="list-style-type: none"> • Reporting requirements on all operators and authorities with knowledge of site for illegal waste dumping from 2001 resulting in an inventory of more than 800 sites.
Malta	<ul style="list-style-type: none"> • Rehabilitation of identified old non-operating landfill sites is in progress. • fines for the illegal dumping of waste
Poland	<ul style="list-style-type: none"> • Currently-ongoing initiative to identify sites, establish inventory and eliminate illegal landfills

Member State	Measures to eliminate illegal landfills
Slovakia	<ul style="list-style-type: none"> All data on landfills reported by operators is processed centrally by the Environmental Agency. No national measures but municipalities have to solve problems of "black landfilling". Up-to-date information on old landfills (some say about 5.000 sites) is not available, though the Ministry intends to work on a systematic registration of old landfills.
Slovenia	<ul style="list-style-type: none"> Inventory in 1999 based on actual investigation and gathering of information from local authorities, documenting 83 officially known sites.

Site rehabilitation

Details regarding plans for rehabilitation are shown in the following table. These plans sometimes refer to the rehabilitation of old sites. To the extent that such old closed landfills are sometimes continuously used for illegal dumping these plans appear important in the context of the current study.

In **Cyprus** and **Malta**, rehabilitation plans exist for the sites already closed down (Malta) or those sites that will close down concurrent with the establishment of new EU compatible sites (Cyprus). In **Latvia and Lithuania** all sites that will be closed down before 2009 will be rehabilitated before 2012. In the **Czech Republic**, registered old landfills are being rehabilitated but without specific timelines set. In **Hungary** a program for the rehabilitation of closed landfill sites had been drafted, but remains un-implemented due to lack of funds.

For the other Member States no specific rehabilitation plans, including timelines are reported, not even limited to the rehabilitation of old, closed-down sites.

More generally speaking, as is described above, usually there are legal provisions in place imposing it on those responsible for illegal waste dumping, land-owners, or, ultimately, municipalities to clean up sites of (random) illegal waste dumping. However, in practice it appears that such provisions are rarely enforced, not least due to limited funds of municipalities. The **Czech** legal initiative described above aimed at more systematically addressing the problem has not gone beyond the drafting stage.

Table 3.10 Plan for rehabilitation

Member State	Plan for rehabilitation	Time frame
Cyprus	Rehabilitation of 113 illegal sites either by on-site rehabilitation or by removal of buried waste, following general guidelines from 2004. Larger sites will be restored in accordance with the provisions of a complete EIA.	Rehabilitation of all sites by 2010.
Czech Republic	Prioritised list of old burdens to be rehabilitated	no timetable
Estonia	No plan; municipal responsibility to deal with illegally landfilled waste.	no timetable
Hungary	Draft rehabilitation plan is not implemented.	no timetable
Latvia	No general plan for rehabilitation. 186 sites closed but not yet rehabilitated. All will be closed in 2009.	Rehabilitation of all sites by 2012.
Lithuania	Local authorities will gradually close down and rehabilitate on their territories according to national requirements. All will stop receiving waste in 2009 at the latest.	Rehabilitation of all sites by 2012.
Malta	3 sites in the process of rehabilitation	no timetable.
Poland	Currently on-going initiative to identify and eliminate illegal landfills, but no systematic plan	no timetable
Slovakia	51 known sites have to be closed down but many more need rehabilitation.	no timetable
Slovenia	83 sites to close down in 2009 or earlier or be reconstructed	no timetable

Measures targeted towards prevention of illegal waste dumping.

Some Member States have also quoted more general measures of waste management as means to combat illegal waste dumping. Such measures will typically less be targeted at the elimination of existing illegal sites, but more towards the prevention of the emergence of new dumpsites, and are thus equally of relevance.

An approach that is followed by several Member States is to improve and modernize waste management system in general and in particular to improve waste collection systems, increasing the amounts of municipal waste collected through organized systems.

In **Estonia** the main effort has been to introduce obligatory organized waste management in municipalities which have more than 1500 citizens. All inhabitants are obliged to pay for the regular waste removal. Today only 40% of the population have agreements on waste collection in rural areas and 80% in cities. As a result the incentive for uncontrolled waste dumping by the public should be reduced. The second step is to set up waste stations for the collection

of municipal waste that due to its nature (e.g. waste from construction) and/or size is not adequately covered by the collection scheme.

Also for **Estonia**, it is mentioned that only around 20 Civic Amenity Centres have been built although the National Waste Management Plan of 2002 required the establishment of 80-100 waste stations. The availability of sufficient waste stations for the temporary storage of wastes and subsequent transfer to landfill sites should be an important element of the overall strategy in a situation where previous systems dominated by the presence of many local dumpsites are replaced by regionalised systems with fewer state-of-the-art landfills. This has also been recognized specifically by **Cyprus** and **Malta**.

In **Latvia** the national waste management plan set a target to provide waste management services for 100% of the population in the cities and 80% in rural areas.

In **Slovakia**, the development of accessible waste management systems, the establishment of separate collection systems and the implementation of economic tools fostering separate collection are highlighted as measures contributing to the prevention of illegal waste dumping.

Other measures

Many Member States also mention financial fines and sanctions (**Malta, Czech Republic**), sometimes even criminal sanctions (**Hungary**) as an instrument to prevent the illegal dumping of waste.

Other measures include clean-up campaigns. For example, in **Estonia** municipalities occasionally arrange and finance the cleaning up of areas that attract waste. Furthermore, every year clean-up campaigns are arranged by NGOs attaining a high public attention. Also in **Hungary**, NGOs, supported by the national government, have been instrumental in identifying and eliminating illegal dumpsites (including littering) through grass-root action.

Finally, information and public awareness-raising campaigns are seen as an important tool by some Member States (e.g. **Hungary, Slovakia**)

3.2.7 Factors contributing to the existence and hindering the elimination of illegal landfills

The following table lists the different factors that have been quoted by Member States as reasons why illegal landfilling is still taking place, including factors that hinder the efficient elimination of illegal landfills.

Table 3.11 *Problematic factors*

Country	Issues mentioned
Cyprus	<ul style="list-style-type: none"> • Possible delays in establishing a compliant network of landfill sites • Lack of know-how and resources in rural municipalities combined with a history of uncontrolled waste disposal in smaller rural municipalities. • General lack of sensitivity concerning environmental issues. • Possible problems in the establishment of country-wide collection services (dependence on public funding). • Lack of monitoring and enforcement capacities.
Czech Republic	<ul style="list-style-type: none"> • Lack of monitoring and enforcement capacities. Insufficient administrative capacities for regular inspections of all suspected sites, waste producers etc.; • Increased stringency of the conditions for the disposal of waste on landfills, including fee increases for waste disposal. • Absence of legal requirements and relevant implementing rules (procedures, manual, and methodologies) to address the issue of "black landfills".
Estonia	<ul style="list-style-type: none"> • Ineffective system of collection, transport and disposal/recovery of municipal and construction waste. • Cost of waste disposal (members of the public often argue that waste disposal costs too much although the cost is very low compared to e.g. the cost of heating or food); • History of uncontrolled waste disposal: habit to dispose waste nearby or in certain areas, due to the fact that recently, hundreds of small landfills existed • Lack of awareness. • Insufficient monitoring and enforcement capacity (both in terms of the number of people and their competence).
Hungary	<ul style="list-style-type: none"> • Lack of environmental awareness - illegal landfilling is not characterised by strict social objection. • Indifference of local governments. • Lack of monitoring and enforcement capacities (huge resources would be required to implement effective control, but they are not available, neither at national nor at the local level). • Increased fees for the legal disposal of wastes. • Lack of information on legal disposal routes.
Latvia	<ul style="list-style-type: none"> • Gaps in the efficient implementation of country-wide waste management services, allowing households to remain outside collection systems, especially in rural areas. • In-sufficient monitoring over production enterprises, creating ground for potential illegal dumping of waste. • Increased transportation distances and cost for waste disposal.

Country	Issues mentioned
	<ul style="list-style-type: none"> • Gaps in collection systems (e.g. special systems for the collection of bulky waste in the municipalities are not available). • Lack of monitoring and enforcement capacities in municipalities to address illegal waste dumping. • Lack of cooperation programs or projects between municipalities and state environmental institutions (State Environmental Service) about more effective illegal waste dumping control and elimination. • Penalties for illegal waste dumping may be too low. • Lack of information on legal disposal routes. • In recreational areas – sea side, water bodies – seasonal fluctuation of tourism causes problems of illegal landfilling and littering.
Lithuania	<ul style="list-style-type: none"> • Delays in establishing a compliant network of landfill sites due to insufficient administrative capacities and prolonged legal proceedings.
Malta	<ul style="list-style-type: none"> • The Maltese do not see illegal landfilling as a major problem. However, random illegal dumping is recognized as an issue and efficient enforcement is considered a problem.
Poland	<ul style="list-style-type: none"> • Absence of a nationally co-ordinated and enforced program for bringing Polish landfills in compliance with the EU Landfill Directive. • Incorrect transposition of the requirements of the EU Landfill Directive, in particular its definition of landfills, and, more generally, a complex and intransparent legal framework. • Complicated division of competence in the scope of decision-making and control. • Absence of an efficient supervision over the local and regional level. • A generally low level of environmental awareness.
Slovak Republic	<ul style="list-style-type: none"> • Absence of national initiatives to deal with "black landfilling". • Insufficient information base, including on old closed down landfills and their continued use.
Slovenia	<ul style="list-style-type: none"> • Shortage of disposal capacities is one of the main reasons for the continued presence and operation of the existent landfills, although they do not fully live up to EU requirements.

On the basis of the problematic factors quoted by the individual Member States, it is possible to draw the following conclusions:

- The absence of efficient and comprehensive, country-wide waste management systems - including the availability of country-wide collection services with obligatory use by households and commercial operators, and, where necessary, e.g. in rural areas, publicly funded, and sufficiently near disposal facilities or waste transfer stations, coupled with a lack in enforcement due to insufficient monitoring and enforcement capacities, appears to be the single most important reason for illegal waste dumping⁹³.
- Upgrades in national waste management systems over recent years have led to increases in waste disposal fees, which, at least in the perception of the general public are considered too high.
- More generally, there is a lack of sensitivity and awareness regarding environmental issues, not just at the level of the general public, but in some Member States also within parts of the administration, predominantly at the local level.
- Regarding more particularly the elimination of existing illegal landfill sites, in some countries, there is a lack of information on the precise number and impact of those sites, as a precondition to solve this problem. Identification and elimination of such sites is often the legal responsibility of municipalities without such activity being coordinated from the national level and without sufficient funds available for the purpose.
- In most Member States the competence to deal with illegal dumping seems to be overloading the local authorities. Enforcement in terms of monitoring, control and inspections of illegal landfills requires not only sufficient personnel but also qualified personnel. The current situation requires an administrative capacity which in many Member States is not sufficient. This is considered a significant problematic factor. This is reported in **Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland.**

3.3 Summary of critical findings

From the above assessment, the main findings of the study may be summarised as follows:

- All Member States subject to Task 1 are deeply involved in the process of bringing their existing landfills in line with the requirements of the EU Landfill Directive. This process is more or less advanced, probably least so in Poland. Also, it can be observed that the national processes are not al-

⁹³ In some cases (Poland), national legislation which is not in compliance with EU requirements, coupled with insufficiently coordinated national implementation is quoted as a deterrent factor in establishing an EU-compliant network of landfill facilities.

ways fully in line with the requirements as foreseen in Article 14 of the EU Landfill Directive. Notably, there is a tendency in Member States to see the date of 16 July 2009 as a single deadline for bringing their landfills in line with the Directive.

- In this situation, the issue of illegal landfilling per se appears to be of subordinate importance to Member States: thus, perhaps with two exceptions, none of the Member States dispose of a comprehensive inventory of illegal landfills, even though many Member States have some registers with incidences of some types of illegal landfills⁹⁴. The exception is (i) Cyprus, where all existing landfills are considered "illegal", but remain operating until the establishment of a new, fully-compliant landfill infrastructure, and (ii) Malta, where the previously existing landfills have been closed down and are currently in the process of rehabilitation.
- By contrast, several Member States dispose of an overview over the number of old closed sites. Closed, but not yet rehabilitated sites are not covered per se by this study. However, in several cases, Member States are aware that at least to some extent these closed sites continue to be used for illegal waste dumping. However, there is no precise knowledge, at least at the national level, of how many of these sites are actually still used. Also, it should be noted in this context that the notion of "closure" is most likely not always understood within the same meaning as under the Landfill Directive. Indeed, it is likely that in some Member States sites may be understood as closed, which have simply stopped operations, such sites then being fenced off and access roads closed more or less successfully. Also, the consultants underline that at least in the case of some countries, "closed" landfills include both landfills closed in an effort to bring the existing landfill infrastructure in line with EU requirements, but also landfills that may have been "closed" decades ago, outside the context of the Landfill Directive.
- Knowledge on the impact of illegal landfill sites is uneven between the Member States, with, for example, Cyprus well aware of the impact of the sites identified as illegal. The same is true for the Czech Republic where inventories of "old burdens" include closed landfill sites and where their impact is documented specifically. To the extent that such closed sites continue to be used for illegal dumping, such registers of closed sites are a useful starting point for further work to be undertaken. At the other end of the spectrum, Member States have forwarded general information on the potential impacts of closed landfill sites.

⁹⁴ Registers of old burdens (old closed down landfills) seem most common. Besides this, most Member States have knowledge of incidences of (random) waste dumping (littering), sometimes leading to the emergence of illegal dumpsites, though the situation is not fully depicted, at least at the national level, in any of the Member States. In several cases, the national level has stated, however, that regional and/or local authorities have a clear idea of the location and nature of such sites.

- In some cases, where inventories of old closed sites exist, rehabilitation strategies for these closed sites are also in place, although not always linked to specific timetables. Timetables are in place in Cyprus, Latvia, Lithuania and Malta.
- The legal responsibility to deal with illegal dumping and emerging illegal dumpsites is mostly at the municipal level but is rarely enforced, primarily because of lack of administrative capacities and lack of funds. These sites are not systematically documented at the national level in any of the ten Member States, nor does there seem to be much guidance from the national level to the local level on this issue.
- In terms of problems recognized as hindering the elimination of illegal sites and the prevention of the emergence of new sites, the following main causes can be highlighted:
 - a lack of information on the precise number and impact of those sites, as a precondition to solve this problem; and imposition of the burden on the local level;
 - the absence of efficient and comprehensive, country-wide waste management systems, including in particular collection systems;
 - increased waste disposal fees;
 - a general lack of awareness, including, sometimes, within (local) administrations.

3.4 Recommendations

Process of bringing existing landfills in line with EU requirements

It is clear from the above findings that the problem of illegal landfills per se has not (yet) received sufficient and systematic attention from the ten new Member States examined, because the main focus is currently on getting existing networks of landfill facilities in line with EU requirements.

In the view of the consultants this prioritisation is per se not a problem, and appropriate. On the contrary, the study has shown that clearly in one Member State, namely Poland, the process has not been sufficiently understood and is not sufficiently coordinated at the national level. Also in other Member States there is a need to explain the requirements of the EU Landfill Directive pursuant to its Article 14, as national processes are not always in line with the Directive's stipulations⁹⁵. In this perspective, the current initiative of DG Environ-

⁹⁵ A separate process would, of course, be for DG ENV to systematically examine the compliance of national legislation transposing the EU Landfill Directive with the Directive's stipulations, insofar as this has not already been done. The ensuing dialogue with Member States in the phase prior to formally opening infringement proceedings should be used to clarify vis-à-vis Member States, the scope and objectives of the Directive regarding the process of bringing existing landfills in line.

ment, in the framework of the project on "Information Exchange and Awareness Raising", to organise awareness-raising events in all new Member States is a useful exercise and should be followed up by further multi-country events also allowing for the exchange of experiences and best practises between Member States.

Including illegal landfills in reporting requirements - and defining them first

Eventually, i.e. after the expiry of the transitional period for existing sites (July 2009), the Commission may consider to specifically cover illegal landfill sites in Member States' reporting on the implementation of the Landfill Directive. This would presuppose that appropriate questions covering the issue were included in the Commission's reporting questionnaire, issued to Member States prior to the beginning of each 3-year reporting period. In turn, this would require a clear delineation of the notion of illegal landfills. Such delineation could be elaborated by DG ENV in the form of guidance to Member States and discussed in the Technical Adaptation Committee under the Landfill Directive (and, possibly, IMPEL), prior to finalisation, and the subsequent use for reporting purposes.

The issue of closed landfills continued to be used for illegal dumping

Statements from the Member States made in the context of the study indicate that old, closed landfills represent a threat to the environment with potential groundwater contamination as the one single environmental impact with most significance. This is even more so the case as the requirements attached to the "closure" of landfills do not always seem to be in line with minimum requirements of the EU Landfill Directive, and the notion is highly likely in some cases simply to refer to landfills which have ceased operations.

Many Member States are aware that closed landfills present a problem where they continue to be used for illegal waste dumping, although the consultant underline that the negative environmental impact of such closed landfill sites is not specifically related to the continued illegal use of such sites. It seems that because of a vague interpretation of the term "closure" and its significance in technical terms, per se, such sites are a liability whether or not they continue to be used illegally.

In this respect, the consultants consider it vital, firstly, to ensure that any closure is effectively enforced, and, secondly, to speed up as much as possible, the process of beginning the rehabilitation of these sites. Ideally, Community funds should increasingly be earmarked for this purpose by the Member States, supported by the European Commission (e.g. by DG ENV, in cooperation with DG REGIO, issuing guidance on available EU funding). Also, DG ENV can provide important support on this issue of effective closure of sites as well as rehabilitation by identifying and fostering the exchange of best practise between old and new Member States (old Member States going through the same process of adapting their landfills to the requirements of the EU Directive).

Enforcement against perpetrators of illegal waste dumping - addressing the local level	Regarding the important role of the local level in most Member States to ensure enforcement vis-à-vis perpetrators illegally dumping waste, it appears important to address specific guidance, e.g. in the form of workshops under the umbrella of IMPEL, to the local level ⁹⁶ . Such guidance currently does not appear to be sufficiently emerging from the national levels.
Prevention of the emergence of new illegal dumpsites: improving waste management systems	More generally, ensuring effective waste management and collection systems is one of the most important instruments in preventing the illegal dumping of waste. Leaving as much as 50% of the households without any municipal collection system, as observed in the context of the study, the risk of illegal dumping appears to be high. Implementing obligatory participation in local collection systems as is done, for example, in Estonia, decreases the incentive of households to dump waste illegally whilst ensuring the necessary financial base for investment in waste infrastructure. Again the exchange of experience and best practise among Member States in how effective local collection systems are implemented is thus, in the view of the consultants an important tool for the further development and improvement of waste management in general, and the prevention of illegal dumping more particularly. Again, IMPEL seems to be a good forum as where to anchor such an initiative.

⁹⁶ As example from the UK for action directed at the local level which may inspire the development of awareness raising and training courses by, for example IMPEL, is the following: The UK Environment Agency offers a 10 days "Flycapture Enforcement Training" program for local authorities to assist them to deal with the on-going problem of waste crime and fly-tipping. The training program is split up into three parts. Part 1, *Introduction to waste crime and fly-tipping policy & legislation*; part 2, *preparing case files, presenting cases in court, gathering evidence* and part 3, *use of flycapture data, set-up up a fly tipping strategy, resource management & prevention policy* (Source: http://encams.org/events/main_print.asp?pageid=223).

4 Task 2: Assessment of implementation of waste acceptance criteria in six selected Member States

Scope of the assessment

Task 2 consists of taking stock of the application of Decision 2003/33/EC in the selected Member States (Germany, Hungary, Ireland, Slovenia, Spain and Sweden), describing how the criteria and procedures for the acceptance of waste in landfills are implemented in those Member States, and identifying possible problems in the implementation.

As the study only covered six selected Member States, the consultants underline that the findings of the study regarding Task 2 are predominantly country-specific and not necessarily representative for the situation across the EU-25 (now EU-27). In particular, Sections 4.3. and 4.4. should therefore be read with this proviso in mind.

Furthermore, we have noted major legal implementation deficits in our assessment of the national legislation on waste acceptance criteria and procedures where we have come across them. However, no systematic "compliance checking" of underlying legal frameworks, which would be a separate legal exercise, was carried out.

Outline

In the following sections, we

- have summarised the situation for each of the Member States covered, as described in more detail in the country reports (Section 4.1);
- have assessed a number of selected core issues across the six Member States, including a collection of problems experienced in the practical application of the Decision (Section 4.2);
- have summarised and discussed the main findings of the study regarding Task 2 (Section 4.3); and
- have formulated a number of recommendations to the Commission for addressing some of the findings from the study (Section 4.4).

4.1 Summary by Member State

4.1.1 Germany

Context	<p>In 2004, about 340 mio. tons of waste were generated in Germany, 18.5 mio. tons thereof hazardous, amounting to approximately 5.5%. In terms of weight percentages, municipal waste accounted for 14%, industrial wastes for 16%, the remainder being construction waste and similar (55%), and mining waste (15%). German waste management has been greatly impacted by a prohibition to landfill untreated municipal waste, effective from 1 June 2005. This has led to decreases in the volumes of municipal waste landfilled, and, consequently, decreases in municipal landfills in operation, the numbers of which approximately halved from around 300 municipal landfills in 2004 to an estimated 160 landfills in 2006.</p>
Legislative framework	<p>Already prior to the adoption of Council Decision 2003/33/EC at EU level, Germany had detailed waste acceptance procedures and criteria in place since the 1990's, initially in the form of administrative guidelines, binding on competent authorities only, but since 2001/2002 in the form of legislation, legally binding on waste generators and operators directly. Those criteria were broadly similar to the ones now laid down in the Council Decision. The remaining gaps were closed by the adaptation of the existing legal framework with effect from 1 February 2007. The relevant legislation consists of the following acts:</p> <ul style="list-style-type: none"> • 2001 Ordinance on the environmentally sound disposal of municipal wastes; • 2002 Ordinance on landfills and long term storage; • both amended by the 2006 Ordinance for the implementation of Council Decision of 19 December 2002 establishing criteria and procedures for the acceptance of wastes at landfills. <p>Thus, in Germany, the requirements of the Council Decision, which is addressed to Member States, have been made directly legally binding on waste generators and landfill operators through the adaptation of the pre-existing national legal framework governing acceptance procedures and criteria at landfills. The requirements set out in the legislation supersede different requirements which may have been laid down in "old" landfill permits.</p>
Enforcement and sanctions	<p>Whereas waste acceptance criteria and procedures are extensively regulated at the federal level, the enforcement of the legislation is up to the state level, the "Länder". Depending on the administrative structure in each of the 16 German Länder, enforcement is ensured at the state, regional, or county/local level ("Senatsverwaltungen", "Regierungspräsidien" or "Landkreise"/"kreisfreie Städte").</p> <p>Sanctions for non-compliance with the legal requirements are set by federal law at up to EUR 50.000.</p>

Level of implementation compared to the Decision	<p>The German requirements are more stringent than the ones set by the Council Decision on the following points:</p> <ul style="list-style-type: none"> • German legislation maintains the previously applicable DOC of 5 mg/l for the deposit of wastes on inert landfills, whilst the Council Decision allows for a DOC of 50 mg/l. • German legislation maintains acceptance criteria for the landfilling of all non-hazardous wastes on landfills for non-hazardous wastes. • An additional acceptance criterion of a calorific value of less than 6.000 kJ/kg has been introduced with regard to the landfilling of wastes on hazardous landfills.
Division of responsibilities amongst stakeholders	<p>The responsibilities of the various stakeholders for ensuring compliance with the acceptance procedures and criteria may briefly be summarised as follows:</p> <ul style="list-style-type: none"> • Waste generators/collectors are responsible to provide all data and information necessary for a basic characterisation to be carried out, including testing. • Carrying out the basic characterisation as such and determining key parameters is the obligation of landfill operators. Landfill operators are also required to ensure compliance testing and visual inspections. Landfill operators must document the basic characterisation as well as results of compliance testing and visual inspection in the landfill's operation diaries. • All sampling and testing has to be carried out by accredited laboratories. These laboratories may be in-house laboratories or external laboratories. • Competent authorities carry out inspections at landfill sites to ensure compliance with the requirements and enforce the legislation.
Cost implications	<p>Given the fact that relatively extensive requirements existed prior to the adaptation of the German legal framework to the Council Decision, cost increases for landfill operators are limited. However, due to the extension of testing requirements in the context of basic characterisation, additional costs are now imposed on waste generators. It is estimated that the costs for leachate testing amount to approximately EUR 200-1000 per waste tested. One of the landfill operators' representatives interviewed has raised the issue that increasing competitive pressures amongst landfill operators may lead to a situation where the testing legally imposed on waste generators will be taken over, or at least the costs for such analysis will be borne, by landfill operators.</p>
Sampling and test methods	<p>Sampling and testing procedures follow European standards, insofar as those are already in place. Where European standards have not been finalised yet, German national standards apply. Regarding sampling, Germany makes the administrative guidance "PN 98", developed by a Länder working group legally binding. PN 98 has been stated by the respondent from the Federal Environment Ministry to implement in detail the requirements of (pr)EN 14899.</p>

Problems experienced

Broadly speaking, the adaptation of the German legal requirements to those of the Decision is not seen to have had a major impact by authorities and landfill operators. Waste generators will have to bear some extra costs for testing, compared to the situation prior to the Council Decision.

The following problems were highlighted in the context of the implementation of the Directive:

- As regards the disposal of hazardous sludges from industrial processes, industrial sludges from sugar production processes or dredging sludges, in many cases the total organic contents value will be exceeded, requiring further treatment prior to landfilling. However, Germany submits that the further energy use in the context of such further treatment (drying to enable incineration) may be disproportional and contradictory to the political aim to reduce CO₂ emissions (biological treatment - in the case of sugar sludges - is sometimes not an option due to the discontinuation of production processes).
- As regards construction wastes, some other Member States have reported a problem concerning the achievement of sulphate and chloride values.
- There is also a problem regarding some special wastes, e.g. mixed wastes from fire damage which consist of organic wastes and asbestos, i.e. hazardous wastes. Such wastes cannot be incinerated because of the asbestos fibre contents. Treatment will not result in the required reduction of organic content in line with the acceptance criteria.

Along broader lines, operators have also raised the above-mentioned issues of costs for testing in the context of basic characterisation likely to be taken over by landfill operators due to competitive pressures, and the introduction of an additional acceptance criterion of a calorific value. Finally, it was highlighted that Germany had higher standards regarding the lining of landfills compared to many other EU Member States, leading to a situation where the acceptance criteria as applicable according to the Directive, and implemented in Germany, were overly stringent in relation to the level of technical protection in place.

Summary

In summary, there appear to be no major implementation problems in Germany, although some operators raised the issue of more stringent national legislation on one point. Authorities, landfill operators and waste generators have applied very similar requirements to those set out in the Council Decision already prior to its adoption. There are some cost increases, due to extended testing requirements, primarily for waste generators, but possibly also for landfill operators. A number of technical issues have been raised for which there is felt a need of further discussion at Community level, possibly resulting in an amendment of the Decision.

4.1.2 Hungary

Context	<p>In Hungary, close to 12 mio. tons of waste were generated in 2004, approximately 11 mio. tons thereof non-hazardous wastes. Waste landfilled in Hungary amounts to around 80% of all waste generated. The share for non-hazardous wastes landfilled is 80%, the share of hazardous wastes landfilled about 22%. Waste management in Hungary is governed by the 2002 National Waste Management Plan, covering the period 2003-2008. The plan foresees a shift of waste management from landfilling towards the recovery and recycling of waste and sets specific reduction targets (a reduction of the percentage share of waste landfilled from 2002 levels to 65% in 2008). Regarding landfill installations, ultimately, the plan foresees the establishment of regional landfills, serving at least 100.000 inhabitants each, so that the total number of landfills operating in Hungary should not exceed 100. In a national survey 2004/2005, and according to the Act on Waste, all landfills had to submit a plan for review. 178 non-hazardous landfill sites have received a permit for operation, but 125 will be closed down by July 2009, and 53 will continue operating beyond July 2009, following restructuring.</p>
Legislative framework	<p>The landfilling of waste is regulated in the 2006 Decree of the Ministry of Environment on waste disposal in landfills (Decree No. 20/2006; IV.5). Inter alia, the Decree serves to implement the provisions of the Council Decision. Prior to the adoption of the Decree, the EU Landfill Directive, including waste acceptance criteria and procedures as laid down therein, was transposed by a 2001 Decree of the Ministry of Environment (Decree No. 22/2001; X.10) on the landfill of waste and the conditions and rules of waste deposition (Decree No. 22/2001; X.10). In preparation for the adoption of the 2006 Decree a study was carried out on the impact of the integration of the Council Decision into Hungarian legislation. One of the main results was that for some of the components, Hungarian standards containing requirements on waste sampling, sample preparation and analysis were not available. Also, certain leachate analysis methods were determined as lacking.</p> <p>It is planned to amend the Decree in the near future in order to require that basic characterisation and compliance testing will be carried out only by eligible experts of waste management. Also, the formal requirements and content of the report issued for basic characterisation and compliance tests will be identified. At the time of writing this report, a draft version of the amended Decree was planned to be available in April 2007 and adoption was foreseen for May 2007.</p> <p>The Decree directly imposes obligations related to acceptance procedures and criteria on all waste generators and operators.</p>
Planned guidance	<p>The Ministry also plans to issue a guide to improve the understanding of stakeholders of the obligations imposed by the Decree. The timing of publication of the guide is not determined yet. Due to financial constraints, it has been stated that it cannot be prepared during 2007 already. The guide will:</p> <ul style="list-style-type: none"> • define waste groups for which reduced sets of tests may be performed;

- define test standards and/or procedures for each component to be tested;
- provide general guidance in the practical application of the Decree.

Enforcement and sanctions

The Ministry of Environment is the authority responsible for the overall implementation of the Council Decision. The regional environmental authorities are responsible for the enforcement of the Decree, under the supervision of the Inspectorate for Environment, Nature Conservation and Water Management. The regional environmental authorities carry out regular inspections, either announced or un-announced, either at the site of the landfill or at the site of the waste generator.

Non-compliance with the requirements of the Decision results in an order to the operator/waste generator to comply with the legal requirements. The regional environmental authority is also empowered to suspend or close a landfill site which does not comply with the legal requirements. Furthermore, fines may be issued. The amount of the fine is calculated from a basic fine of EUR 800 per ton of waste at issue as a starting point, depending on the environmental risk posed (e.g. fines for breaches of hazardous waste legislation are 10 times higher than fines for breaches of non-hazardous waste legislation), the amount of waste at issue, and the number of instances of breach of a requirement. As an example, a first-time violation of the requirements relating to waste acceptance criteria or procedure will be fined with around EUR 800 per ton of waste at issue. If a landfill operator or a waste generator breaches the Decree in relation to a hazardous waste, and this is a third time repetition, the fine will amount to almost EUR 25000 per ton of waste at issue.

Level of implementation compared to the Decision

The Decree broadly reflects the requirements of the Council Decision at the national level. However, there are a number of divergences in relation to the Council Decision, as follows, resulting in somewhat more strict legal requirements in Hungary:

- The Decree does not reflect the possibility, provided for in the Council Decision (point 2, second paragraph), under certain circumstances, to accept up to three times higher limit values for specific parameters.
- The waste from construction sites where hazardous materials were used, or from buildings where products that may have polluted the building materials were stored or manufactured, cannot be considered inert.
- In the case of non-hazardous solid wastes listed in Chapter 20 of the list of wastes that are collected in a mixed way, testing is not required in the context of preparation of the basic characterisation for the placement in a Category B3 landfills for non-hazardous wastes⁹⁷, except for wastes from chimney sweeping (EWC 20 01 41) and from street-cleaning residues (EWC 20 03 03). The Council Decision, by contrast, allows for all Chapter

⁹⁷ Hungary provides for a sub-classification of non-hazardous waste sites in B3, landfills for mixed non-hazardous wastes with substantial contents of both organica nd inorganic materials; and B1b, landfills for inorganic, non-hazardous wastes.

20 wastes to be acceptable at landfills for non-hazardous waste without testing (point 2.2.1 of the Decision).

- The Decree contains some more stringent acceptability values regarding waste acceptable at landfills for inert waste, namely a lower PCB level of 0,1 mg/kg, compared to a value of 1 mg/kg of the Decision (point 2.1.2.2), and a lower level regarding mineral oil of 100 mg/kg, compared to 500 mg/kg of the Decision (also point 2.1.2.2). These stricter limits were adopted in order to accommodate strict Hungarian groundwater standards.
- The Decree also stipulates that if waste contains hazardous components not included in tables setting acceptance criteria, the waste generator, pre-treatment operator or the landfill operator are required to request specific leaching values for such components to be determined by the Waste Classification Committee, provided for in separate regulation.

Division of responsibilities amongst stakeholders

The responsibilities of the various stakeholders for ensuring compliance with the acceptance criteria and procedures may briefly be summarised as follows:

- **Waste generators (alternatively the owner of the waste, or the person delivering the waste to the landfill)** are required to perform both basic characterisation and compliance checking of the waste, recording the results thereof in reports, proving vis-à-vis the landfill operator that the waste may be accepted at the landfill concerned. The frequency of compliance checking must be specified in the report prepared for basic characterisation.
- **Landfill operators** may only accept waste that meets the basic characterisation, and the compliance checking requirements, based upon the report presented upon delivery of the waste at the site, the measurement data contained in that report and the comparison of such measurement data with the acceptance criteria as laid down in the Decree. In that process, the landfill operator is required to perform an on-site verification aimed at confirming that the waste delivered is indeed identical with the documentation provided upon delivery. The verification comprises a document check, and a visual inspection of the waste delivered. In addition, the Decree provides that on-site verification may also include the use of test kits for verifying the testing results laid down in the report. Such test kits are available on the market, and are widely used for various purposes not related to the Decree on waste acceptance criteria and procedures. However, reportedly, they are not used for on-site verification by landfill operators, because, as has been stated, appropriate staff with the know-how of using the tests is not available at most of the landfill sites⁹⁸.
- Sampling and analysis may only be performed by **laboratories accredited for that purpose by the National Accreditation Body**. Landfills may ha-

⁹⁸ Although according to Hungarian legislation, the landfill operator is obliged to employ an adequately qualified environmental officer (i.e. with qualifications outlined in separate regulations).

ve their own laboratories, but this is relatively rare. Any such in-house laboratory must be accredited according to the general rules. Similarly, waste generators may use in-house laboratories but this is not a practise in Hungary. Such in-house laboratories would also require accreditation.

- The **regional environmental authorities**, under the National Environment Inspectorate are responsible for the enforcement of the Decree through regular inspections, including on-site inspection and document checks, either announced or un-announced, either at the site of the landfill or at the site of the waste generator. Otherwise, the authorities are not involved in any way in the procedures prescribed by the Decree.

Cost implications In terms of costs, it is estimated that total costs of basic characterisation ranges between EUR 1000 and EUR 10.000, depending on the waste tested and on the laboratory performing the test. It has been underlined that very few laboratories are accredited for percolation tests and TOC testing.

Sampling and test methods Sample and test methods follow the standards that have been taken over from the Council Decision. As regards sampling, (pr)EN 14899 applies. However, it has been highlighted that for some components, where European standards are not in place yet, no national standards are in place.

Problems experienced The following problems were raised in the context of the implementation of the Directive in Hungary:

- The Hungarian legal framework as provided for in the Decree is, in its present version, ambiguous, or incomplete on a number of points:
 - The Decree does not contain a complete set of standards to be used for testing and analysis. National standards do not exist for all components. Some standards vary from national standards otherwise used in Hungary.
 - The Decree is considered to be too vague regarding formal requirements and content of the reports on basic characterisation and compliance checking.
 - The Decree is also considered too vague on eligibility criteria/qualifications to perform basic characterisation and compliance checking and to submit the relevant report as required by the Decree. Similarly, the Decree is considered to be ambiguous on who is to determine, in the basic characterisation report, at which landfill a specific waste may be disposed of (although, ultimately, it is the landfill operator that has to accept or refuse the waste delivered). It is also raised in this context that the role of laboratories is not clearly enough defined.
- Another problem raised which is somewhat related to the above-mentioned weaknesses of the Decree (vagueness as to qualifications to perform basic characterisation and submit a report thereon; vagueness as to contents of

the report) is that producers often classify wastes into categories the disposal of which does not require testing (because exempted).

- On a general point, the administrative burden and the costs for testing and analysis required in the context of basic characterisation and compliance checking are high, and it is considered by the Ministry that small and medium-sized companies will not be able to afford them. In this context, the Ministry has raised the possibility to reduce the number of analyses for certain waste types and components. It is considering doing so in the context of amending the Decree and has stated that it would welcome EU experiences thereon.
- Furthermore, the Ministry has also raised the problem that the number of accredited laboratories is inadequate, and that there is a significant shortage of equipment of those laboratories. Here too, it is considered that the above-mentioned reduction of testing requirements for certain waste types would provide a solution.
- As mentioned above, at the level of landfill operators, although the law requires the operator of each site to employ a qualified environmental officer, it also seems that appropriate staff with the know-how of using the tests is not available at most of the landfill sites.

Some of the problems mentioned are expected to be met by the planned amendment of the Decree and the publication of additional guidance on the practical application of the Decree.

As mentioned above, the Ministry is also considering looking into reduction of testing requirements. It should be underlined that any reduction of testing requirements can only be done in line with the requirements of the Council Decision. In this context, it should be noted that, as regards testing in the context of basic characterisation, the Council Decision allows for certain testing exemptions in point 1.1.4 of the Council Decision. It appears that these are all already reflected in the Hungarian Decree as it stands, both in the context of basic characterisation (points 1.1.4 a) through c) of the Council Decision) and in the context of compliance checking (points 1.1.4 a) and c) of the Council Decision only). In addition, the determination of key variables as foreseen under the Council Decision also enables a reduction of testing at the compliance checking stage. Also in this regard, the Hungarian Decree is in line with the Directive and foresees testing at the compliance checking stage of key variables only.

Summary

In summary, the study has revealed that there are still major deficiencies in the practical application and enforcement of the Council Decision in Hungary. This is due partially to gaps and ambiguities in the national legal framework, leading to application and enforcement deficits with stakeholders and authorities. Generally speaking, stakeholders, and landfill operators in particular, will require additional guidance and will need to improve their capacities (qualifications) in order to be able properly to fulfill their obligations. In practical terms, the lack of standards at national level to supplement CEN standards, and, the insufficiency of the testing infrastructure corroborate the proper im-

plementation of the requirements of the Decision in Hungary. The administrative burden and the costs for testing and analysis required in the context of basic characterisation and compliance checking are considered a problem, especially for small and medium-sized companies.

4.1.3 Ireland

Context

Waste management in Ireland has been dominated by the disposal of waste to landfills. Until the 1990's, more than 80% of municipal waste was landfilled. Due to the modernisation of Irish waste policy on the basis of new legislation and the adoption of waste management plans, the pattern of waste disposal options are changing. Over recent years, the share of municipal waste disposed of in landfills has decreased in absolute numbers as well as in relative numbers so that by 2005 only 60% of municipal waste was landfilled. 24 landfill sites for non-hazardous waste and 2 sites for inert waste have been permitted to continue operations after 2009. 13 sites will be closed down before 2009. Ireland does not have landfills for hazardous waste; hazardous waste is either exported or incinerated.

Licensing of landfill facilities began in 1999. Since then, as a minimum, on-site verification has been included as a requirement for each site. Furthermore, landfills for the disposal of sludge have been required to do eluate and toxicity testing to characterise waste prior to acceptance. These procedures included level 1, 2 and 3 testing⁹⁹, very similar to the scope of the requirements of the subsequent Council Decision. Thus, even though most landfill operators have not been used to the waste acceptance procedures prior to the implementation of the Decision, the system and the procedures were known in the Environmental Protection Agency and in the sector as such.

Legislative framework

There is no specific Irish legal instrument in place for the implementation of the Council Decision. However, the Irish Waste Management (Licensing) Regulations 2004 (Statutory Instrument No. 395) give effect to Article 16 and Annex II of the Landfill Directive. Conditions of individual waste licences for landfills issued by the Environmental Protection Agency also give effect to the Council Decision.

Out of the 39 operational landfills (as at end of 2006), for 30 of these, their waste licences already include conditions for the acceptance of waste in accordance with the Decision, i.e. their licences have been issued since or during 2003.

Out of the 26 landfills that will remain operational after 2009, 23 of these fall within the above 30 i.e. their licences have been issued since or during 2003. The remaining 3 had their licences issued prior to the introduction of the Decision. However, it is understood that the EPA intends to amend these licences to reflect the requirements of the Decision.

⁹⁹ Level 1: basic characterisation; level 2: compliance checking; level 3: on-site verification.

Out of the 13 sites that will close before 2009, seven of these sites operate under 'new' licences and six operate under 'old' licences.

Thus, the application of the Decision is well established for newer landfills. On the other hand, there are some landfill operators in Ireland which have not been aware of the requirements of the Decision until recently. It seems that since starting the implementation of the Decision, the EPA has concentrated on newer landfills to ensure that these are in compliance. By contrast, some older landfills with little capacity remaining and with older licences have not yet been targeted in terms of amending their licenses to include the specific requirements of the Decision. As noted above, only half of the sites which are to close down before 2009 possess a license with references to the requirements of the Council Decision. Thus, a clear differentiation can be observed between sites which are to continue and sites which are to close down, in terms of level of compliance with the Decision.

Planned guidance	The Irish Environmental Protection Agency intends to publish guidance on the Decision in 2007. It is expected that this will accelerate the wider implementation of the Decision, especially among small waste producers, who are responsible for providing all documentation for basic characterisation (see in more detail below).
Enforcement and sanctions	<p>The Environmental Protection Agency is responsible for the enforcement of the Decision. Enforcement of the Decision is undertaken through enforcement of the individual license at each site, by way of site inspection and audits.</p> <p>In Ireland, there is no cost penalty for non-compliance with the Decision. Operators will receive a notification on non-compliance and would be instructed to undertake corrective measures.</p>
Level of implementation compared to the Decision	<p>In general the Irish implementation is not more stringent than what is required in the Decision. However, some variations of the Irish implementation of waste acceptance criteria and procedures can be observed compared to the Council Decision:</p> <ul style="list-style-type: none"> • EPA has prepared guidance on the landfilling of asbestos waste in order to address the question of the maximum quantity of so-called stable non-hazardous waste, in this case asbestos, that can be placed into a non-hazardous landfill. This must be considered as a more stringent implementation as there is no upper limit in the Decision on the share of hazardous waste on non-hazardous waste landfills. • Newer landfill sites have adopted a rather stringent view on what types of non-hazardous waste will need to be tested as part of basic characterisation. According to their interpretation, all non-hazardous waste not classified as Chapter 20 waste in the European Waste List, is subject to the requirements for testing. Waste Acceptance Criteria for non-hazardous waste co-disposed with hazardous waste are used though the Decision does not require that these criteria must be used for site for non-hazardous waste.

According to Section 1.1.4 in the Decision all waste types which do not have to meet waste acceptance criteria are exempted from testing.

Scope of testing at KTK Landfill, Ireland

At one site interviewed for the purposes of this study, KTK, it is estimated that 10%-15% of waste accepted are granular, i.e. soil, sludge, filter cake materials and have been subject to leaching tests for basic characterisation. Contaminated soil would make up approximately 90% of the waste subject to leaching tests.

The landfill manager of the site indicated that they acknowledge that their testing requirements may be an over-implementation. However, the Decision is not considered clear on this point, allowing for different interpretations. In the absence of clarity in the Decision and/or further guidance from the Irish EPA, KTK assume that testing is required and they apply the criteria for granular non-hazardous waste accepted in the same cell as stable, non-reactive hazardous waste even though no stable non-reactive hazardous waste is being co-disposed.

- The possibility for three times higher limit values provided for in the Decision is not applied in Ireland.
- With regard to representative sampling of granular wastes for basic characterisation, the European (draft) standard (pr) EN14899 "Characterisation of waste - Sampling of waste materials: Framework for the preparation and application of a sampling plan", is not used in Ireland; similarly, there is no national standard in place (see below for more detail).

Division of responsibilities amongst stakeholders

The responsibility of the various stakeholders for applying the waste acceptance procedures can be summarised as follows:

- **Waste generators/collectors** must characterise their waste. They must prepare documentation to accompany each load of waste which satisfies the requirements of the Decision as well as other national legislation regarding documentation requirements according to the statutory Waste Management (Collection Permit) Regulations 2001.
- **Landfill operators** must ensure that the delivery of all waste to their facility follows the waste acceptance procedure described in their license. The decree to which each individual landfill operator incorporates the procedures and criteria of the Decision depends on the scope of their waste license.
- According to Irish legislation, **laboratories for testing** must be accredited in case they are involved in basic characterisation, compliance testing or on-site verification. Generally, all testing in Ireland for compliance with the Council Decision is carried out by independent laboratories. Sampling is generally carried out directly by the waste generators, or, depending on the amount of and nature of the waste, e.g. contaminated soil, the generator may appoint a third party such as a consultant to carry out the sampling.
- **The Environmental Protection Agency** enforces licenses and carries out site inspections at landfill sites to ensure compliance with the license re-

quirements and enforce the legislation at each individual site, thus enforcing the requirements of the Decision.

Cost implications	Introduction of the Decision has resulted in additional administrative and resource burdens on the authorities as well as on the waste industry. The Decision has resulted in additional costs for the landfill operator because of the need to spend more time and therefore resources on interpreting the Decision, preparing and following procedures, e.g. checking through all of the chemical testing data generated by waste producers, not only for existing customers but also for all queries received from potential customers which are accompanied by chemical testing results for the waste in question. However, it is acknowledged that the Council Decision provides a useful and indeed essential tool in helping control waste acceptance at landfills. The cost of a characterisation procedure including batch leaching testing is EUR 182 for inert waste and EUR 120 for non-hazardous waste.
Sampling and test methods	<p>An area of weakness at the national level with respect to the implementation of the Decision is the lack of any national guidance or standard for representative sampling to characterise waste. It is understood that the EPA has not set a national standard and neither have they encouraged or advised the use of the European (draft) standard (pr)EN 14899 ‘Characterisation of Waste - Sampling of Waste Materials: Framework for the Preparation and Application of a Sampling Plan’. They have addressed this issue for some specific sites e.g. an inert waste landfill in an active limestone and shale quarry, where the waste licence sets a sampling frequency for basic characterisation of at least 1 sample per 1500 tons of waste in order to be considered representative.</p> <p>Regarding testing standards, recent waste licences include conditions which refer to CEN and the standards and methods set out in the Decision.</p>
Problems experienced	The problems identified in implementing the Decision in Ireland concern implementation of the requirements for basic characterisation by small enterprises. This sector typically represents difficulties due to a lack of awareness of the requirements of environmental legislation. Many of these waste producers are cash-paying customers who may show up at the landfill site on irregular occasions with small loads of waste and with little knowledge of waste acceptance procedures. Implementing the Decision among this sector is likely to be challenging. The EPA intends to publish guidance on the Decision in 2007. It is expected that this will accelerate the wider implementation of the Decision. It will be important to get this guidance out into the SME sector. Notwithstanding this, there is a danger that these producers may seek alternative illegal means of disposing of their waste in order to avoid additional cost and administrative burden.
Summary	<i>In summary, implementation of the Decision in Ireland is ensured through the landfill permits. EPA has concentrated on newer landfills to ensure that these are in compliance. By contrast, some older landfills with little capacity remaining and with older licences have not yet been targeted in terms of amending their licenses to include the specific requirements of the Decision. Only half of the sites which are to close down before 2009 possess a license with references to the requirements of the Council Decision. Thus, a clear differentiation can be ob-</i>

served between sites which are to continue and sites which are to close down, in terms of level of compliance with the Decision. Sampling standards are not in place yet, and they are defined on an ad hoc basis. Similarly to the situation in Hungary, the administrative burden and the costs for testing and analysis required are considered a problem, especially for small and medium-sized waste generators. This sector typically represents difficulties due to a lack of awareness of the requirements of environmental legislation. Implementing the Decision among this sector is likely to be challenging. The Irish EPA intends to publish guidance on the Decision in 2007. It is expected that this will accelerate the wider implementation of the Decision.

4.1.4 Slovenia

Context

In 2005, approximately 800.000 tons municipal waste were collected by public waste management companies in Slovenia. About 80% of this waste was landfilled¹⁰⁰. In the same year, over 5.5 mio. tons industrial waste was generated, over 5.4 mio. tons thereof non-hazardous wastes. Around 1.2 mio. tons of the total industrial waste was landfilled, the vast majority internally¹⁰¹.

An inventory from 1999 established the existence of 83 registered landfill sites, thereof 23 industrial sites and 60 municipal waste sites. According to the Ministry of the Environment, it is expected that 23 sites, thereof 19 sites for non-hazardous waste (14 municipal waste sites and 5 industrial waste sites), one hazardous industrial waste site and 3 industrial inert waste sites, will continue operations after 2009. It is planned that after 2008, 14 centres for municipal (non-hazardous) waste will be established. A new operational program dealing with the establishment of such regional infrastructure, is currently under preparation. There are 37 landfill sites which have received a national permit providing for continued operation, subject to technical adjustments, until 31 December 2008, at which time they will close.

Legislative framework

Initially, waste acceptance criteria and leaching tests were contained in the Slovenian Rules on the management of waste of 1998, as amended in 2000, in line with Article 16 and Annex II of the EU Landfill Directive. The requirements of the Council Decision are now laid down in the Decree on the Landfill of Waste of March 2006.

Thus, in Slovenia, waste acceptance procedures and criteria are in principle directly binding on waste generators and producers through the Decree, although environmental permits required for landfills regularly also set out details regarding waste acceptance procedures, and in particular on-site-verification.

Within the legal framework set by the Ministry for Environment and Spatial Planning, the Environmental Agency is generally responsible to ensure the pro-

¹⁰⁰ Statistical Office of Slovenia, at http://www.stat.si/pxweb/Database/Environment/27_environment/02_waste/27061_waste_removal/27061_waste_removal.asp

¹⁰¹ http://www.stat.si/eng/novica_prikazi.aspx?id=463

per implementation of all waste legislation, including the national legislation on waste acceptance criteria and procedures. Enforcement is ensured by the Inspectorate for the Environment and Spatial Planning through inspections and verifications.

The 37 landfill sites mentioned above, which are foreseen to be closed down by 31 December 2008 are subject to waste acceptance criteria and procedures as laid down in their technical adjustment program. To the extent possible, the requirements of the EU Council Decision are reflected in those technical adjustment programs, but in some cases, certain requirements of the Decision are not fully implemented. This is explained by the fact that there are certain capacity restrictions in terms of landfills that are fully compliant with the requirements of the EU Landfill Directive. Thus, in the interim, those landfills that are not fully compliant, and are foreseen to be closed because of that fact, continue to operate. These landfills are, however, subject to regular reporting and monitoring obligations and are supervised by the Inspectorate for Environment and Spatial Planning.

Enforcement and sanctions

Sanctions for non-compliance with the waste acceptance procedures and criteria include fines between EUR 4.000 and EUR 40.000 that may be imposed on the landfill operator. In addition, in those cases, the person responsible for ensuring compliance with waste acceptance procedures and criteria at the site of the landfill operator can be fined between EUR 1.200 and EUR 12.000. Where the waste producer is responsible for ensuring basic characterisation (see below), inconsistencies may be sanctioned by the imposition of fines of up to EUR 40.000. Furthermore, in relation to institutes carrying out testing and sampling, where an inconsistency between the waste characterised and the waste actually delivered is observed, the competent environmental inspector, himself so informed by the waste producer or waste generator, may inform the Ministry of Environment and Spatial Planning of this inconsistency, following which the authorisation of the institute or person responsible for basic characterisation may be revoked by the Ministry. Such action would be additional to the imposition of a fine on the waste generator or landfill operator, legally responsible for ensuring basic characterisation in line with the legal requirements.

Level of implementation compared to the Decision

The national Slovenian legislation corresponds to the requirements of the Council Decision. It does not provide for more stringent requirements.

Division of responsibilities amongst stakeholders

The responsibilities of the various stakeholders for ensuring compliance with the acceptance criteria and procedures may briefly be summarised as follows:

- With the exception for municipal wastes (see below) **waste generators** have to assure basic characterisation of their wastes. The results of basic characterisation must be submitted on a standard formular. At the time of waste disposal, basic characterisation results may not be older than 12 months.
- In the case of municipal wastes, the **landfill operator** has to ensure basic characterisation. It must be performed every 6 months. Landfill operators

are also required to ensure compliance testing and visual inspections. The landfill operator must assign responsibility for ensuring compliance with waste acceptance procedures and criteria to a responsible person, and a substitute has to be nominated as well. Where compliance testing has not been performed in those cases where it falls under the responsibility of the waste generator, or where the waste delivered does not correspond to the basic characterisation, the landfill operator must inform the competent inspector and may not accept the waste delivered.

- All sampling and testing must be carried out by **independent authorised and accredited persons or institutes**. Accreditation is given by the national accreditation service. The Ministry of Environment and Spatial Planning is responsible for granting authorisations. They are granted for maximum 6 years at a time. Landfill operators and waste producers may not themselves carry out sampling and analysis in the context of basic characterisation and compliance testing.
- As mentioned above, the **Slovenian Inspectorate for Environment and Spatial Planning**, under the responsibility of the Ministry of Environment and Spatial Planning, carries out inspections to ensure compliance with the waste acceptance procedures and requirements and enforce the legislation.

Cost implications

In terms of costs, it has been estimated by one stakeholder interviewed for the study, a waste landfill operator responsible for the characterisation of municipal waste, that testing costs in the context of basic characterisation of non-hazardous wastes amount to EUR 250 to EUR 850. As described above, those costs arise for waste generators where they are responsible for basic characterisation. In the case of basic characterisation of municipal waste as well as for all testing in the context of compliance testing, the costs are borne by the landfill operators.

Practical Enforcement Experience

In October and November 2006, the Inspectorate for Environment and Spatial Planning carried out a specific control exercise directed, inter alia, at the supervision of the waste acceptance criteria. 45 landfills were included in the study, 28 of those landfills have an environmental permit to operate, and 17 of those landfills either are still waiting to receive an environmental permit to operate or have a closure decision for 31 December 2008. The goals of the exercise were to contribute to the uniform application of waste management requirements in all inert and non-hazardous landfills, inter alia to ensure compliance with the requirements of basic characterisation and on-site verification requirements.

The action resulted, inter alia, in the following findings:

- Some of the testing required for basic characterisation, to be performed by independent authorised and accredited entities, was not performed professionally. Landfill operators were directed to reject waste thus characterised in the future.
- In all 18 operators could provide proof for basic characterisation in line with the legal requirements, in other cases, the basic characterisation was either too old or was insufficient or missing.
- Visual inspection was determined to be performed adequately by 41 of the landfills covered by the action, weighing was determined to be performed adequately by 44 of the landfills.
- In all, 25 inspected landfills were found to operate in line with their permits, the performance of the remainder was judged to be insufficient or partially insufficient¹⁰².
- In all, 37 inspectorate warnings were given, and in one case a formal decision stating inconsistencies has been issued¹⁰³.

Sampling and test methods

In terms of test methods, CEN, ISO and DIN standards apply. In terms of sampling, (pr)EN14899 applies.

Problems experienced

In terms of problems identified, no issues specifically linked to the Council Decision were raised. However, in more general terms, the following general issues were raised affecting the proper application of the waste acceptance procedures and criteria in Slovenia:

- The process of closure of landfills as well as the reconstruction and expansion of existing landfill sites which will eventually continue operations by 2009 and beyond is in full progress, with the priority set on those sites that will eventually function as regional waste management centres. Those landfill sites which will not continue to operate are not always following the requirements of the Council Decision in full, due to a lack of "fully compliant" capacities.

¹⁰² However, this number refers to the conclusions covering all aspects of the exercise, also insofar as it was directed at other aspects than wastes acceptance criteria (the exercise also aimed at ensuring the reduction of the landfilling of biodegradable waste, and to ensure the redirection of packaging wastes in line with packaging legislation).

¹⁰³ See previous footnote.

- It is also considered that the Decision overall has led to increased administrative burdens - and costs - on landfill operators and waste generators, in addition to increased testing requirements and their costs.

Summary

The requirements of the Council Decision are laid down in a national Decree on the Landfill of Waste of March 2006. The landfill sites which are foreseen to be closed down by 31 December 2008 are subject to waste acceptance criteria and procedures as laid down in their technical adjustment program. To the extent possible, the requirements of the EU Council Decision are reflected in those technical adjustment programs, but in some cases, certain requirements of the Decision are not fully implemented. A control action carried out at the end of 2006 showed a number of deficiencies in the proper application of the requirements by landfill operators. It is considered that the Decision has led to increased administrative burdens - and costs - on landfill operators and waste generators, in addition to increased testing requirements and their costs.

4.1.5 Spain

Introductory remark: due to the difficulties experienced in receiving information from stakeholders in regional governments, the autonomous regions being competent for the implementation and enforcement of acceptance criteria and procedures, the information available for Spain is relatively scarce. Also, it proved not to be possible to interview a landfill operator. The following summary is based on the information as collected in the desk study, and as partially received from representatives of the central and regional governments. The central government does, at this stage at least, not dispose of comprehensive information regarding the status of regional implementation. Two representatives from regional governments (Madrid and Navarra) have provided very punctual information only.

Context

In 2004¹⁰⁴, about 27.5 mio. tons of municipal waste were generated in Spain, and about 29.5 mio. tons industrial wastes, thereof approximately 3.3 mio. tons of hazardous wastes. Of the municipal wastes, more than 71% were submitted to disposal operations. In 2003, where comparable amounts of municipal waste generation were reported¹⁰⁵, close to 55% of these wastes were landfilled¹⁰⁶. Of the industrial wastes, 43% were disposed of. As of December 2003, around 390 non-hazardous landfills were in operation in Spain, and around 623 inert waste landfills. According to a recent press release from the Ministry of Environment, 8 hazardous waste landfills are in operation in Spain to date.

Legislative framework

In Spain, national waste legislation is formulated by the Ministry of Environment, but is implemented, enforced and monitored by the autonomous regional

¹⁰⁴ Press release of the Spanish National Statistical Institute of 1 December 2006, <http://www.ine.es/prensa/np435.pdf>

¹⁰⁵ European Topic Centre on Resource and Waste Management, Country fact sheet: Spain, at http://eea.eionet.europa.eu/Public/irc/eionet-circle/etc_waste/library?l=/country_fact_sheets/spainpdf/_EN_1.0_&a=d

¹⁰⁶ On the basis of figures in the Country fact sheet: Spain, see previous footnote.

governments. Thus the EU Landfill Directive was transposed through Royal Decree 1481/2001, including considerations on waste acceptance criteria and procedures as per the Directive's Annex II, i.e. defining a compulsory in situ verification. Elements of basic characterisation and compliance testing are also addressed in the Royal Decree, albeit not compulsory (as in Annex II of the Landfill Directive). With respect to basic characterisation, the Royal Decree requires specific data to be submitted, including on leaching tests performed according to a German leaching test standard, DIN 38414-S4 (i.e. a different percolation test than the one provided for under the Council Decision). The Royal Decree also stipulates (albeit in a non-compulsory manner) compliance testing at intervals of 200 tons of waste sent to landfill, or once a year in case of smaller volumes or uniform waste deliveries. The Decree does not contain any quantitative criteria regarding the acceptance of waste at landfills in Spain.

Regarding sampling, in 2006, the European standard EN 14899: 2005 has been adopted at the national level. Laboratories must be "competent laboratories" according to a Royal Decree on Quality and Industrial Safety Infrastructures (RD 2200/1995).

A national decree implementing Decision 2003/33/EC has not been issued, nor have national instructions, guidance material, etc. been issued for the implementation of the Decision. It appears that none of the regions have adopted legislation specifically implementing Decision 2003/33. According to the information received in the course of the study from the central government, the regional governments stipulate the waste acceptance criteria and procedures from the Decision in the landfill authorisations in a case-by-case manner, defining limit values of composition and leachate tests.

The central government does not dispose of comprehensive information on the implementation of waste acceptance criteria and procedures in the autonomous regions, although it has stated that waste acceptance criteria have started to be included in "most" landfill authorisations, without further substantiation, however. In order to enable it to fulfil its reporting requirements vis-à-vis the Commission, the Royal Decree 1481/2001 stipulates that the regions have to inform the central government about waste acceptance criteria and procedures every three years.

Situation in Catalonia

Prior to the Council Decision, some regions, e.g. the Autonomous Region of Catalonia had developed waste legislation related to waste acceptance criteria in landfills. The Catalan regime is laid down in Regional Decree 1/1997 on the disposal of waste in landfills. The Decree defines three classes of landfills; I - landfills for inert wastes, II - landfills for non-hazardous ("non-special" wastes) and III - landfills for hazardous wastes ("special wastes"). An Annex to the Decree contains acceptance criteria, both regarding composition and leachate behaviour, for each type of landfill, including leachate acceptance criteria according to the German leaching test standard, DIN 38414-S4. Some parameters are the same as included in the Council Decision, but not all parameters are included. On the other hand, additional parameters are included. This legislation has apparently not been repealed yet. As it is not compliant with the re-

quirements of the Council Decision, this would have to be considered an infringement of Community legislation¹⁰⁷.

Situation in Navarra and Madrid

Two of the autonomous regions, Navarra and Madrid have provided partial information in the context of the study. In neither region has implementing legislation been adopted.

Navarra

In Navarra, some waste acceptance procedures seem to be in place. It has been stated that basic characterisation requirements are in line with the requirements of the Council Decision regarding basic characterisation. Verification of documentation provided by the waste generator is done by the landfill operator as is compliance testing and on-site verification. Compliance is stated to be enforced through inspections by the competent authority of regional government. However, it is also noted that in practise testing is not (yet) implemented as required by the Decision, the reasons therefore given being costs and lack of qualified staff. No information was provided regarding the comparability of the acceptance criteria of the Decision with those applied by the Autonomous Region of Navarra, except it was stated that criteria for landfills for non-hazardous waste applied as required in the Council Decision, Section 2.2. It was also stated that the possibility, under the Council Decision of applying three-times-higher limit values under certain conditions, was not applied in Navarra. In Navarra, it is expected that 7 landfills for non-hazardous waste will continue operation after 2009. Three of these have received permits for continued operation in line with the requirements of the Decision.

Madrid

For Madrid, even less information was provided. It was stated that in municipal landfills, municipal waste is accepted only performing in-situ verification. Industrial waste similar to municipal waste is also in principle accepted but subject to documentation by the waste generator. If there are reasons for doubt regarding the acceptability of such waste in municipal landfill sites, the regional government may demand the waste generator to carry out a basic characterisation to identify the hazard potential.

In the case of both regions, it appears obvious that the requirements of the Council Decision are at best very partially applied in practise.

Problems experienced

Significant obstacles in the context of the implementation of the Decision have been identified as follows:

- Classification of the waste in the stipulated three categories (inert, non-hazardous, hazardous) has proven to be difficult for some types of hazardous waste, e.g. ashes or slag with high salt content or wastes from inverse osmosis treatments. These waste types often have concentrations exceeding the limits given in the Decision for hazardous waste accepted at hazardous waste landfills, and feasible treatments do not exist.

¹⁰⁷ However, according to informaiotn received from the national expert involved in the study after submission of the draft final report, a draft for new regional legislation in Catalonia on acceptance criteria has been published and is open for comments until the end of June 2007. This new legislation will substitute Decree 1/1997.

- Hazardous waste stabilised by solidification might fulfil the waste acceptance criteria for hazardous waste to be landfilled with inorganic non-hazardous waste (Annex B, Section 4). However, according to the Royal Decree 1481/2001, the stabilised waste must undergo further treatment other than solidification, in order to change the chemical and toxic properties. This means that the current legislation (Decree 1481/2001) is stricter in terms of requirements for co-disposal of inorganic non-hazardous and stable, non-reactive hazardous waste than the Decision.

Summary

From the punctual information available for Spain, the situation may be summarised as follows: The Council Decision is not legally implemented at the national level, although Royal Decree 1481/2001, transposing the requirement of Directive 1999/31/EC includes general considerations on waste acceptance criteria and procedures as per the Directive's Annex II, i.e. defining a compulsory in situ verification. Elements of basic characterisation and compliance testing are also addressed in the Royal Decree, albeit not compulsory. The responsibility for the implementation and the enforcement of the Decree lies with the authorities of the autonomous regions. The central government does not dispose of comprehensive information on the implementation of waste acceptance criteria and procedures in the regions, although it has stated that waste acceptance criteria have started to be included in "most" landfill authorisations without further substantiation, however. From the punctual information available both from the autonomous regions of Navarra and Madrid, it appears obvious that the requirements of the Council Decision are at best very partially applied in practise. The central government has identified a number of technical problems related to the practical implementation of the Decision.

4.1.6 Sweden

Context

In the year 2000, 23% of municipal waste was landfilled in Sweden. This share has been further reduced in recent years and in 2004, only 9% of municipal waste was landfilled. 46% was incinerated, which means that a large proportion of municipal waste in Sweden is recycled. In other words, landfilling is only a minor part of the total waste management system in Sweden in terms of waste amounts as well as in terms of policy interest.

Today, around 300 landfills are in operation in Sweden. According to a rough estimate by the Swedish EPA, after 2009 those will be reduced to 150 sites, of which 50% industrial waste sites and 50% municipal waste sites.

Legislative framework

The system of waste acceptance procedures prior to the Council Decision did not include waste acceptance criteria or requirements for leaching testing of waste. The system did not include compliance testing either, but only a simple form of waste characterisation and visual checking of every load of waste on site.

Decision 2003/33/EC was implemented effective from 1 January 2005 in "Foreskrifter (NFS 2004:10) om deponering", as subsequently amended by "Foreskrifter NFS 2005:9". According to NFS 2005:9, waste generators in

Sweden have the responsibility for basic characterisation and compliance testing. Landfill operators are responsible for on-site verification. A new guidance on waste acceptance procedures targeted towards waste generators, landfill operators as well as inspectors was to be published in the beginning of 2007.

Requirements regarding waste acceptance procedures as well as basic characterisation are directly binding on waste generators and landfill operators via the above-mentioned legislation. However, in most cases requirements targeted towards operators will be repeated in the individual environmental permit, depending on the authority issuing the permit.

Enforcement and sanctions

The Swedish regulatory control focuses on waste generators, as they are obliged to carry out basic characterisation and compliance testing. New guidance for inspectors explains how to check whether or not waste generators fulfill the requirements laid down in the waste acceptance procedures. The competent authority for inspection has to check for compliance with the Swedish Regulation. This is done by controlling administrative documents, looking at samples and tests. Landfill operators as well as waste generators are required to store all documentation on waste deliveries for 10 years. Ultimately, waste generators will be sanctioned if basic characterisation does not full fill the requirements.

In case of non-compliance with the requirements, waste generators or operators will be ordered by administrative act to achieve compliance. In case no improvements are seen, fees can be used as sanction. They have been stated to be "small", although legally there is no upper limit. Their level is decided on a case-by-case basis. According to the respondent from the Swedish Waste Association, no fees have yet been imposed in view of non-compliance with requirements of the Decision.

Level of implementation compared to the Decision

In general, the Swedish implementation is not very different from the requirements laid down in the Decision. However, some variations can be observed:

- The Swedish regulation specifically stipulates that hazardous waste is not accepted on landfills for inert waste, even where this waste would meet the waste acceptance criteria.
- Inert waste in most cases is landfilled on sites for non-hazardous waste to avoid the requirements for testing which would apply if the waste was landfilled on a site for inert waste (at least if they are not exempted from testing pursuant to Section 2.1.1. of the Council Decision).
- The respondent from the Swedish EPA interviewed for the purposes of the study stated that non-hazardous waste will not have to be tested, referring to the legislative text in "Foreskrifter om deponering", §12 (NFS 2004:10). This is further confirmed by stakeholders from regional authorities as well as waste associations. Again, this approach is different from the other Member States studied.
- Furthermore, a clear differentiation can be observed between sites which are to continue operations beyond 2009, and sites which are to close down,

in terms of level of compliance with the Decision. This is in fact, based on the requirements laid down in NFS 2004:10 which states that on-site verification in line with the Decision should be implemented by 31 December 2008 at the latest for existing sites. New landfills or sites which have received new environmental permits have been required to do on-site verification in line with the Decision since 1 January 2005. In practice, this results in a situation where waste delivered to new sites will be stringently checked by operators against the requirements of the Decision, whilst waste delivered to all other sites will be checked by operators in line with the former mode of on-site verification specified on a case-by-case basis. Consequently, basic characterisation is primarily implemented for those waste generators that deliver waste to those sites that perform on-site verification in line with the Decision. As testing as part of basic characterisation is only required for hazardous waste and inert waste, the impact of the differentiation might not be as substantial as it sounds. Hazardous waste in Sweden is disposed at only one site which does comply with the requirements pursuant to the Decision. Furthermore, as documented through a regional study in 2005 (see below) almost all hazardous waste generators carry out basic characterisation including batch leaching tests.

Division of responsibilities amongst stakeholders

The responsibility of the various stakeholders in the application of waste acceptance procedures and criteria can be summarised as follows:

- The **Environmental Protection Agency** (Naturvårdsverket) formulates all legislation regarding landfills and produces guidance documents.
- Requirements for basic characterisation are directly binding for all waste generators that landfill their waste. **Waste generators** are also responsible for setting up the program of compliance testing as well as carrying out compliance testing.
- **Landfill operators** have the responsibility for on-site verification, thus checking that all deliveries of waste are in accordance with the requirements for basic characterisation and compliance testing.
- According to NFS 2004:10, all analysis for basic characterisation and compliance testing must be carried out by **accredited laboratories**. Landfill operators are seldomly involved in the sample taking and analysis. Mostly, samples are taken by the waste generators and the actual analysis is carried out by laboratories.
- **Regional and local inspection authorities** inspect landfills sites and at waste generators.

Practical Enforcement Experience

In 2005, the County of Gävleborg carried out a study targeted towards all large waste generators to document the status of implementation regarding waste acceptance procedures. The study was carried out through questionnaires sent to each company. They had one month to answer the questionnaire. All companies provided answers. The study showed that:

- 43% had their waste delivered to a waste transfer station, thus they are not required themselves to do basic characterisation or compliance checking. The obligation is then on the sorter that subsequently delivers the waste to the landfill.
- 57% of the companies had waste delivered directly to a landfill, thus they had to do basic characterisation.
- 22% were generators of hazardous waste. 80% of these had made leaching tests as part of basic characterisation. 60% of the generators of hazardous waste had compliance test programs. At the time, none of the waste generators had carried out compliance testing yet.
- 6% of the companies had inert waste delivered to a landfill. All of these perceived that their waste did not require testing as part of basic characterisation.

Furthermore, the study showed that among small waste generators many did not understand the difference between basic characterisation and testing. Overall, the level of awareness and knowledge of small waste generators should be increased.

The county is stated to be representative for Sweden as a whole in terms of industrial structure and general level of compliance with environmental regulation. Three counties in Sweden have carried out similar regional studies. The results however, are not collected at the national level¹⁰⁸.

Cost implications

The cost of a characterisation procedure including batch leaching testing is estimated to be between EUR 600 and EUR 1000 for hazardous waste.

Sampling and test methods

In Sweden, most samples are taken by the waste generators either for use in basic characterisation or in compliance testing. Laboratories do the analysis. Laboratories must be accredited. The EN standard on sample taking (i.e. (pr)EN 14899) applies.

Problems experienced

One major problem has been identified by the Swedish EPA in implementing the Decision. Certain wastes, primarily ash from waste incineration but also certain industrial wastes, do not meet the limit values of the acceptance criteria for hazardous waste and cannot be landfilled in Sweden. These wastes contain excessive chloride and sulphate contents, even with the case-by-case increase to three times the limit value. Consequently this waste is at the moment exported to Norway and Germany. The Swedish EPA believes that it should be possible

¹⁰⁸ It has been suggested by the Swedish regional stakeholder interviewed for the Swedish report, that such study be carried out in all Member States in order to document the level of actual compliance across the EU.

to increase the limit values further for these waste types on a case-by-case basis. As groundwater protection in some areas does not have the same importance in Sweden as in other countries, these areas could easily be used for landfill of these waste types without reducing the overall environmental protection level.

Summary

The Decision has been legally implemented at the national level. A clear differentiation can be observed between sites which are to continue operations beyond 2009, and sites which are to close down, in terms of level of compliance with the waste acceptance procedures of the Decision. A regional enforcement action directed at waste generators (that have the principal obligation for basic characterisation and compliance checking in Sweden) has shown that most companies producing hazardous waste had conducted basic characterisation of their waste including batch leaching tests. More than half had established programs of compliance testing but none of them had started doing compliance testing yet. Generally speaking, it appears that the larger companies are better vested to fulfill the requirements of the Decision, and that smaller waste generators are not sufficiently aware of their obligations. The Swedish EPA plans to issue further guidance for all stakeholders later this year. In terms of problems, Sweden raised a technical issue related to the practical application of limit values for specific wastes, previously also mentioned by Germany and Hungary.

4.2 Cross-country assessment

4.2.1 National implementation framework and context

Legislation

Information gathered from the Member States subject to the study shows variances in the legal implementation of the Decision. All Member States have adopted implementing legislation at the national level, but in the case of two countries, Ireland and Spain, this legislation only transposes the requirements of Annex II to Directive 1999/31/EC on the landfill of waste, and no specific legal instrument has been adopted at the national level with regard to Decision 2003/33/EC. Whereas in the other four countries (Germany, Hungary, Slovenia and Sweden), the Decision's requirements are binding on waste generators and landfill operators via the national implementing legislation, in Ireland and Spain, the individual landfill permits issued to operators give effect to the requirements of the Decision¹⁰⁹. Slovenia and Sweden also utilise environmental permits as an instrument to ensure application of the requirements at the individual site, though in these Member States, what is written in the permit regarding waste acceptance procedures is not a legal precondition for application but more like a guidance/instruction for the operator.

¹⁰⁹ Insofar as waste generators are implied in Ireland, there is other legislation in place regarding documentation requirements that legally binds those. No further information is available for Spain.

Prior application of waste acceptance procedures/criteria

Three Member States, Ireland, Slovenia and Germany had some prior experience with waste acceptance procedures including testing as laid down in the Decision. In Ireland, prior to the adoption of the Decision, landfills for the disposal of sludge have been required to do eluate and toxicity testing to characterise waste prior to acceptance. These procedures included level 1, 2 and 3 testing very similar to the scope of the requirements of the subsequent Council Decision. In Slovenia, waste acceptance procedures were regulated through the Rules on the management of waste, (OJ RS, No. 84/1998, as subsequently amended). These rules also contained some acceptance criteria as well as requirements for leaching tests although not at the same extended level as is now prescribed by the Council Decision. Germany had extensive waste acceptance procedures and criteria in place prior to the Decision (but has only very recently - February 2007 - fully adapted them to the requirements of the Council Decision. Thus, the majority of Member States surveyed¹¹⁰ does not have an extensive experience with criteria and procedures comparable to those stipulated by the Decision, and, generally speaking, the level of knowledge and awareness of all stakeholders, including national authorities in most cases, is therefore still deficient.

Context of ensuring compliance with the Landfill Directive

In addition, all Member States are still in the process of preparing for the full application of all requirements pursuant to the Landfill Directive to all landfills from 16 July 2009. As will be discussed in more detail below, some amount of uncertainty was observed with Member State's authorities as to the timing of application of the waste acceptance criteria and procedures with regard to "existing" landfills addressed in Article 14 of the Landfill Directive. In this context it could be observed that typically those Member States where enforcement competences lie at the regional level, did not dispose of any precise information on the status of implementation of the Landfill Directive with regard to existing and new sites, and were not in a position to provide more precise information on the number of landfills that will be in operation from 16 July 2009. By contrast, in Slovenia and Ireland (and to some extent, Sweden) a rather clear picture of how many sites will be permitted to continue operations after 2009 and the level of compliance on these sites is established. This is not the case for Germany and Hungary, and indeed not for Spain.

The following table list the legal implementation measures in place in each of the Member States subject to the study.

¹¹⁰ The Member States surveyed, were selected, inter alia on the basis of advanced waste management frameworks and in view of representativity. Thus, it is highly likely that the statement would be valid for all Member States.

Table 4.1 *Legal implementation*

Member State/legal implementing act(s)	Year of adoption (Date of entry into force)
Germany	
<ul style="list-style-type: none"> Ordinance on the environmentally sound disposal of municipal wastes Ordinance on landfills and long term storage both amended by the Ordinance for the implementation of Council Decision of 19 December 2002 establishing criteria and procedures for the acceptance of wastes at landfills 	2001 (1.1.2001) 2002 (1.8.2002) 2006 (1.2.2007)
Hungary	
<ul style="list-style-type: none"> Ministerial Decree No 22/2001; X.10; amended by Ministerial Decree No 20/2006; IV.5 	2001 2006
Ireland	
Waste Management (Licensing) Regulation 2004 (Statutory instrument No. 295 of 2004) ¹¹¹ , giving effect to Article 16 and Annex II to the Landfill Directive	2004
Slovenia	
Decree on the Landfill of waste	2006
Spain	
Royal Decree 1482/2001 ¹¹²	2001
Sweden	
<ul style="list-style-type: none"> Decree on landfilling of waste (2004:10) amended in Decree NFS 2005:9 	2004 (1.1.2005) 2005 (16.7.2005)

Guidance documents

Several of the Member States examined, have issued or are in the process of issuing guidance documents regarding the requirements of the Decision and their national implementation, or certain aspects thereof.

- In **Ireland**, the Irish EPA has published guidance on acceptance of hazardous waste on landfills for non-hazardous waste as this is perceived to be problematic. Furthermore, the EPA expects to publish guidance on the implementation of the Decision targeted towards small waste producers as it seems that the requirements for basic characterisation is particular difficult to implement by those.
- In **Hungary** a guideline is expected to be produced by the Ministry. The guideline will be targeted towards laboratories, waste producers and land-

¹¹¹ Article 50 (6) (b) gives effect to Article 16 and Annex II to the Landfill Directive

¹¹² Transposing the EU Landfill Directive, including Annex II of the Directive. At regional level, in Catalonia, Regional Decree 1/1997 stipulates waste acceptance criteria and procedures.

fill operators. The issues to be covered are expected to be general guidance in the implementation of the requirements of the Decision, including more specifically standards and procedures for testing of each component supplemented with guidance on which type of wastes may be tested for a reduced number of components only. The timing of publication of this guidance is uncertain¹¹³.

- In **Slovenia** a guidance document on closing down or restructuring old landfills was published in 2003.
- In **Sweden** the "Handbook om allmänna råd (NFS 2006:XX)" was to be published in the beginning of 2007. This document is targeted towards waste producers, waste operators and regional inspectors explaining the details on the requirements of the Decision.

In **Germany**, no guidance documents have been issued at the federal level, or at the level of the Länder¹¹⁴. No guidance documents have been prepared in **Spain** at the national level. No information is available regarding guidance issued by the autonomous regions.

Institutional set-up,
enforcement and
sanctions

In the majority of Member States examined, the regulation of acceptance criteria and procedures implementing the Council Decision is at the level of the central government. Only in **Spain**, it seems, do the autonomous regions retain the power to pass implementing legislation, e.g. as may be observed in Catalonia¹¹⁵. The supervision of the implementation is either at the central level (**Hungary, Ireland, Slovenia, and Sweden**) or at the regional level, in those Member States with federal structures (**Germany and Spain**). In those Member States with a federal or regionalised structure (**Germany, Hungary, Spain and Sweden**), enforcement is situated at the regional or local level, whereas in Ireland and **Slovenia** enforcement is situated at the central level.

¹¹³ In any case, publication will be after 2007 only, due to financial constraints.

¹¹⁴ Information from a respondent at the Hessian Ministry of Environment: to his knowledge such guidance, directed at landfill operators and waste generators has not been developed in other Länder either. In Hessen, guidance has been developed addressed to authorities, on "PN 98" (the German document stated by the Federal Environment Ministry to implement the CEN sampling standard).

¹¹⁵ Although the Catalanian legislation dates from 1997, i.e. before adoption of the Landfill Directive and the Council Decision.

Table 4.2 Institutional set-up

Member State	Competence	Administrative unit
Germany	Policy, legislation and guidance	Federal Ministry of Environment and the Federal Environment Agency (as advisory body to Ministry)
	Implementation	Länder administration
	Enforcement	Regional or county/local level
Hungary	Policy, legislation and guidance	The Ministry of the Environment
	Implementation	Inspectorate of the Environment
	Enforcement	Regional environmental authorities
Ireland	Policy, legislation and guidance	Environmental Protection Agency
	Implementation	Environmental Protection Agency
	Enforcement	Environmental Protection Agency
Slovenia	Policy, legislation and guidance	Ministry of the Environment and Spatial planning
	Implementation	Environmental Agency
	Enforcement	Inspectorate for the Environment
Spain	Policy, legislation and guidance	National and regional level
	Implementation	Autonomous regions
	Enforcement	Autonomous regions
Sweden	Policy, legislation and guidance	The Ministry of the Environment through the Environmental Protection Agency
	Implementation	The Environmental Protection Agency
	Enforcement	Regional and municipal authorities

In five Member States, the requirements of the Decision are primarily enforced through inspections of landfill operators. In **Sweden** the Decision is primarily enforced through the inspection of waste generators to check whether their documentation of waste deliveries is in accordance with the requirements of the Decision. Waste generators will be inspected in **Hungary** as well. The specific coverage of waste generators for the purposes of ensuring enforcement of the Decision's requirements in those two Member States, is likely due to the fact that both in Hungary and in Sweden, waste generators have obligations going beyond data provision (including testing) for basic characterisation, but also including compliance checking requirements (see also below).

In four Member States (**Germany, Hungary, Slovenia and Sweden**) sanctions apply for non-compliance with national legislation. They may be imposed on landfill operators and/or waste generators depending on the violation at issue.

In one country (**Slovenia**) the responsible person at the landfill site may be fined personally. The level of sanctions ranges between EUR 4.000 and EUR 50.000 EUR for breaching the requirements of the Decision (or national implementing legislation). In **Hungary** the level of the sanction is calculated based on the volumes of waste at issue, the environmental risk posed, and the case history. The basic sanction level is EUR 800. In **Sweden**, "small" sanctions may apply, decided on a case-by-case basis, but there is no upper limit of the sanction. No financial sanctions have yet been issued in Sweden. In **Ireland**, there is no cost penalty for non-compliance with the Decision. No information is available for the other Member States whether or not sanctions have actually been issued., i

Table 4.3 Level of fee

Country	Level of fee
Germany	<50.000 EUR
Hungary	> 800 EUR/t waste
Ireland	no monetary sanctions apply
Slovenia	4.000- 40.000 EUR; and a personal fee to be imposed on responsible person at landfill site of 1.200-12.000 EUR
Spain	N/D
Sweden	"small" fees; no upper limit

4.2.2 National implementation

In the following Section we compare how Member States have actually implemented the requirements of the Decision at the national level

Waste acceptance procedures: Basic characterisation

In all Member States except Germany, waste generators are legally responsible for *basic characterisation*. However, also in **Germany**, waste generators are responsible for providing all information and data necessary for carrying out a basic characterisation, including testing data, but the landfill operator is legally responsible to actually carry out the basic characterisation. In **Slovenia**, in the case of municipal waste, the landfill operator is responsible for basic characterisation of such waste.

Table 4.4 Responsibility for basic characterisation

Responsibility for basic characterisation	GER	HUN	IRL	SLO	ESP	SWE
Waste producers/generators	(x) ¹¹⁶	x	x	x	x ¹¹⁷	x
Landfill operators	x			(x) ¹¹⁸		

¹¹⁶ Providing information and data.

¹¹⁷ For the Autonomous Region of Navarra.

According to the Decision Section 1.1.1 (d) one part of basic characterisation is to determine the scope and frequency of compliance testing, termed the program of compliance testing. The function of compliance testing is to periodically check if waste streams comply with the results of the basic characterisation. The responsibility for **compliance testing**, is either on waste generators or on the landfill operator.

Compliance testing

Table 4.5 Responsibility for compliance testing

Responsibility for Compliance testing	GER	HUN	IRL	SLO	ESP	SWE
Waste producers/generators		x				x
Landfill operator	x		x	x	x ¹¹⁹	

As the program of compliance testing is set through basic characterisation, scope and frequency is necessarily set individually. As a minimum, compliance testing must be carried out at least once a year according to the Decision. As can be seen from the examples below variations, can be observed regarding the program of compliance. Some Member States set the interval determined by delivered amounts and not (only) as a frequency determined by time. In **Ireland**, each individual operator decides what program of compliance testing for a specific category of waste would be sufficient to satisfy the requirements of their environmental permit and as such, satisfy the EPA and the requirements of the Decision. In **Germany**, it is the landfill operator as well that determines the program, although the legislation provides for a framework of intervals (on the basis of volume and of time). In **Slovenia** the program of compliance testing (minimum requirements) is set by the Ministry of Environment (Slovenia). At landfills for inert waste representative samples of minimum 0.5 % of accepted loads must be taken and for homogenous non-hazardous waste representative samples of at least 2 % of accepted loads must be taken. For **Spain**, the Royal Decree 1481/2001 provides for compliance testing (which, according to the Decree is non-compulsory), that every 200 tons sent to landfill should be tested, once a year if the amount is smaller or the loads are uniform from the same origin. According to the Decree, the autonomous regional governments may define a higher frequency for testing. In **Sweden** and **Hungary**, the waste generator is responsible for the program of compliance testing as this is decided through the process of basic characterisation.

In all Member States, the program of compliance testing as well as the actual compliance testing is inspected by inspection authorities on a spot-check basis (i.e. not systematic).

¹¹⁸ Municipal waste.

¹¹⁹ For the Autonomous Region of Navarra.

Examples of compliance checking:

Germany: compliance testing required as follows:

- on hazardous and underground landfills: upon every delivery, unless reduction agreed with competent authority as follows - every 2.000t or at least once every three months. The testing has to include at least key parameters as determined by the basic characterisation.
- on non-hazardous landfills and landfills for inert wastes: every 2.000t in the case of large volume deliveries from treatment installations; in the case of regular waste deliveries once a year; otherwise random sampling. The testing has to include at least key parameters as determined by the basic characterisation. In case of mechanically biologically pre-treated wastes delivered regularly and in larger volumes, every 2.000t; key parameters include at least "organic part of the dry matter of the original substance".

Spain: Every 200 tons sent to landfill, once a year if the amount is smaller or the loads are uniform from the same origin (as per Royal Decree 1481/2001)

Sweden: Sweden has a general requirement that if compliance testing includes batch leaching tests, then the frequency should be at least once a year.

On-site verification

According to the Decision, Section 1.3, each load of waste delivered to a landfill shall be visually inspected before and after unloading. The required documentation shall be checked. The waste may accepted at the landfill, if it is the same as that which has been subjected to basic characterisation and compliance testing and which is described in the accompanying documents. Member States shall determine the testing requirements for on-site verification, including, where appropriate, test methods.

In **Germany, Hungary and Slovenia**, on-site verification is regulated in the national implementing legislation. The **Swedish** legislation also prescribes the requirements for on-site verification but requires this to be implemented at the individual site only when a new permit has been issued. In **Ireland**, the level of on-site verification is prescribed in the environmental permit. Only when all operating sites have received new permits with requirements in line with the Decision is the national system as such in compliance with the Decision. In **Spain**, the Royal Decree 1481/2001 addresses site-verification as per Annex II of the EU Landfill Directive¹²⁰.

In terms of actual enforcement, in **Ireland**, 30 out of 39 existing operating sites possess a permit in which they are instructed to do on-site verification in line with the Decision. In **Sweden**, only 20 sites out of 300 possess a permit where the requirements for on-site verification are in compliance with the Decision. In **Slovenia** a recent study showed that on-site verification was in line with the Decision at 41 out of 45 sites. Similar information on the actual application of the requirement in practise is not available for **Germany, Hungary and Spain**.

Testing

In terms of the scope of testing, sampling and test methods, the following observations may be made:

¹²⁰ And no substantiated information is available for the situation at regional level.

Scope of testing

The Council Decision allows for certain exemptions from testing requirements as part of basic characterisation in the context of establishing criteria for landfills for non-hazardous wastes. Section 2.2.1 in the Decision describes which non-hazardous waste types are exempted from testing. However, in the preceding introductory Section, it is specified that limit values are only laid down for non-hazardous waste which is landfilled in the same cell with stable, non-reactive hazardous waste. In the view of the consultants, the consequence of this would be that as long as non-hazardous waste is not co-disposed with hazardous waste, no testing is required for non-hazardous waste at all. However, the study has shown that the scope of the exemption from testing has been implemented rather differently in the Member States covered by the study, resulting, in some cases, in "over-implementation".

In **Germany** acceptance criteria and requirements for testing are maintained for all non-hazardous waste on landfills for non-hazardous wastes. The **Swedish** stakeholders, confirmed by references to the Swedish legislation, stated that all non-hazardous waste is exempted from testing as long as it is not co-disposed with hazardous waste or gypsum waste. In **Ireland**, by lack of clear description from the authorities, the landfill operator interviewed assumes that all non-hazardous waste which is outside Chapter 20 in the European Waste Catalogue must be tested. **Hungary** requires chimney sweeping (EWC 20 01 41) and street cleaning residues (EWC 20 03 03) to be tested as part of basic characterisation, while all other non-hazardous solid waste listed in Chapter 20 is exempted from testing. It is specifically mentioned that all waste under 19 05 and 19 06 of the list of wastes, and the non-hazardous wastes listed under 19 08¹²¹ may only be landfilled on sites for non-hazardous waste if testing shows results under the criteria established. For **Slovenia**, testing is said to be carried out in accordance with the Council Decision.

Germany and to some extent Hungary may be said to "over-implement" while Sweden and Ireland follow different interpretations, thus resulting in variations of implementation between Member States. In the view of the consultant this variation in implementation is substantial, presumably resulting in some differences in cost implications among Member States. As will be elaborated below, further clarification regarding the meaning of Section 2.2.1 is required.

In **Hungary** it is considered to be a common problem that waste producers often classify their waste into categories of which that do not require testing. This has also been reported from the **Swedish** stakeholders.

Testing body (in house/external, accreditation ...)

The Decision requires both sampling and testing to be carried out by independent and qualified persons and institutions. The Decision leaves some room for flexibility as Member States may decide that both sampling and testing can be carried out by waste generators or waste operators under certain conditions.

¹²¹ 19 05 - wastes from aerobic treatment of solid wastes; 19 06 - wastes from anaerobic treatment of waste; 19 08 - waste from waste water treatment plants not otherwise specified

In all Member States¹²² testing is done by accredited laboratories. In **Slovenia**, in-house testing is not allowed.

Slovenia, Germany and Hungary require all samples to be carried out by accredited laboratories. **Germany and Hungary** allow for in-house sampling competence as long as they are accredited.

In **Sweden and Ireland**, samples are generally taken by the waste producers without accreditation.

In **Hungary**, even though in-house laboratories are allowed both for sampling and testing this is seldom the case as most landfill operators do not have the necessary competencies. In general the Hungarian Ministry has raised the problem that the number of accredited laboratories is inadequate, and that there is a significant shortage of equipment of those laboratories.

Table 4.6 *Sampling and testing bodies*

	GER	HUN	IRL	SLO	ESP	SWE
Sampling	ac.lab	ac.lab	no req.	ac.lab	N/D	N/D
Testing	ac.lab	ac.lab	ac.lab	ac.lab	N/D	ac.lab
In house allowed?	yes	yes	N/D	no	N/D	N/D

Standards

In four countries (**Hungary, Slovenia, Spain and Sweden**), the CEN sampling standard EN 14899:2005 has been adopted. In **Spain**, however, it is not known whether the CEN standard applies in the autonomous regions. In **Germany**, the administrative guidance "PN 98", developed by a Länder working group is the legally binding procedure. "PN 98" is said to implement in detail the requirements of EN 14899. In **Ireland**, the EPA have not set a national standard and neither have they encouraged or advised the use of the CEN standard.

Regarding testing standards, usually (draft) CEN standards have been taken over in the national implementing framework from the Council Decision as far as they exist (**Germany, Hungary, Slovenia, Ireland, Sweden**). Otherwise, usually, international (ISO) or national standards apply. In one case national standards from other countries (DIN) are applied (**Slovenia**). In **Hungary**, it has been submitted that no national standards exist for some parameters (for which no CEN norms are in place either). This is a hindrance in the proper implementation of the Decision. In addition, it has been submitted in Hungary, that not all standards of the Decision are well known in Hungary. No information on testing standards is available for **Spain**.

Cost of testing

In **Hungary** it is stated that the additional cost related to more testing is considered to be high, especially for small enterprises. In **Slovenia** increased burden and costs are also mentioned as a problem experienced in the proper implemen-

¹²² However, no consistent information is available for Spain.

tation of the Directive. In **Sweden** stakeholders do not see costs as big problem for most of the waste producers as they have so large waste streams that the cost of testing is a minor part. For small producers the cost of testing can be a problem. **Hungary** would like to discuss the possibility to reduce the number of testing for certain waste types and components in order to reduce costs. In **Germany**, relatively extensive requirements including testing existed prior to the adoption of the Decision, which is the reason why the level of additional costs for landfill operators is perceived to be relatively modest. However, waste generators are faced with some additional costs due to some extended testing requirements for basic characterisation. Landfill operators fear that due to competitive pressures between landfills, a situation may arise where they in fact will bear these additional costs. In **Ireland** it has been stated by stakeholders that even though the Decision has implied increased costs for waste producers, landfill operators as well as for the authorities (including in terms of added administrative burden), it is nevertheless acknowledged that the Decision's waste acceptance procedures are a useful and indeed, essential tool.

The level of cost (EUR/basic characterisation) can be seen in the below table.

The estimated cost of basic characterisation varies considerably. One of the reasons for this huge variation might be that the sampling cost is not included in all estimates. If sampling and analysis is carried out in accordance with the required CEN standards, a considerable number of samples must be taken and analysed to achieve representative and valid results. The respondents were not asked to include or exclude sampling costs in the estimates asked for, thus there is a high risk that the numbers in Table 4.7 are not directly comparable.

Also, based on the experience of the consultants, it is likely that cost estimates below EUR 1.000 only represent the costs of a single batch leaching test and not the cost of a full basic characterisation of a waste stream including data on the compositional range and the sufficient numbers of samples to meet the requirements of the CEN standards.

The data on cost underlines what is concluded in the below section regarding Recommendations. An increased effort to harmonise the use of CEN standards would probably lead to a harmonised level of cost regarding basic characterisation.

Table 4.7 Cost of basic characterisation (EUR/basic characterisation)

Waste type	GER	HUN	IRL	SLO	ESP	SWE
Inert waste			182			
Non-hazardous waste			120	250-850		
Hazardous waste						600-1.000
Estimate without specification of waste type	200-1.000	1.000-10.000			N/D	

Waste acceptance criteria: limit values of the Decision

As can be seen from the table below, most Member States have implemented the waste acceptance criteria as required in the Decision. No substantiated information is available for Spain¹²³.

Table 4.8 Waste Acceptance Criteria

Waste acceptance criteria	GER	HUN	IRL	SLO	ESP	SWE
Have criteria for landfills for inert waste been transposed?	Yes	Yes	No	Yes	N/D ¹²⁴	Yes
Have criteria for landfills for non-hazardous waste landfilled in the same cell as hazardous waste been transposed?	Yes	Yes	No	Yes	N/D ¹²⁵	Yes
Have criteria for hazardous waste acceptable at landfills for non-hazardous waste been transposed?	Yes	Yes ¹²⁶	No	Yes	N/D	Yes
Have criteria for waste acceptable at landfills for hazardous waste been transposed?	Yes	Yes	No	Yes	N/D	Yes
Have criteria for underground storage been transposed?	Yes	N/A	N/A	N/A	N/A	N/A

¹²³ See above: the national Environment Ministry has stated that "most permits" include acceptance criteria. For the region of Navarra it has only been stated that the Decision's criteria for landfills for inert waste and for landfills for non-hazardous waste apply, otherwise, no information has been provided.

¹²⁴ Stated to apply in Navarra.

¹²⁵ Stated to apply in Navarra.

¹²⁶ The relevant Hungarian Decree does not provide for a separate category as does the Decision, of hazardous wastes acceptable at landfills for non-hazardous wastes. However, the limit values of Section 2.3. of the Council Decision do apply for category B1b landfills (i.e. landfills for inorganic, non-hazardous wastes), including the additional criteria set out in Section 2.3.2 of the Council Decision.

Requirements for asbestos	<p>The Decision includes specific requirements regarding the disposal of asbestos waste. For landfills receiving only construction material containing asbestos the requirements for geological barrier, leachate collection and bottom sealing can be reduced under specific circumstances. Furthermore, asbestos waste can be co-disposed with non-hazardous waste without testing, though not if this is with high organic content.</p> <p>In Germany specific acceptance requirements for asbestos and other artificial mineral fibres are applied. In Slovenia a decree on the acceptance of waste asbestos-cement construction products on the landfills for municipal waste has been issued, including a maximum price for disposal of this waste. In Ireland a special guidance on asbestos will be published in 2007. The guidance will articulate acceptance levels for asbestos in non-hazardous landfills. In Sweden the requirements for asbestos waste from the Decision have been applied for landfills for non-hazardous waste as well as for landfills for hazardous waste. In Hungary construction and demolition wastes containing asbestos may be landfilled at B1b subcategory landfills without testing provided that the waste contains no other hazardous substances than bound asbestos, including fibres bound by a binding agent or packed in plastic. In Spain it is stated that in most cases, these materials are disposed in specific security cells located in non-hazardous waste landfills, though there are no details on whether special requirements have been implemented. In Spain construction and demolition wastes containing asbestos may only be landfilled in a separate cell for asbestos waste.</p>
Underground storage	Underground storage is not used in Sweden, Slovenia, Hungary, Ireland and Spain, but in Germany only.
Sub-categories for non-hazardous waste	<p>The Decision leaves room for flexibility regarding sub-categories of landfill sites according to Appendix B of the Decision. Germany and Hungary have two sub-categories of non-hazardous landfills. One category for waste with low organic content and one category for waste with higher organic content. Ireland has a sub-category of mono-fills for certain industrial ashes coming from the same process. The testing requirements, as per Section 1.1.3 of the Decision, are therefore reduced as compared to the level of testing. According to the Irish stakeholders this is in line with the Decision. Sweden and Spain have <u>not</u> created any subcategories of landfills for non-hazardous waste. Slovenia states that they have sub-categories, though information on what types has not been reported. No information is available.</p>
Three times higher limit values	<p>The Decision also leaves room for flexibility regarding the possibility to apply three times higher limit values on a case-by-case basis.</p> <p>In Sweden 4-5 sites have applied for a permit under the relevant provision of the Council Decision. None of them have yet received such permit for operation under higher limit values. In Slovenia the higher limit values can be used as well. In certain circumstances, up to three times higher emission limit values are acceptable for a period less than 12 months and in accordance with an ahead fixed number of waste loads. The competent authority issues a permit for specified wastes on a case-by-case basis. Germany has also implemented the possibility in the national legal framework, but there is no information available at</p>

the federal level how many sites, if any, have actually been permitted at the Länder level to apply the three times higher limit values¹²⁷. In **Hungary** the possibility for three times higher limit values has not been included in the national legal framework. Also in **Ireland** and **Spain** (Navarra), it has been stated that the possibility is not used.

Table 4.9 Possibility of three-times-higher limit values

	GER	HUN	IRL	SLO	ESP	SWE
Have possibilities for three times higher limit values been implemented?	Yes	No	No	Yes	No ¹²⁸	Yes

Additional limit values

Two Member States have applied additional limit values on specific parameters. **Germany** has maintained the previously existing DOC value of 5 mg/l for waste on inert landfills, while the Council Decision allows for 50 mg/l. Furthermore, an additional criterion of a calorific value of less than 6.000 KJ/kg has been introduced with regard to the landfilling of wastes on landfills for hazardous waste. **Hungary** has introduced a level of PCB of 0.1 mg/kg (1 mg/kg in the Decision), and a level for mineral oil of 100 mg/kg (500 mg/Kg in the Decision) regarding landfills for inert waste. Furthermore, in Hungary it is required that if waste contains hazardous components not included in tables setting acceptance criteria, the waste generator, pre-treatment operator or the landfill operator are required to request specific leaching values for such components. Sweden, Ireland, Slovenia and Spain have not reported any additional or higher limit values.

4.2.3 Scope of application in terms of sites covered ("existing" vs. "new" sites)

In some Member States a clear differentiation is made between existing sites which are expected to close down and new sites in terms of level of compliance with the Decisions requirements for waste acceptance procedures. In **Sweden** only 20 sites (out of 300) have received new permits where requirements for on-site verification are in compliance with the Decision. The rest is doing on-site verification as required by former legislation (i.e. as per the EU Landfill Directive), but do not check whether or not waste deliveries have correctly fulfilled the requirements of basic characterisation and compliance testing in accordance with the Decision. In **Ireland** the same kind of differentiation exists. Permits have been issued for 23 out of 26 sites which are to continue operation. These have requirements for on-site verification in line with the Decision. For

¹²⁷ No such information was available at the level of the Land Hessen either (the Hessian Ministry of Environment having been included as information source for the study): In that Land, the regional governments responsible for issuing permits, have been asked to record these "extended" permits so as to be able to report to the Ministry in the framework of German reporting obligations vis-à-vis the Commission.

¹²⁸ For the region Navarra.

sites which are to close down only half have received permits since 2005 and thereby comply with the Decision. Numbers are shown in table matrix below:

Table 4.10 Sites ready for continued operation, Ireland

Ireland	sites to close down	sites to continue
WAP not in compliance	7	3
WAP complying	6	23

Table 4.11 Sites ready for continued operation, Sweden

Sweden	sites to close down	sites to continue
WAP not in compliance	150	130
WAP complying		20

In both Member States the current focus is on those sites which are to continue operation after 16 July 2009, meaning that sites which are to close down will never reach the level of compliance necessary regarding waste acceptance procedures.

In Slovenia 23 sites out of 81 known operating landfills for non-hazardous waste are expected to continue operation after 2009. Sites which will continue operation have initiated large investments in the necessary equipment and the construction of new infrastructure facilities for operation in accordance with the regulations. In connection to this subject, also proposals for Cohesion Funds have been submitted. This indicates that in general the level of compliance with the Decision and the Landfill Directive as such is higher on those sites that are to continue. On the other hand, requirements for reporting and equal supervision of Inspectorate for Environment and Spatial Planning covers all sites, including those which are to close down.

In **Spain** no legislation has been transposed yet, neither on national nor on regional level. According to the Spanish stakeholders as long as there is no legislation in place the Decision is implemented through environmental permits at a case-by-case basis as is the case in Ireland. There is no overview yet, in Spain on the number of sites which have achieved environmental permits containing requirements in line with the Decision¹²⁹.

This issue is addressed in more detail below (critical findings).

¹²⁹ In the Region of Navarra, 3 out of 7 sites for non-hazardous waste to continue operation have received permits for operation after 2009.

4.2.4 Problems identified by stakeholders

As noted above, a number of problems experienced in the implementation of the Council Decision have been highlighted by the stakeholders interviewed in the six selected Member States. Some of those are due to the national implementation of the Decision, others are linked to the Decision as such. The latter are either of a general nature (increase of administrative and testing costs for waste generators/landfill operators) or of a technical nature (difficulty of achieving limit values in the case of certain waste types)

Problems in the "national sphere"

The following deficiencies relating to the national sphere have been observed by stakeholders in the Member States subject to the study:

- In one country, national legislation is perceived as deficient and ambiguous, leading to application and enforcement deficits with stakeholders and authorities (**Hungary**)¹³⁰.
- A complete set of standards has not been adopted (**Hungary**).
- In one country (again, **Hungary**) the necessary testing infrastructure (laboratories) is insufficient.
- Stakeholders, in particular SMEs (as waste generators), but sometimes also landfill operators are not sufficiently aware of the requirements pursuant to the Council Decision, and/or have not been given sufficient guidance; this is the case in **Hungary** and **Ireland**.
- In some cases, Member States provide for stricter requirements than the Decision, which is perceived problematic by landfill operators (**Germany**).

Problems linked to the Decision

Stakeholders interviewed also raised issues linked to the Decision as such rather than its national implementation.

- In several countries (**Germany, Hungary, Slovenia, Ireland**), it was stated that the Council Decision leads to increased administrative burdens and costs, including for testing, presenting a problem in particular for SMEs as waste generators, but also for landfill operators.
- Several instances were raised, where, in the case of certain waste types, Member States see a difficulty actually to fulfill the limit values set by the Decision. These include:
 - With regard to certain wastes, the achievement of sulphate and chloride values is difficult in practise, even applying the three-times-

¹³⁰ In fact, the consultants have found that a similar situation may be present in Spain. More generally, the consultants reiterate in this context, that although major legal implementation issues were noted where they appeared, the study did not comprise a detailed legal conformity check, assessing whether national legislation, where adopted, is fully in line with the requirements of the Council Decision.

higher limit value exception. Thus, these wastes cannot be landfilled on hazardous wastes sites¹³¹. This issue was raised by Sweden and Spain, and reported as being a problem for some Member States, by Germany.

- In the case of some special wastes, e.g. mixed wastes from fire damage which consist of organic wastes and asbestos, i.e. hazardous wastes, treatment will not result in the required reduction of organic content in line with the acceptance criteria. On the other hand, incineration is not an option due to the asbestos content of such wastes. The issue was raised by **Germany**.
- Industrial sludges from sugar production processes or dredging sludges may have a high organic content thus making achievement of the organic content criteria difficult. Biological treatment is not always an option and incineration is not an option due to the high water content. Again, this issue was raised by **Germany**.
- Hazardous sludges from industrial processes would require further treatment in order to achieve the limit values of the Directive, but further treatment may be disproportional and contradictory to the political aim to reduce CO₂ emissions. This is also a problem noted by **Germany**.

4.3 Summary of critical findings

Legal vs. practical implementation

From the above assessment, the main findings of the study may be summarised as set out below. The consultants wish to underline, however, that whereas the study was able to collect information on the status of implementation in the six selected Member States in terms of the legal and implementing frameworks established in the Member States, it has proven difficult to get a very clear picture on the status of the actual application of the Decision's requirements in all Member States. In two Member States, Slovenia and Sweden, results from specific enforcement action, in the case of Sweden at regional level, were available. In Ireland, certain more targeted information emerged through the information provided by the landfill operators interviewed for the purposes of the study. In Germany and Spain with federal structures, it was difficult to gain a clear picture on the situation in practise. This was also the case for Hungary. In Germany, a limiting factor in gaining information on the actual application of the requirements of the Decision as such in practise, is also constituted by the fact that the German implementing framework making the requirements of the Decision binding on landfill operators and waste generators has only been effective since 1 February 2007.

Main findings

With this in mind, the following observations can be made:

¹³¹ In practise, these wastes are then often exported to other Member States which typically use them to fill excavations in derelict mines (considered a recovery operation by these Member States).

- In most Member States subject to the study a regulatory and enforcement framework, including sanctions, is in place.
- However, in some cases, it is perceived by the stakeholders, or obvious from the information provided, that there are some deficiencies with regard to the national regulatory frameworks in place.
- In most cases, the Decision is not yet fully applied in practise, or there is limited experience with its application.
- There is a perceived need of further guidance to stakeholders, including enforcement authorities in most of the Member States surveyed.
- Increased administrative burdens and costs through new requirements, in particular testing requirements were observed in many of the Member States covered by the study, mostly with regard to landfill operators and waste generators, in particular SMEs, but in some cases additional burdens imposed on the competent authorities were also mentioned.
- Mechanisms for acceptance procedures in line with the Decision have been established in most Member States subject to the study, but in some cases important elements as a pre-condition for actual implementation are missing (e.g. sampling and testing standards)
- Acceptance criteria are applied in most Member States surveyed, but with some variations (additional parameters, more stringent values, three times higher limit values derogation not always used).

Major issues of uniform interpretation of the Council Decision: Scope of application in time; scope of testing with regard to non-hazardous wastes

The consultants wish to underline two issues in particular:

- In some countries, a major deficiency lies in the fact that, as described in detail above, the Council Decision is not fully applicable to all sites yet. This issue was already raised with the Commission in the interim report, and the legal implications of the Council Decision in terms of the scope of application in time were further discussed with the Commission. The recommendations, below, further discuss how this problem may be dealt with.

- The consultants have also observed that the scope of testing for non-hazardous waste seems to vary somewhat between the Member States studied, as described in detail above. Ireland, Hungary and Germany all may be considered to "over-implement" on this point. In Ireland and Hungary only Chapter 20 non-hazardous wastes are exempted from testing meaning that a large share of non-hazardous waste is tested which is not required according to the Decision. In Germany, all non-hazardous wastes for landfilling in non-hazardous waste landfills are subject to criteria (and thus, implied, testing, unless the exemption of, e.g. Section 1.1.4 (b) of the Council Decision applies). Again, the recommendations, below, further discuss how this issue may be dealt with.

Considerations on the scope of application in time of the Council Decision

On the one hand, Article 7 (1) of the Decision provides for it to take effect on 16 July 2004, whilst Article 7 (2) of the Decision provides for Member States to apply the waste acceptance criteria as set out in Section 2 of the Annex to the Decision by 16 July 2005. The Decision does not in this respect distinguish between "new" and "existing" landfills. This might be interpreted to mean that the waste acceptance procedures laid down in the Decision have been applicable to all operating landfills from July 2004, whilst the acceptance criteria had to be respected by all operating landfills from July 2005.

On the other hand, Article 14 (c), second sentence of the EU Landfill Directive provides that any existing landfill shall comply with the requirements of the Directive by no later than 16 July 2009, with specific earlier deadlines applying to landfills for hazardous waste, in particular a deadline of 16 July 2002 with regard to Article 11 (waste acceptance procedures) and Annex II (waste acceptance criteria and procedures).

Whilst it appears clear from the above, that - insofar as hazardous waste landfills are concerned, permitted to continue operations - the waste acceptance criteria and procedures laid down in the Decision had to be applied from the dates mentioned therein (i.e. from July 2004 as regards procedures, and from July 2005 as regards criteria), there is some room for interpretation insofar as inert and non-hazardous landfills are concerned. In that respect, Article 14 (c), second sentence of the Directive could be interpreted as meaning that acceptance criteria and procedures first have to be applied from the time of completion of the conditioning plan for the respective landfill as authorised by the Member State, or from the time indicated therein. As the final deadline for compliance with the requirements of the Directive is 16 July 2009 only, this interpretation may lead to a situation where landfills may operate without applying acceptance criteria and procedures as foreseen in the Decision, up to that date at the latest. However, where the deadlines granted by Member States for completion of conditioning plans are shorter, these would apply.

In addition, as regards landfills (irrespective of the landfill class) which have not received a permit to continue to operate, one could interpret Article 14 of the Landfill Directive as meaning that no acceptance criteria and procedures have to be applied at all, as those landfills are closed down.

In the view of DG ENV, however, there is in fact no room for an interpretation to allow Member States exempting existing landfills from the application of the waste acceptance criteria and procedures. Such a right would have to flow out of the Decision itself and there is no trace there for such an assumption. Furthermore such an interpretation would not be logical because in case a landfill activity is on-going on while a conditioning plan is executed, there is no reason to allow this landfill the acceptance of unacceptable waste because this would perpetuate a situation which is not in line with Article 8 of the Landfill Directive and which to enforce is precisely the purpose of the conditioning plan. Furthermore, the Commission has noted that landfills which on the basis of a conditioning plan are foreseen for closure will have to be closed down as soon as possible and cannot receive legally any more waste. In such cases the question of legal interpretation would not even arise.

4.4 Recommendations

There are a number of issues, where the consultants have found that the implementation of the Decision gives rise to problems.

In the view of the consultants, the main issues can be grouped into three types of "problem areas", whereby the first are problems foremost in the national sphere, and the second and third are problems linked to the Decision as such:

- problems related to insufficiencies in the national implementation frameworks;
- implementation problems flowing from the Decision;
- specific problems related to the application of the acceptance criteria (limit values) to specific waste types.

In addition, as has been underlined above, the proper practical application of the Decision, to the extent that the consultants were able to gather information thereon, is not fully secured yet.

Problems in the national sphere

Problems foremost in the national sphere concern issues such as insufficient national regulatory frameworks for the full implementation of the Decision at the national level, and a perceived lack of guidance for operators - landfills and waste generators - regarding their obligations. Other problems that have been raised that are due to the specific national implementation situation include insufficiencies in the technical framework and infrastructure necessary for the implementation of the Directive (partial lack of national testing standards, insufficient number of laboratories).

Naturally, action will need to be taken principally at that level in order to improve the application of the Decision at the national level. However, the consultants consider that the Commission has an important role to play in furthering the implementation of the Decision also with regard to those issues predominantly in the national sphere.

- Firstly, with regard to the insufficiency of national regulatory frameworks, it should be noted, that, as guardian of the Treaty, it is in the interest of the Commission to disclose cases of non-conformity of implementation. As noted above, the scope of the study did not extend to a systematic and detailed conformity check of national legal implementation measures where such measures have been adopted. However, it cannot be excluded that such cases of non-conformity exist. Thus, the Commission may consider addressing this issue more systematically, e.g. through detailed conformity checks of national implementing measures in relation to the Decision, insofar as this has not already been done.
- Secondly, the Commission has an important role to play as broker for the dissemination of information and best practise regarding the implementa-

tion and enforcement of the Decision in the Member States. Thus, the consultants consider it worthwhile for the Commission to consider arranging for, or actively to participate in workshops¹³², primarily directed at Member States' authorities, both as regards implementation and enforcement. The purpose of such information exercises would be:

- to further the understanding of the Decision, in particular as regards its purpose;
- to clarify the scope of the Decision and its technical requirements, including the procedures to be followed, the testing requirements and the standards to be used for testing;
- to promote best practise, e.g. regarding guidance provided to landfill operators and waste generators implied by the requirements of the Decision.

The consultants consider that it would also be important to address workshops to private stakeholders affected by the Council Decision, i.e. landfill operators and waste generators. Such workshops should be organized with the close involvement of national authorities¹³³.

Implementation problems flowing from the Decision

As noted above, there are also some problems that may be observed with the implementation and practical application of the Decision in the Decision's sphere as such.

Scope of application in time

Thus, in some Member States, a clear differentiation in terms of level of compliance with the Decision's requirements is made between existing sites which are expected to close down and those sites which are expected to continue operating pursuant to the requirements of the EU Landfill Directive.

It appears from the results of this study, that Member States do not fully apply the Decision's requirements from the date from which they are applicable to existing landfills pursuant to EU legislation in the view of the Commission¹³⁴. This is partially also due to factual pressures, either in the form of increased administrative burdens¹³⁵ or due to the lack of alternative landfill options¹³⁶,

¹³²Where such workshops may already be planned for by others, e. g. two workshops planned for by Austria, one of which aimed at bringing together standardisation experts with experts responsible for the implementation of the Council Decision with a focus on the CEN sampling standard EN 14899, and the other of which, in the context of IMPEL, also with Austria in the lead, directed at enforcement authorities with the aim of, inter alia, improving the application and enforcement of the Decision.

¹³³ Similar to the activities in the framework of the project that has been initiated by DG ENV on "Information Exchange and Awareness Raising" in 10 new Member States as regards the EU Landfill Directive in general, and in 25 Member States as regards the Waste Shipment Regulation, currently on-going.

¹³⁴ See above.

¹³⁵ E.g. in Ireland, where the requirements of the Decision are applied via landfill permits, and where some older landfills with little capacity remaining and with older licences have

due to which Member States are prioritising the application of the Decision's requirements, addressing at first the situation at landfills which will continue operating after the end of the transitional period set by the EU Landfill Directive.

Here too, there is clearly a need to clarify the applicable timelines under the EU Landfill Directive and the Council Decision. However, given that at least in some cases, the non-application of the Decision's requirements is due to practical constraints, it may well be likely that even after further clarification, the issue would persist for some time. Nevertheless, as a minimum, the consultants would recommend to DG ENV to raise the issue at one of the TAC meetings under the Landfill Directive. Moreover, DG ENV may consider laying down its views through the issuance of interpretative guidance by DG ENV. A further option, i.e. clarification of the issue through a formal amendment of the Council Decision, is, in the view of the consultants, not a realistic option, due to the presence of the above-mentioned practical constraints for Member States, but also given that there is no doubt that from mid-2009, all requirements of the Decision will apply to all landfills across the EU. A formal change of the Council Decision would most likely not be possible through the comitology procedures and thus may take considerable time to become effective.

Scope of testing requirements for non-hazardous wastes

As noted above, another problem regarding the application of the Decision relates to the issue of testing, and, more particularly, the testing exemption for certain non-hazardous wastes deposited on non-hazardous landfill sites. It has been observed that different Member States address this issue differently.

Again, the consultants propose that this issue is further clarified, the issuance of interpretative guidance probably being the most appropriate option to pursue for DG ENV.

Burden of testing and testing costs

A great number of Member States have raised the issue of additional burdens imposed on waste generators and/or waste operators by the Council Decision.

One Member State (Hungary) has addressed the possibility to reduce testing requirements and has expressed the need for an exchange of European experience.

The consultants consider that also in respect of this issue, the Commission could function as a broker of dissemination of information and best practise, primarily within the context of the above-mentioned workshops directed at waste generators and landfill operators. An important element in addressing this particular issue would be to improve the understanding of stakeholders regarding the purpose of the Decision.

not yet been targeted in terms of amending their licenses to include the specific requirements of the Decision.

¹³⁶ E.g. in Slovenia, where alternative disposal routes are not always available, due to a lack of "fully compliant" landfill capacities.

Technical application difficulties

A number of issues were raised, where Member States perceive problems in the practical application of the Decision's limit values to certain wastes. In the view of the consultants, the way forward in those cases might be a formal adaptation of the Decision. Such adaptation would be possible via the comitology procedure as provided for in Article 6 of the Council Decision, either by providing for waste specific derogations with regard to the relevant values, or, alternatively, allowing Member States to apply different values combined with a notification requirement of such cases to the Commission.

Information gaps on practical application of the Council Decision

As regards the practical application of the Decision, no full picture is available yet. Certainly, proper application and enforcement of the Decision's requirements in practise presuppose that the problems mentioned here-above are addressed. In addition, the consultants underline that regional studies or control studies as the ones carried out in Sweden and Slovenia have revealed valuable information on the actual level of implementation "on the ground". Such information is not available in any comparable way across all the Member States. Thus, the information base could be improved considerably if such kind of survey/study was carried out in all Member States. Naturally, not all aspects of the Decision could be covered in such a survey, but selected issues could be identified and investigated in a way allowing for direct comparisons on the level of actual application of the Decision¹³⁷.

¹³⁷ Issues of relevance for such a survey could for example be:

- Actual application of EU standards of testing methods and sampling methods (to selected waste types)
- Waste acceptance procedures in practise regarding hazardous waste: How do waste acceptance procedures on sites for hazardous waste comply with the requirements of the Decision? How is hazardous waste landfilled? In sites for hazardous waste or as co-disposal with non-hazardous waste? How are compliance-checking programs set

up? What are the minimal requirements for the compliance checking program? One or a few waste types could be selected for more accurate comparison, e.g. how are wastes from shredding of metal-containing wastes (EWC 19 10 03) landfilled or otherwise treated?

- Waste acceptance procedures in practise regarding inert waste: How is inert waste landfilled in Member States? In sites for inert waste or in sites for non-hazardous waste? Are waste acceptance criteria applied and what waste types are subject to testing requirements? How are compliance checking programs set up? What are the minimum requirements for the compliance checking program? One or a few waste types could be selected for more accurate comparison, e.g. how is soil from contaminated sites (EWC 17 05 04) landfilled or otherwise treated?

Appendix I List of stakeholders interviewed

Task 1

Cyprus

- *George Koullapis* - Ministry of Interior, Waste Management Sector, Supervising Inspector,
- *Lakis Mesimeris* - Ministry of Agriculture, Natural Resources and the Environment, Environment Service, Senior Environmental Officer
- *Phaedonas Nicolaou* - Nicosia Municipality, Municipality Engineer
- *George Theocharides* - Union of Environmental Organisations, President

Czech Republic

- *Jan Plavec* - Ministry of Environment of the Czech Republic, Waste Management Department
- *Pavlina Dvorakova* - Directorate of the Czech Environmental Inspection
- *Ladislava Kucna* - Zlin Regional Authority, Waste Management Department
- *Frantisek Tuma* - South Bohemia Regional Authority, Waste Management Department

Estonia

- *Peeter Eek* - Ministry of the Environment, Head of the Waste Department
- *Helle Haljak* - Ministry of the Environment, Waste Department, Counsellor
- *Robert Kiviselg* - Ministry of the Environment, Waste Department, Leading Specialist
- *Pavel Ojava* - Environmental Inspectorate, Central Administration, Senior Inspector
- *Rene Rajasalu* - Environmental Inspectorate, Central Administration, Leading Inspector
- *Margit Riiutelman* - Estonian Waste Management Association, Managing Director
- *Monica Vilms* - Estonian Society of Nature (ELKS), Volunteer

Hungary

- *Csaba Markó* - Ministry of Environment and Water Management, Deputy Director
- *Csaba Madarász* - The Ministry of Environment and Water Management, Minister Counsellor
- *Szabolcs Horváth* - Ministry of Environment and Water Management, Counsellor
- *László Szilágyi* - Hulladék Munkaszövetség (HUMUSZ, NGO), President

Latvia

- *Ilze Donina* - Latvia Republic Ministry of Environment, Waste Management Unit, Head of Division
- *Zinta Lace* - Latvia Republic State Environmental Service Central Unit, Senior Expert
- *Ruta Bendere* - Waste Management Association of Latvia, Chairman of the Board
- *Aivars Sirmāis* - Association of Waste Management Companies of Latvia, Member of the Board
- *Alda Ozola* - Latvian Green Movement (NGO)

Lithuania

- *Algimantas Bakas* - Lithuanian Municipal Services and Waste Management Association, President
- *Dalia Židonytė* - Ministry of Environment of Lithuania, Contaminated Areas and Waste Division, Chief Specialist
- *Žygimantas Vaitkus* - Environmental Projects Management Agency, Head of Waste Projects Administration Unit

Malta

- *Gauci Vincent* - Ministry for Rural Development and the Environment, Malta Environment and Planning Authority
- *Henrietta Debono* - Waste Serve Malta
- *Vincent Attard* - Nature Trust Malta

Poland

- *Beata Kłopotek* - Ministry of the Environment, Department of Waste Management, Deputy Director

- *Anna Kowalska* -Chief Inspectorate for Environmental Protection, Director of Administrative Ruling and Monitoring-Compliance Department
- *Dariusz Matlak* - Polish Chamber of Waste Management, President of the Management Board
- *Michel Dabrowski* - Polish Chamber of Waste Management, Vice-President of the Council
- *Mr Jerzy Starypan* - "Beskid" Sp. z o.o. ('Beskid' Ltd)
- *Pawel Gluszynski* -Waste Prevention Association

Slovakia

- *Maroš Záhorský* - Ministry of Environment of the Slovak Republic Slovak
- *Jana Legáthová* - Environmental Inspection
- *Peter Krasnec* - A.S.A. Slovakia (waste management company), Sales Director
- *Ladislav Hegyi* - Friends of the Earth, Slovakia, Head

Slovenia

- *Radovan Tavzes* - Ministry of the Environment and Spatial Planning, Environmental Directorate, Director general,
- *Irena Koželj* - Environmental Agency of the Republic of Slovenia, Environment Office, Waste Management Section, Undersecretary
- *Jana Miklavčič* - Ministry of Environment and Spatial Planning, Inspectorate for Environment and Spatial Planning, Environmental Inspector
- *Lidija Čepon* - Snaga Public Company d.o.o, Monitoring Manager (for Mitja Praznik, Director of Development and Investment)

Task 2

Germany

- *Karl Wagner* - Federal Ministry for Environment, Nature Protection and Radiation Protection, Deputy Head of Unit
- *Norbert Hahn* - Hessian Ministry for Environment, Agriculture and Consumer Protection, Head of Section
- *Burkart Schulte* - Gesellschaft zur Verwertung organischer Abfälle, GVoA (waste management company), Managing Director, also Chairman of the Landfill Committee of the Verband Kommunale Abfallwirtschaft und Stadtreinigung (Association of Municipal Waste Management) in the Verband Kommunaler Unternehmen (Association of Municipal Companies)
- *Detlev Schulz* - Gesellschaft zur Verwertung organischer Abfälle, GVoA (waste management company), responsible for projects/marketing)
- *Sandra Giern* - Bundesverband der Deutschen Entsorgungswirtschaft e.V. (Association of German Waste Management)

Hungary

- *Csaba Madarász* - The Ministry of Environment and Water Management, Minister Counsellor
- *Szabolcs Horváth* - Ministry of Environment and Water Management, Counsellor
- *Zsuzsanna Koltainé Pfeiffer* - FKF Rt (waste management company), Head of Environmental Department

Ireland

- *Pat Fenton* - Department of the Environment, Heritage and Local Government, Waste Infrastructure and Regulation Section, Assistant Principal Officer
- *Jonathan Derham* - Office of Licensing and Guidance, Environmental Protection Agency, Senior Inspector
- *Michael Bergin* - KTK Landfill Ltd., Landfill Manager
- *Jerome O'Brien* - Cork County Council, Senior Executive Engineer, also Secretary of Irish Branch of Chartered Institute of Waste Management

Slovenia

- *Radovan Tavzes* - Ministry of the Environment and Spatial Planning, Environmental Directorate, Director general,
- *Irena Koželj* - Environmental Agency of the Republic of Slovenia, Environment Office, Waste Management Section, Undersecretary
- *Jana Miklavčič* - Ministry of Environment and Spatial Planning, Inspectorate for Environment and Spatial Planning, Environmental Inspector
- *Lidija Čepon* - Snaga Public Company d.o.o, Monitoring Manager (for Mitja Praznik, Director of Development and Investment)

Spain

- *Francisco Aleza Enciso* - Subdirección General de Prevención de Residuos del Ministerio de Medio Ambiente
- *Alberto Manzano* - Regional Government of Madrid. Head of Solid Waste Unit
- *Miguel Sanz Izco* - Comunidad Foral de Navarra, Representante Área Residuos

Sweden

- *Carl Mikael Svensson* - Swedish EPA
- *Magnus Westberg* - County of Gävleborg, Inspector
- *Thomas Rihm* - Swedish Waste Association

Appendix II List of references Country Reports

Task 1

Cyprus

- Law on the management of solid and hazardous waste (N. 215 (I)/2002)
- Law (N. 17(I) 2006
- Laws 160-2003, 82-2003, 157-2003, 158-2003, 159-2003, 636-2002, and 637-2002.
- Municipality Law 1985-2002
- Local Communities Law 1999-2002
- Strategic Plan for Solid Waste Management in Cyprus (approval, 2003)
- Provision of Consultancy services for the preparation of a strategic management plan, environmental study, techno-economic study, and tender document preparation for the restoration and aftercare of illegal landfills in Cyprus, 2004.

Czech Republic

- Waste Act No. 185/2001 as amended (full wording in Act 106/2005)
- MoE Regulation No. 383/2001
- MoE Regulation No 294/2005 (full transposition of EU Council Decision No. 2003/33/ES)
- CSN (Czech Standard) 838032 – Waste landfill - Basic condition for projecting and construction of the landfills
- CSN 83 8032 Waste landfill – waste sealing
- CSN 83 8033 Waste landfill - Management with landfill leach ate
- ČSN 83 8034 Waste landfill - Landfill degassing
- SEKM Database operated by Ministry of Environment of the Czech Republic
- National Waste Management Plan of the CR
- Regional Waste Management Plans
- Annual Review of the Environment in CR for the year 2005

Estonia

- Country Fact Sheet: Estonia http://eea.eionet.europa.eu/Public/irc/eionet-circle/etc_waste/library?l=/country_fact_sheets/estoniapdf/_EN_1.0_&a=d
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- Guidance for Drafting Waste Management Plan”, Foundation REC Estonia 2003

Hungary

- Act No. LIII. of 1996 on Nature Conservation
- Act No. LIII. of 2000 on Waste Management
- Decree 20/2006. (IV. 5.) of the KvVM on the regulations and conditions related to the disposal of waste and landfills
- Government decree 164/2003 (X 18) on the obligations related to the recording and providing data on waste
- Government decree 98/2001 (VI. 15.) on the conditions related to activities involving hazardous waste

Latvia

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