

## **ENFORCEMENT OF RULES AND REGULATIONS CONCERNING THE PRODUCTION AND APPLICATION OF ANIMAL MANURE IN THE NETHERLANDS**

BERGKAMP, RENÉE M.

Deputy Director, Legal Affairs and Industrial Organization Department, Ministry of Agriculture, Nature Management and Fisheries, P.O. Box 20401, NL - 2500 EK The Hague, Netherlands

### **SUMMARY**

The amount of surplus manure which is produced in the Netherlands poses a major environmental problem. Since 1986 the country has been seeking to tackle the problem through a phased approach. This paper sets out the problems, the solutions, and the manner of enforcement. Although the situation is now under control, the measures taken so far need to be adjusted to realize the targets set for the year 2000. As to enforcement, there is also reason to strengthen the present system of criminal enforcement of generic standards. The paper concludes with a description of a proposed system of administrative enforcement through regulatory levies, which is more tailored to farm-specific situations and focuses on the individual responsibility of farmers.

### **1 INTRODUCTION**

Over the past 25 years intensive livestock systems have boomed in the Netherlands, pig and poultry production in particular (see Table). At these factory farms, which usually have limited land attached to them, large numbers of animals are kept indoors.

Livestock numbers in the Netherlands ('000) (1)

	1970	1992
Layers	25 300	45 000
Broilers	30 100	46 500
Pigs	5 533	14 161
Cattle	4 314	4 920

The development of intensive livestock systems is due to a combination of preventive disease control, which meets veterinary objections to keeping large numbers of animals, and the availability of feed from outside the farm. In the past a farmer needed land to grow fodder crops for his animals, whose manure he used to spread on the land. The separation of production from land in intensive livestock systems is one of the main causes of the surplus manure problem. Now that manure has become a surplus product the farmer producing the manure has to incur expenses (e.g. for transport) to get rid of his manure. The risk of over-application of manure on the land is then very real. Initially, the surplus manure problem was a problem at the level of the farm. Also due to regional concentrations of pig and poultry farms in the southern and eastern Netherlands, it gradually developed into a regional problem, and eventually it became a problem nation-wide.

Over-application of manure in agriculture has serious consequences in various fields. Apart from affecting the soil's productive capacity, it causes damage to the environment since (soil) ecosystems are affected and ground and surface waters are polluted.

In the 1980s the surplus manure problem caused the Dutch government to draw up a new system of rules and regulations.

## 2 THE DUTCH APPROACH TO THE SURPLUS MANURE PROBLEM

### 2.1 General

When addressing the surplus manure problem, it soon became clear that the solutions required would not present themselves overnight. Therefore a phased approach was decided on, also because the problem had to be approached from three different directions:

- to reduce the mineral content of animal feed;
- to promote long-distance manure distribution;
- to set up manure processing factories.

Because of this phased approach the establishment and gradually tightening of standards could run parallel to the development of solutions.

The approach breaks down into the following phases (2):

Phase	Period	Target
1	1987-1991	stand-still
2	1991-1995	reduce problems
3	1995-2000	achieve a balance
4	> 2000	balanced application

The final objective of the manure and fertilizer policy, which is to be achieved in 2000, is to achieve an equilibrium between inputs and outputs, that is, between the amount of manure applied and crop uptake. The option to have the government structurally realize technical solutions was explicitly decided against; responsibility for such solutions should lie primarily with agribusiness. It should be noted, however, that the government encourages the development of solutions to the surplus manure problem via various instruments, such as legislation, information, and financial incentives.

### 2.2 Legislation

In the mid 1980s rules and regulations were drawn up governing the production and application of animal manure using fixed standards for manure production and for manure application and off-farm distribution. These standards are based on phosphate ( $P_2O_5$ ) since this element is stable and therefore can be used to set standards with due regard for the agricultural manure application policy and soil protection policy. Nitrogen (N) is less suitable to base standards on since it is stored in the soil in all kinds of forms and volatilizes partly as ammonia.

Manure and fertilizer legislation covers some 70% of the land area of the Netherlands and focuses on three groups:

- about 50 000 producers of animal manure;
- about 700 intermediaries (traders, hauliers, and storekeepers);
- about 40 000 receivers of animal manure.

### 2.2.1 Rules and regulations governing manure production

Rules and regulations governing manure production have been laid down in the Act on Manures and Fertilizers (3). The Act on Manures and Fertilizers aims to prevent irresponsible expansion of production of animal manure. The Act offers several instruments to achieve this aim, the most important of which are:

- Registration of the herd on a fixed reference date. This registration is the basis for the maximum amount of manure that may be produced (the so-called reference quantities).
- A ban on expansion, implying that manure production should not exceed 125 kg of phosphates per hectare per year, unless a producer has been allocated a reference quantity.
- A surplus levy, to be paid by all livestock farmers producing more than 125 kg of phosphates per hectare per year.
- An obligation to keep a manure ledger for all surplus manure farms in order to monitor whether reference quantities are not being exceeded and whether excess manure is distributed off-farm in a responsible manner.

In 1986 the Act on Manures and Fertilizers only applied to the manure of pigs, chickens, cattle and turkeys. As from 1992 the Act also governed the manure of ducks, furred animals, rabbits, sheep and goats.

### 2.2.2 Rules and regulations governing manure application

Rules and regulations governing manure application have been laid down in the Soil Protection Act (4). This Act aims to prevent the characteristics of the soil that are essential to man, plants, and animals from being threatened. Under this Act the Use of Livestock Manure Decree (5) sets standards for the maximum amounts of manure that can be applied per hectare. The standards concern:

- the amount of manure per hectare for arable land, maize land, and grassland respectively;
- the time of distribution: during (part of the) autumn and in winter it is forbidden to spread manure on the land;
- the manner of application: to reduce ammonia emissions manure should be incorporated directly in or under the soil (e.g. slurry injection).

## 2.3 Enforcement (6)

The present manure and fertilizer legislation provides for an enforcement system which places the responsibility for implementation as close as possible to the undertakings, to the farmers. The rules are mainly general; in principle, there are no individual licences nor preventive government review. Breaking the general rules results in an economic offence, which can be investigated and indicted under criminal law. Essential in the manure and fertilizer legislation is that the farmers involved are to submit their relevant farm data, which are connected with each other by the government and on the basis of which specific controls are being carried out in retrospect.

Several bodies are involved in enforcing the rules and regulations on manures and fertilizers. The General Inspection Service (AID) of the Ministry of Agriculture, Nature Management and Fisheries is the central national control and investigation service. The Levies Office, which also comes under the Ministry of Agriculture, Nature Management and Fisheries, was set up to implement the levy system and to recover the surplus manure levies imposed on producers of animal manure. The Office also registers the reference quantities and processes all data relevant in the light of the manure and

fertilizer legislation of some 50 000 farms producing surplus manure. The police service is also involved in enforcing the rules.

At the instigation of the Department of Public Prosecution and in consultation with the Ministry of Public Housing, Spatial Planning and the Environment (VROM), the Co-ordinating Police Council's Standing Committee for the Environment (Permanente Commissie Milieu van het Coördinerend Politieberaad) and General Inspection Services developed a National Manure Scenario. The Scenario explains the system of manure and fertilizer legislation and describes the tasks of the different services active in enforcing manure and fertilizer rules and regulations.

The National Manure Scenario focuses on the division of responsibilities between General Inspection Services and the police. The rules and regulations the control of which is primarily a police responsibility are described at length. General Inspection Services bears primary responsibility for monitoring production and distribution of animal manure, which means that General Inspection Services sees to it that manure production rights are recorded, that manure production does not expand in an irresponsible manner, and that a manure ledger is kept. As regards the Use on Livestock Manure Decree, General Inspection Services is primarily responsible for the amount of manure to be applied per hectare. Compliance with the provisions concerning time and manner of application can be checked for by visual inspection. Since patrols in the countryside will be instrumental in improving compliance with these provisions both preventively and repressively, their enforcement rests primarily with the police.

Each year between 40 and 42 man-years are devoted to enforcing the manure and fertilizer rules. In deploying this capacity the emphasis is on checking for compliance with the administrative obligations ensuing from manure accounting.

The following figures are illustrative of the number of checks carried out by General Inspection Services and the number of official reports made up. In 1991 and 1992 General Inspection Services carried out 12 541 checks under the Act on Manures and Fertilizers and the Soil Protection Act. In this period 1 889 official reports were drawn up. The reports received by General Inspection Services from the department of Public Prosecution (7) show that 85% to 90% of the cases that were reported came to a conviction or settlement (8).

In the context of improving co-operation and harmonization between the different bodies enforcing environmental legislation the National Co-ordinative Enforcement Committee (LCCM) has drawn up a 1993 National Enforcement Programme. In this programme manure/ammonia is one of the substances that will be given priority (9). Manure/ammonia will also have priority in the 1994 Programme.

### **3 EVALUATION OF THE POLICY ON MANURES AND FERTILIZERS**

#### **3.1 State of affairs**

Since the Netherlands has some ten years' experience in making rules and regulations on manures and fertilizers, there is plenty to evaluate. In 1993 a general evaluation (10) was made and intentions were formulated for the third phase of the policy on manures and fertilizers, which is to start in 1995 and which in 2000 should have realized the final objective of a balanced application of manures and fertilizers. There is general agreement that the present system of legislation, with its generic mandatory and prohibitory provisions, has succeeded in bringing about a certain stabilization. It may be concluded that:

- The stand-still objective has been realized. Nation-wide, manure production has not increased since 1986.
- Virtually all parties involved are aware of the seriousness of the surplus manure problem.
- Together with the government farmers are shouldering the responsibility for solving the problem.

On the other hand, the present system can be criticized, too. Drawbacks are that:

- The system is rather complicated. Also because of the phased approach, the government is reproached for coming up with new rules every time.
- The present system provides only for regulation by phosphate-based standards. Meanwhile, it has become clear that the surplus manure problem is a mineral problem. Nitrogen and fertilizer components also should be regulated.
- The rate of solution development is too low. This is mainly due to the fact that the (costly) solution of processing manure has not yet got off the ground.

This enumeration of advantages and disadvantages leads to the conclusion that the system is to be adjusted if the objectives of the third phase of the policy on manures and fertilizers are to be achieved.

### 3.2 Evaluation of enforceability

The effectiveness of the policy on manures and fertilizers is largely determined by the degree of manageability of the policy and enforceability of the rules and regulations. This is why the enforceability of manure legislation has drawn quite a lot of attention over the years (11) and has been modified (12).

Besides several technical modifications of a few major definitions and a simplification of the administrative duties of farmers, an amendment was adopted to create a formal relationship between the data from manure accounting on the one hand and the use of animal manure on the other. This means that in accordance with his duties regarding manure accounting a manure producer has to show that the surplus manure has been removed from his farm in a responsible manner (shifting the burden of proof). Moreover, attention was paid (see section 2.3) to the creation of a strong network of enforcement for the sake of adequate co-operation and harmonization between enforcement authorities.

The question is now whether the system of almost entirely criminal-law enforcement of generic rules is strong enough to start on the third phase of the policy on manures and fertilizers, all the more since this third phase will require considerable adjustments of policy to achieve the objectives.

The answer to this question is that the present criminal-law system needs to be supported. In this respect the following developments should be noted:

- Since the current system of criminal-law enforcement as such is not very attuned to specific farm situations, as a result of technological developments at the level of the farm there is a widening gap between manure production and off-farm distribution calculated on the basis of fixed standards and the actual figures. Control is thus seriously hampered and the rules are considered unfair, which undermines the support for the policy.
- In the third phase of the policy on manures and fertilizers investments in solutions are to be stimulated. This is why those who break the rules should be punished and what is more those who lead the way in a balanced application of manures and fertilizers should be rewarded. In this way farmers can be tackled about their individual responsibility for the environment.
- When standards are tightened, the tension between manure production and off-farm distribution potential will increase. As a result, the already quite significant efforts to implement and enforce the rules which are made by the controlling and criminal-law bodies will have to be stepped up significantly. This is at odds with the government policy regarding enforcement, which increasingly aims to seek alternatives to criminal-law enforcement.

On the basis of these developments it is thought desirable to support the present criminal-law system with a system based on administrative enforcement (i.e. regulating levies).

#### **4 MODIFICATIONS**

In order to fulfill wishes to adjust the system, both from the policy viewpoint to achieve the objective and from the enforcement viewpoint, two projects are now under way which aim to recalibrate the present system: the manure distribution scenario and the regulating minerals accounting system. Both systems focus on the objective rather than on the means.

In the manure distribution scenario phosphate production and distribution per farm are to be harmonized on the basis of phosphate accounting for animal manure under pain of a prohibitory levy. This levy forces every farmer to dispose of his surplus manure in an environmentally sound manner or, if this proves impossible, to reduce his livestock numbers. Moreover, this levy-based instrument is meant to increase the enforceability of the legislation on manures and fertilizers; criminal law will continue to be used as a safety net.

Regulating minerals accounting is based on the registration and notification of all mineral inputs (e.g. feedingstuffs) and outputs (e.g. milk and meat) per farm. Unacceptable mineral losses into the environment will be punished by a levy. This system aims to promote maximum efficiency of mineral use at the level of the farm. Already minerals accounting has proved to be an adequate management tool.

The manure distribution scenario and the regulating minerals accounting system are based on the individual responsibility of the producer and user of manure/minerals. In the manure distribution scenario and in minerals accounting the instruments of administrative enforcement will be based on levies on the amounts of phosphates for which there is no proof that they were used or distributed in a responsible manner and on the minerals surplus at farms not coming within the margins of acceptance respectively. Both in the manure distribution scenario and in minerals accounting producers and users of manure/minerals will be given the opportunity to provide specific farm data on the basis of which a levy can be imposed which is calculated on the basis of the specific farm situation. Producers and users of manure/minerals will be enabled to take management measures to satisfy the preconditions set by the government; in this manner they may also influence the rate of the levy which may be imposed.

These projects are implemented jointly by the government and farmers to create as much as possible support for a change of tack. It should be noted, however, that the government has a responsibility of its own in this matter, certainly if it has to pay the costs of implementation and enforcement.

The introduction of instruments of administrative enforcement under the manure distribution scenario or minerals accounting will not be realized before 1996 at the earliest. Such a substantial review of the instruments of enforcement, the incorporation of important modifications in rules and regulations, and the implementation of amended rules and regulations requires time, both to draw up precise legislation and to carry out the technical research required. Time is also required to inform target groups about new rules and regulations.

#### **5 CONCLUSIONS**

Since the Netherlands is on the eve of changing over from a system of enforcement of generic standards under criminal law to a system of administrative enforcement via levies and based on the individual responsibility of farmers, the systems can as yet not be compared.

The new system is not without imponderables and it still needs to prove itself. Nevertheless, on the basis of the experience gained in manure and fertilizer legislation and particularly in its enforceability several remarks can be made in conclusion:

- The particular phase of policy-making on a particular environmental problem is highly relevant to the decision on what instruments will be used. If regarding a growing environmental problem direct action is called for, a generic and therefore coarse system enforced under criminal law can work adequately. The objectives

will then be such as reaching a stand-still and increasing awareness of the problem. The next phase, when the farmer is to adjust his farm management to the environmental requirements, will need a different set of instruments, with the emphasis on stimulating individual responsibility. This is why it will cause little surprise that it was found in the Netherlands that criminal-law enforcement of generic rules is rapidly becoming more labour-intensive and is under increasing pressure.

- If enforcement is increasingly under pressure because the legal system is less and less suited for the target group's situation, it is still possible to achieve reasonable success for a certain period of time. If sufficient attention is paid to signals from practical enforcement and if there is sufficient willingness to clarify the rules and at the same time invest substantially in a network of enforcement, such a period can be overcome. However, enforcing a somewhat outdated system knows bounds. Eventually, the policy is to be adjusted and new solutions to the problem are to be sought. In the Dutch surplus manure problems this resulted in a recalibration of policy; at present the introduction of regulating levies on the phosphate surplus and ultimately on the minerals surplus is in preparation.
- The challenge as regards the enforcement of manure and fertilizer legislation in the years ahead will be to try and combine the useful aspects of both systems. This means that a system will be developed of predominantly administrative enforcement concentrated on the specific situation at a farm and on individual responsibility combined with unremitting care for the quality of the rules and regulations and for an adequate network of enforcement.

Whether it will be possible to strengthen the enforcement of the rules and regulations on manures and fertilizers in the Netherlands in the years ahead remains to be seen. It will certainly not be for want of interest from legislators and implementors; their commitment will be a major ingredient of success.

## REFERENCES

1. Facts and Figures 1993: Highlights of Dutch agriculture, nature management and fisheries.
2. 'Hoofdlijnen van beleid en regelgeving: mest- en ammoniakmaatregelen IKC-veehouderij te Ede' (Policy and rules and regulations outlined: manure and ammonia measures IKC-V in Ede).
3. Act of 27 November 1986, Official Journal no. 598.
4. Act of 3 July 1986, Official Journal no. 374.
5. Decree of 25 March 1987, Official Journal 114.
6. The 'Vijfde Voortgangsbericht Handhaving Milieuwet' (Fifth progress report on the enforcement of the Environmental Act) (Parliamentary Documents 1992-1993, 22 343, no. 11) sent by the Minister of VROM also on behalf of his counterpart of LNV to the Second Chamber reports in detail about the enforcement of the Act on Manures and Fertilizers.
7. Note that AID received a report from the department of Public Prosecution concerning about 60% of the official reports of 1991 and 1992.
8. The figures derive from the Evaluation of the second phase of the manure and fertilizer policy which focuses on the manageability and enforceability of the manure and fertilizer legislation sent by the Minister of Agriculture, Nature Management and Fisheries also on behalf of his counterpart of VROM to the Second Chamber on 8 December 1993.

9. Other priority substances are CFCs, cadmium, and water.
10. See 'Notitie Mest- en ammoniakbeleid derde fase' (Third phase of the manure and ammonia policy) (Parliamentary Documents II 1993-1993, 19 822, no. 34) of 3 June 1993.
11. See the previous notes and
  - 'Nota evaluatie mestbeleid' (Evaluation of the manure and fertilizer policy) (Parliamentary Documents II 1989-1990, 21 502, nos. 1 and 2);
  - 'Notitie mestbeleid tweede fase' (Second phase of the manure and fertilizer policy) (Parliamentary Documents II 1989-1990, 21 502, no. 3);
  - Reports by the Netherlands' Audit Office (Parliamentary Documents II 1990-1991, 21 955 nos. 1 and 2; Parliamentary Documents II 1990-1991, 21 158, nos. 1 and 2; Parliamentary Documents II 1990-1991, 22 455, nos. 1 and 2) and the Minister of Agriculture, Nature Management and Fisheries' reaction on them (Parliamentary Documents II 1991-1992, 21 955, no. 3);
  - Research report by Oranjewoud engineers on compliance with the standards for animal manure and the recommendations by the 'Handhavingsoverleg LNV/VROM/Justitie' on this matter.
12. See mr A.G. Walsweer's advice to the Dutch Agrarian Law Society as published in 'Agrarisch Recht', August/September 1991.