



Manual of European Environmental Policy

The following pages are a section from the Manual of European Environmental Policy written by the Institute for European Environmental Policy.

The Manual was published by Earthscan/Routledge from 2010 to 2012. It was designed as an on-line interactive reference work and annual printed versions were also produced.

This section is the text of the Manual as published in 2012. It is therefore important to note the following:

- The contents have not been updated since 2012 and no guarantee is given of the accuracy of the contents given potential subsequent developments.
- The sections include links to external websites (e.g. to legal texts). These links continue to work as long as those links are not broken by those websites.
- The sections also include the original links that enabled interactivity within the published on-line version of the Manual. These links no longer work.

© Copyright IEEP 2014

The Manual should be cited as follows:

Farmer, A.M. (2012) (Editor). Manual of European Environmental Policy. 1043pp. Routledge, London.



Sewage sludge

86/278/EEC (OJ L181 4.7.86)	Directive on the protection of the environment and in particular of the soil, when sewage sludge is used in agriculture
Proposed 13.9.82 – COM(82)527 and 25.5.84 – COM(84)240	
Legal base	Articles 115 and 352 TFEU (originally Articles 100 and 235 EEC Treaty)
Binding dates	
Notification date	17 June 1986
Formal compliance	17 June 1989
Situation reports	17 June 1991 and subsequently every four years

Purpose of the Directive

Directive 86/278/EC, commonly known as the Sewage Sludge Directive, has a double purpose: to ensure that human beings, animals, plants and the environment are fully safeguarded against the possibility of harmful effects from the uncontrolled spreading of sewage sludge on agricultural land; and to promote the correct use of sewage sludge on such land.

Summary of the Directive

Sewage sludge application must be banned whenever the concentration of one or more metals in the soil already exceeds the limits laid down at national level in compliance with the Directive. The use of sludge must also be regulated to ensure that heavy metal accumulation in the soil does not exceed these limits. Regulation by Member States may be by either of two methods. Upper limits can be set on the maximum quantity of sewage sludge which may be applied per unit area per year while observing the limits for metal concentrations in sludge selected from the ranges laid down in the Directive. Alternatively, the limits on metal addition per unit area per year, as laid down in the Directive, can be applied. Limit values for concentrations of heavy metals to be observed are set out in three Annexes covering soil, sludge for use in agriculture and amounts which may be added annually to agricultural land, based on a ten-year average.

Sludge must be treated before use but Member States may authorize, under their own conditions, the use of untreated sludge if it is injected or worked into the soil. Member States are to set a minimum period of not less than three weeks after sludge has been

spread before grazing or harvesting can take place. Its use is also banned on soil in which fruit and vegetable crops (except fruit trees) are grown, as well as for ten months preceding harvesting of fruit and vegetables which are normally in direct contact with the soil and eaten raw.

Where the pH of soil is below 6, Member States are required to take account of the increased mobility and availability of metals and if necessary set tighter limits than they have laid down elsewhere.

The requirements for analysis and sampling of soil are specified in two Annexes. Comprehensive records are to be kept of quantities of sludge produced and used in agriculture, its composition, how treated and where used. Records of analyses must regularly be provided to users of sludge. Information on methods of treatment and results of analyses must be released to competent authorities upon request.

The usual Committee for adaptation to technical progress is set up to allow changes to the Annexes, but its scope is limited to those changes concerning sampling and analysis methods.

In line with the standardized reporting Directive [91/692/EEC](#) (see section on implementation and enforcement of legislation) Member States are to send information to the Commission on the implementation of the Directive in the form of a sectoral report. These reports are to be submitted at intervals of three years and are to cover other waste legislation. The report is to be drawn up on the basis of the questionnaire drafted by the Commission in Decision. The questionnaire consists of two sections covering incorporation of the Directive into national law and implementation of the Directive. The first report was due on 1.09.97 and was to cover the period 1995–1997.

Development of the Directive

The subject of sewage sludge was of concern to the Community even before the first EC programme of action on the environment came into existence. In 1971 a research project on certain aspects of sewage sludge was initiated as part of the work of European Cooperation in the field of Scientific and Technical Research (COST) and became known as COST project 68. This was extended in 1977 (Decision [77/651/EEC](#)) by a three-year research project which became part of the environment research programme and a third phase was begun in 1983. It is claimed that the proposal for Directive 86/278/EEC followed from the conclusion of COST project 68, but references in the second Community environment programme and the report on 'Progress made in connection with the Environment Programme' ([COM\(80\)222](#)) had foreshadowed it.

Drafts of the Commission proposal were widely discussed before the final proposal was put forward. The main elements of the proposal were the application of uniform limits on the metal content of sewage sludge used for agriculture, on the rate at which metals could be disposed on such land by means of sludge, and on the metal content of soils to which sludge was applied. In other words, not only were quality standards to be applied to the

receiving medium, but also limit values on the content of the material discharged at any one time and over a specified period. Also proposed were curbs on sludge use in parks and woodlands and a no-grazing period of six weeks after sludge application.

Four years of negotiations led to a Directive which was more flexible than the initial proposal. Member States may now select from a range of limit values for metal concentrations in setting national standards. The emphasis shifted from a rigid control of sludge quality by mandatory limits towards preventing a build-up of metals in soils. Other changes included: a provision allowing certain upper limits to be exceeded on strictly monitored sludge farms; an exemption from normal limits for some metals on soils with a pH above 7; a three-week no-grazing period limit; and dropping of any reference to curbs on the uses of sewage sludge in parks and woodlands. In addition, the banning of sludge application of soils with a pH below 6 was replaced by a requirement for Member States to impose tighter restrictions on such soils where found necessary. On the other hand, the Directive applies to all sewage works (except in respect of certain reporting requirements) whereas the proposal provided for exemption for such works serving populations of 5,000 or less.

Implementation of the Directive

A list of measures transposing the Directive in the Member States can be found in their national [execution measures](#).

Member States must report regularly on the implementation of waste legislation. Reports are sent to the Commission every three years and cover several pieces of waste legislation. To date four reports have been adopted by the Commission on implementation of the Sewage Sludge Directive: COM(1999)752, adopted in January 2010 and covering the period 1995–1997; [COM\(2003\)250](#), adopted in July 2003 and covering the period 1998–2000; [COM\(2006\)406](#), adopted in July 2006 and covering the period 2001–2003; and COM(2009)633, adopted in November 2009 and covering the period 2004–2006.

The most recent report does not cite any implementation problems. It does however suggest that there are signals the Directive may be too limited in scope and lacking in ambition. Since its adoption, several Member States have enacted and implemented stricter limit values for heavy metals and set requirements for other contaminants. The Commission therefore stated its intention to evaluate whether more stringent measures should be put in place and look into the possibility of extending the scope of the Directive to other types of sludges and applications other than agriculture.

The European Environment Agency has published a booklet on sewage sludge treatment and disposal outlining management approaches and case studies¹. The information is conceived as a decision support tool, outlining different disposal options and the criteria necessary to carry out prior Environmental Impact Assessments.

Enforcement and court cases

No cases specifically concerning the Sewage Sludge Directive have been decided by the ECJ, and no other infringement proceedings have been begun by the Commission.

Further developments

The European Commission is currently assessing whether the current Directive should be reviewed, and if so, the extent of the review. For example, the Directive currently sets limit values for seven heavy metals, but several Member States have since implemented stricter limit values for heavy metals and set requirements for other contaminants. The Commission has commissioned an impact assessment study into the environmental, economic, social and health impacts of present practices of sewage sludge use on land, and future risks and opportunities. The study will identify possible options for European policy and estimate their costs and benefits.

A new Directive would be likely to address sludge issues more widely, extending regulatory controls to all domestic and industrial sludge and establishing tough harmonizing requirements on contaminants. Studies for the Commission in 2002 indicated that the spreading of sludge on farmland is likely to remain the best environmental option for some time. Possible elements of a new Directive include: placing significant restrictions on the uses of sewage sludge for agricultural purposes; extending the scope beyond heavy metals to cover organic pollutants; and providing significant restrictions for agricultural use of sewage sludge. On the latter point, such use would only be permitted if four key conditions are met:

- the heavy metal loads set out in the draft are not exceeded;
- there is an agronomic interest for nutrients or organic matter soil improvement;
- the quantity of nutrients supplied must not exceed the nutrient demand of the crops; and
- the application does not result in an odour nuisance.

Before sludge could be applied to land, it would have to undergo one of three specified treatment processes to control pathogens. The contaminant limits are significantly stricter than the 1986 Directive, both in terms of the concentrations in the sludge and the annual loads that can be applied. The values to be achieved are set out in Table 1 and Table 2 below. The draft limits have been subject to significant debate.

Table 1. Annual limits for the concentration of contaminants in sludge that would prevent it being applied to land in Directive 86/278/EEC and as currently under consideration by the European Commission to be included within a new Directive. Limits are in mg/kg dry matter as 90th percentiles.

Metal	Directive 86/278/EEC initial	Proposed ‘medium term’	Proposed ‘long term’	Proposed
Cadmium	20–40	10	5	2
Copper	1,000–1,750	1,000	800	600
Lead	750–1,200	750	500	200
Mercury	16–25	10	5	2
Nickel	300–400	300	200	100
Zinc	2,500–4,000	2,500	2,500	1,500

Table 2. Annual limits for the load of metals in sludge when applied to land in the 1986 Directive and as currently under consideration by the European Commission to be included within a new Directive.

Metals	Limit in Directive 86/278/EEC g/ha/year	Limit under current consideration g/ha/year
Cadmium	150	30
Copper	12,000	3,000
Lead	15,000	2,250
Mercury	100	30
Nickel	3,000	900
Zinc	30,000	7,500

Related legislation

There are a number of other EU Directives that have interactions with the Sewage Sludge Directive. These include:

- Urban Waste Water Treatment Directive ([91/271/EEC](#)).

The issues of relevance to these Directives are covered in the chapters that deal with them. However, a brief outline of their relevance to the Sewage Sludge Directive is given here. Sludge originates from the process of treatment of waste water, and the progressive implementation of the Urban Waste Water Treatment Directive in all Member States has increased the quantities of sewage sludge requiring disposal.

Reference

1. European Environment agency (EEA) (1998) *Sludge Treatment and Disposal*,

Environmental Issues Series No 7. European Environment Agency, Copenhagen.