

## *Annex 1 to the Dutch derogation request*

### **DEROGATION MEMORANDUM**

#### **Derogation by the Netherlands from Annex III.2 of the Nitrates Directive**

The Netherlands,  
6 April 2005

#### **I. Introduction**

In the Netherlands and in Europe as a whole, livestock farming is currently undergoing a process of momentous change. Solutions are being sought to create a new balance in the areas of animal health, animal welfare, consumer protection, land use planning and the environment. In relation to the latter, the Nitrates Directive attracts full attention.

The main theme of this memorandum concerns the application of the EU Nitrates Directive in the Netherlands. The directive is aimed at restricting and preventing the pollution of groundwater and surface waters with nitrates from agriculture. Within the framework of the directive, the Netherlands decided in 1993 to apply an action programme to its entire territory. As a result, the whole territory falls under all the provisions of the Nitrates Directive.

One of the measures laid down in the Nitrates Directive concerns a maximum input of animal manure per hectare of soil, established as a single standard of 170 kg N per ha per year. Deviating quantities ('derogations') must not be detrimental to the environmental objectives of the directive, and must be determined on the basis of objective criteria.

The intensive use of the Dutch territory has created an intensive type of agriculture, which has caused serious environmental problems. It is crucial to transform this form of agriculture without undermining its prospects for economic viability. The aims of the Nitrates Directive therefore correspond with the objective of the Dutch government to realize a sustainable rural area and restore a sound relation between manure production and utilization.

This document contains a request for derogation. This request coincides with the implementation of a fully renewed fertilizer policy, following a decision by the European Court of Justice on 2 October 2003. Section II will first deal with the Court's decision and the Dutch Third Action Programme; section III will deal with the objective of a sustainable rural area.

The Netherlands present scientific analysis to justify derogation for grassland farms in the Netherlands. The results of this analysis are described in greater detail in section IV of this memorandum. In section V the Dutch derogation request is made explicit and discussed within the context of the Dutch fertilizer policy. The conclusion is presented in section VI.

## **II. Third Action Programme**

In 1995 the Netherlands started to introduce a balance approach in its fertilizer policy. This so-called mineral accounting system (MINAS) focused on the difference between inputs and outputs of minerals on the farm. This difference (i.e. the surplus) should be lower than the loss standards that were defined by the government. The European Commission, however, questioned whether this system would be adequate to implement the Nitrates Directive. On 2 October 2003, the Court of Justice decided that the Nitrates Directive requires application standards, not loss standards. It also concluded that other parts of the first Action Programme introduced by the Netherlands were not adequately in line with the Nitrates Directive (case C-322/00; hereinafter referred to as: the 'Court judgement').

As a direct consequence of the Court judgement, the Netherlands is fundamentally changing its approach to the implementation of the Nitrates Directive. On 1 July 2004, the European Commission and the Netherlands reached an agreement on the matter. The obligations of this agreement and the outlines of the new minerals policy were laid down in the Netherlands Third Action Programme. This Third Action Programme relates to the period from the year 2004 to 31 December 2009, and applies to all Dutch territory.

The Third Action Programme implements the Court judgement and the objectives of the Nitrates Directive based on the measures provided for by article 5 of the Nitrates Directive. It introduces a system of application standards, both for animal manure, total nitrogen and total phosphate, in combination with additional regulations on conditions for use of fertilizers and clear regulations regarding the minimum storage capacity for animal manure on farms. The MINAS system will remain in force to regulate mineral application and prevent nitrate pollution until the new system of application standards comes into effect from 1 January 2006. The application standards aim at realisation of 50 mg nitrate per litre or less in the upper groundwater and drainage water in 2009, at realisation of equilibrium fertilization for phosphate in 2015 and to combat eutrophication of natural freshwater lakes, other freshwater bodies, coastal waters and marine waters.

In this way, the Third Action Programme ensures that the objectives of the Nitrates Directive are achieved and is establishing the basis for the current derogation request. The Netherlands request derogation in pursuit of sustainable development. The derogation request serves the integral social, economic and environmental development of the rural area as a whole.

The full text of the Action Programme is enclosed as Annex 1 to this memorandum.

## **III. The development of a sustainable rural area**

### *Sector characteristics*

The Netherlands is a very densely populated country (465 inhabitants per km<sup>2</sup>), with a high degree of urbanization (89% of the Dutch population live in urban areas). This has profound consequences for the character, significance and use of the land. The whole of the Dutch territory covers an area of 33,873 km<sup>2</sup>, 70% of which is used for agriculture (including roads and waterways), 13% for built-up areas and traffic and 14% for woodlands and nature reserves. These figures demonstrate that agriculture

plays an important role in rural areas. However, the countryside is also used in a variety of other ways and accommodates numerous economic activities either or not related to agriculture. The countryside is under increasing pressure due to the social need for nature, space and recreation, as well as space for living, working, water collection and the like. Due to the limited availability of land, interactions between agriculture and other human use functions become more important and increase the pressure to work towards an agricultural system that is both environmentally and economically sustainable. Agricultural land prices have risen to around 40,000 euros per hectare. This price level makes it hard to make large-scale agricultural investments in land. Although the quality of the rural environment has improved in recent years, partly due to the efforts of farmers, further improvements are still needed.

In the Netherlands, dairy farming is the sector with the largest number of farms, with horticulture in second place. Dairy farming is evenly spread over the whole country. Arable farming is important in coastal clay areas. Intensive livestock farming (especially pig and poultry farming) occurs mainly in the sandy regions in the east and the south, which has a number of consequences for the environment and the quality of the area. The expectation is that the total number of farms will continue to decrease. The total acreage used for agriculture is expected to decrease more slowly as a result of increasing urbanization and a growing need for nature and recreation.

#### *Nitrates Directive and fertilizer policy*

A matter for special attention in the attempt to create conditions for sustainable farming is the burden that nitrate input from agriculture places on the groundwater and surface freshwater. The EU Nitrates Directive came into effect in 1991. The directive's main objective is to reduce the nitrate burden on groundwater and surface waters caused by agriculture. The Netherlands is fully aware of the great effort that is required of livestock farming in particular and is doing everything it can to meet the obligations imposed by the Nitrates Directive.

As formulated in the Nitrates Directive, the Dutch requirements oblige producers to restore the balance between animal numbers and acreage and the balance between fertilization and crop requirements. Farmers are forced to apply animal manure within the constraints of the application standards and additional regulations. Farmers who produce more animal manure than they are allowed to apply on their own land are forced to ship it off their farms. From there it can be transported to other farms, where it can be applied under the same constraints, or it can be exported abroad, to leave the national agricultural minerals cycle. Other options that these farmers have are to reduce livestock density (by reducing their livestock or by buying additional land) or to quit farming altogether. This process is already in full swing within the context of the current Dutch manure and minerals policy.

Phosphate also demands for a balance between manure production and acreage. Phosphate fertilization exceeding phosphate uptake results in phosphate accumulation in the soil. Gradual accumulation will lead to phosphate leaching. Phosphate has an important role in eutrophication. To prevent eutrophication, not only nitrogen but also phosphate in manure and chemical fertilizer is included in Dutch legislation.

Given the perspectives for sustainable use of manure in Dutch agriculture, the Netherlands had to realize a considerable reduction in manure production and, consequently, in animal numbers. In this context, manure production limitations were strengthened and a package of measures with a total value of more than EUR 800 million was set up in order to realize the required reduction. The core of the package was an arrangement for buying up manure production rights, mainly for pigs and poultry. Under this arrangement, the production capacity of around 13 million kg of phosphate was bought up in 2000 and 2001: around 7 million kg of phosphate for pigs, around 5.5 million kg of phosphate for poultry and around 0.5 million kg of phosphate for other livestock. Other arrangements and autonomous developments also reduced manure production. As a result, manure production in the Netherlands decreased from 183 million kg of phosphate in 2000 to 172 million kg in 2002. Expressed in nitrogen, manure production decreased from 415 million kg in 2000 to 384 million kg of nitrogen in 2002. As is shown by the official CBS statistics summed up in Table 1, manure production in 2002, compared to 1986, decreased by 29% (nitrogen) and 34% (phosphate).

Table 1. Animal numbers and manure production in the Netherlands

	1985/86	1990	1995	2000	2002
Cattle (x 1.000)	5,248	4,926	4,588	3,900	3,781
Pigs (x 1.000)	12,383	13,915	14,397	12,820	11,153
Poultry (x 1.000)	92,136	95,453	91,861	106,517	103,355
Manure production of all livestock per year:					
in million kg of nitrogen	542	527	571	415	384
in million kg of phosphate	259	220	209	183	172

Between 1990 and 2002, the number of dairy cows was reduced by 23%. As regards pig farming, many efforts have been directed towards a reduction in the amount of nitrogen and phosphate excretion per animal and the number of animals has decreased from approximately 14 million in 1995 to approximately 11 million at the end of 2002. An important element of the recent agreement between the Netherlands and the Commission is to limit the yearly national manure production to below the level of 2002, expressed in both nitrogen and phosphate.

#### *Sustainable levels of manure application*

Geologically, the Netherlands is moulded by deposits from estuaries and rivers within the international river basins of the Rhine, Scheldt, Meuse and Eems Rivers. A large part of the soil consists of clay and peat, rich in organic matter and minerals. The sandy soils have been managed to create deeply rooted, very productive soils. In combination with the long growing season and humid climate, agricultural production is among the highest in Europe. Of course high fertilization levels are needed to offset high yields. Animal manure, if adequately combined with other fertilizers, can contribute very effectively to these levels.

As mentioned earlier, the Nitrates Directive allows member states the opportunity, under certain well-defined circumstances, to set amounts of animal manure other than those contained in the directive. However, such deviant amounts must not be

detrimental to the directive's objectives. Moreover, arguments in their favour must be based on objective criteria, as stated in Annex III of the Directive.

The Netherlands commissioned a scientific analysis of the application levels that can be applied while still observing the (ecological) objectives of the Nitrates Directive concerning the protection of groundwater and surface waters against nitrates from agriculture, and observing the consequences for phosphate accumulation.

#### **IV. Scientific analysis of a derogation**

Three types of application standards will apply for all Dutch farms: for animal manure, for total nitrogen and for total phosphate (see chapter 3 of the Action Programme). Nitrogen and phosphate application standards are set to reduce nitrogen and phosphate levels, in order to reach a level below 50 mg nitrate per litre in ground and surface waters, to reach balance fertilisation for phosphate and to reduce eutrophication of surface waters. The question here is the extent to which animal manure can be applied within these environmental goals. The limit of the Nitrates Directive, 170 kg N per ha, is possibly stricter than necessary for crops with a high nitrogen uptake, especially for grass under Dutch conditions. A scientific analysis was carried out to define acceptable levels of animal manure on grassland.

The scientific analysis was conducted by Plant Research International (PRI, in Wageningen) in collaboration with the National Institute for Public Health and the Environment (RIVM, in Bilthoven), Alterra (in Wageningen) and Animal Science Group (in Wageningen). These institutes were asked to examine whether, within the objectives of the Nitrates Directive, an amount could be determined that was higher than the figure of 170 kg of nitrogen from animal manure per hectare, and to indicate what that amount might be. The draft text was carefully read and commented upon by experts from other EU countries and their comments were assimilated in the final text.

The scientists used an integrated method for nitrogen and phosphate, as follows:

- The soil surplus of nitrogen is calculated for each level of fertilization, based on the soil nitrogen balance including all relevant inputs and outputs, assuming a steady state situation.
- The soil surplus is translated into surface and groundwater concentrations, using leaching factors based on long-term field monitoring data concerning surpluses and concentrations of operating farms.
- It is evaluated which combinations of manure and chemical fertilizer would generate a concentration of 11.3 mg NO<sub>3</sub>-N per liter (50 mg nitrate per liter) in the upper groundwater of sandy soils or 11.3 mg total N per liter in drainage water on clay and peat soils.
- From these combinations, the one was selected where the P surplus arrives at 0 kg P<sub>2</sub>O<sub>5</sub> per ha (balance fertilization).

As Dutch grassland is predominantly used by dairy farming, the analysis focused on dairy manure. On dairy farms, grassland and silage maize are the main crops. In its examination of the permissible input of nitrogen from animal manure on grassland, the scientific analysis differentiates between different forms of grassland management (grazing, cutting) and between soil types. To examine the sensitivity of the outcome for assumed growing conditions and management the analysis

differentiates also between 'good' versus 'suboptimal' growing conditions and management. Good conditions and management refer to the quality of crop choice and rotation, timing of operations, fertilisation rate, physical soil fertility, crop protection, and water availability. This yielded a range of maximum permissible dairy manure application rates for different soil types, rates which do not violate the objectives of the Nitrates Directive:

1. If only nitrogen were used as a criterion to limit manure applications, very high amounts could be allowed. On grassland on different soil types (sand, clay and peat), amounts well above 300 kg N per ha could be applied as manure. On maize, manure levels should stay below 225 to 315 kg N per ha in order not to exceed nitrogen limits.
2. When phosphate (balance fertilization) is added as a criterion, manure levels have to be substantially lower. On grass, a manure level of 265 to 340 kg N per ha can be allowed and on maize 170 to 200 kg N per ha.
3. Suboptimal circumstances result in lower yield levels and thus in lower phosphate uptake. To prevent phosphate accumulation, phosphate fertilization and therefore manure application have to be reduced. However, nitrogen goals are not threatened.

The full text of the scientific report, by Schröder et al. (2005), is enclosed as Annex 2 to the derogation request.

## **V. Derogation within the Dutch fertilizer policy**

The scientific analysis demonstrates that a derogation request for farms with mainly grassland is justified on the basis of the objective criteria referred to in the Nitrates Directive as "long growing seasons" and "crops with a high nitrogen uptake". The moderate and humid climate and the long growing season in the Netherlands are eminently suitable for grass, as is clear both from the rapid growth of grass in the Netherlands and from the nitrogen uptake continuing into October. Moreover, grassland management in the Netherlands, with frequent cuttings (4 to 7 times a year), favours high nitrogen uptake. This means that, in general, the nitrogen uptake on grassland is much higher than on arable land where uptake ends as early as August. It follows that the higher nitrogen uptake under the conditions outlined above could allow a proportionally higher animal manure input on farms with grass as the dominant crop, without exceeding the protection level envisaged in the Nitrates Directive.

The research shows that the amount of 170 kg of nitrogen per ha is not necessary to reach the environmental goal. Furthermore, this amount would have severe social and economic consequences for Dutch agriculture and for the countryside in general, as it would create a national manure surplus and force dairy farmers to export manure from their farms that could be used very effectively on their farms.

As shown in section IV, high amounts of manure can be applied within the nitrogen limits that are set on the basis of the Nitrates Directive. More so than nitrogen, phosphate puts a limit on manure application. In the Third Action Programme, the Netherlands has set a series of phosphate application standards derived directly from crop phosphate uptake, which reach equilibrium fertilization in 2015. The application standard for grassland in 2009 is only 5 kg phosphate per hectare higher than in 2015.

Derived from the scientific analysis summarized in section IV, Table 2 presents the maximum permissible application of manure and nitrogen chemical fertilizer that can be applied within the environmental constraints of 11.3 mg N per litre in groundwater and drainage water and a maximum surplus of 5 kg phosphate per hectare per year. The table presents the essential figures for the situations that are most representative of Dutch dairy production systems.

Table 2. Maximum permissible application of animal manure and chemical nitrogen fertilizer at constraints of 11.3 mg N/l in upper groundwater and drainage water, 5 kg P<sub>2</sub>O<sub>5</sub> surplus and good growing conditions and management<sup>1</sup>

Soil type	grass/maize	Management system on grassland <sup>2,3</sup>	application of animal manure (kg N/ha/yr)	additional application of chemical fertilizer (kg N/ha/yr)	Available nitrogen from manure and chemical fertilizer (kg N/ha/yr) <sup>4</sup>	application of animal manure (kg P <sub>2</sub> O <sub>5</sub> /ha/yr)
Peat	100% grass	mixed grazing	<b>279</b>	180	306	100
Clay	100% grass	mixed grazing	<b>296</b>	299	432	107
	70% grass / 30% maize	mixed grazing	<b>271</b>	241	363	98
Sand <sup>5</sup>	100% grass	mixed grazing	<b>283</b>	172	299	102
	70% grass / 30% maize	mixed grazing	<b>253</b>	129	243	91
	70% grass / 30% maize	cutting only	<b>298</b>	119	298	108

Remarks:

- <sup>1</sup> If conditions and management are suboptimal, reductions of approx. 50 kg and approx. 30 kg manure-N per ha per year are required in grassland and maize respectively to prevent phosphate accumulation.
- <sup>2</sup> Mixed grazing is most common management system (ca. 100% on peat and clay, >80% on sand).
- <sup>3</sup> Change in management system from mixed grazing to cutting only (with cows 100% in stables) increases grass yield (phosphate uptake) and allows higher application of animal manure.
- <sup>4</sup> Using an efficiency of 45% for manure on farms with grazing, 60% for manure on farms with cutting only and 100% for chemical fertilizer.
- <sup>5</sup> Averaged mean highest groundwater level.

As Table 2 shows, the use of 250 kg of nitrogen per hectare per year of animal manure meets the objectives of the Nitrates Directive on farms with at least 70% of grassland, irrespective of soil type.

Suboptimal growing conditions and management would reduce the manure levels required to prevent phosphate accumulation. However, a recent and detailed study of mineral efficiencies in a random sample of Dutch dairy farms showed that average dairy farms did realise the efficiencies of good growing conditions and management. The summary of this study, by Aarts et al. (2005), is enclosed as Annex 3 to the derogation request.

#### *The Dutch derogation request*

The Dutch government aims to achieve simple, enforceable and verifiable legislation and regulations. Consequently, it prefers not to draw a distinction between derogations for different soil types and grazing systems. The government has opted

for a limit for the quantity of nitrogen input from animal manure that can be applied to all soil types.

The Dutch government therefore requests for a derogation of 250 kg of nitrogen from animal manure per hectare per year, to be permitted for farms with at least 70% of grassland, under the conditions of good agricultural practice following the regulations as included in the Third Action Programme. The derogation request refers to the period 2006-2009. The Netherlands has intensified the monitoring programme to analyse carefully the results of derogation farms within the framework of the Third Action Programme.

A maximum input of 170 kg per hectare of nitrogen from animal manure will be applied to all farms with less than 70% of grassland, in accordance with the general regulation formulated in the Nitrates Directive.

Dutch application standards for animal manure (in the period 2006-2009), and for total nitrogen and total phosphate in 2009 will be stricter than the figures of Table 2 would allow. Table 3 shows the legal application standards and resulting maximum fertilization levels that would apply in 2009 according to the derogation request. Legal application standards of animal manure (Table 3) are generally lower than the applications which are tuned to environmental constraints (Table 2), expressed both as nitrogen and as phosphate. Also legal application standards of total available nitrogen (Table 3) are generally lower than the environmentally permissible applications (Table 2).

Table 3. Legal application standards and resulting maximum fertilization levels in 2009.

Soil type	Grass/maize	Management system on grassland	Application standard animal manure (kg N/ha/yr)	Application standard total available nitrogen (kg N/ha/yr) <sup>1</sup>	Maximum level of chemical fertilizer (kg N/ha/yr) <sup>2</sup>	Maximum application of animal manure expressed as phosphate (kg P2O5/ha/yr) <sup>3</sup>	Application standard total phosphate (kg P2O5/ha/yr) <sup>4</sup>
Peat	100% grass	Mixed grazing	250	265	152	90	95
Clay	100% grass	Mixed grazing	250	310	197	90	95
	70% grass	Mixed grazing	250	265	152	90	91
Sand	100% grass	Mixed grazing	250	260	147	90	95
	70% grass	Mixed grazing	250	227	114	90	91
	70% grass	Cutting only	250	283	133	90	91

Remarks:

- 1 For 70% grass: weighted average of application standards for grass (310 and 260 for clay and sand) and for maize (160 and 150 for clay and sand).
- 2 Derived from application standard for total nitrogen and application standard for manure, using a nitrogen efficiency of animal manure of 45% for farms with grazing and 60% for farms with cut-only grassland.
- 3 As the average N/P2O5-ratio in dairy manure is 2.78, an application of 250 kg N in animal manure means an application of 90 kg P2O5.
- 4 For 70% grass: weighted average of application standards for grass (95 kg P2O5 per ha) and for maize (80 kg P2O5 per ha).



The application of 250 kg N per ha from animal manure corresponds to the application of 90 kg P<sub>2</sub>O<sub>5</sub> per ha. In recent years the average phosphate uptake in Dutch dairy farms (average for grass and maize) was 90 kg P<sub>2</sub>O<sub>5</sub> per ha (Annex 3).

The standard for total nitrogen and phosphate applications is the same for farms with a derogation and for those without a derogation. Therefore farms with a derogation will have to compensate for their higher application of manure by applying lower amounts of chemical fertilizer than farms without a derogation. Of course, derogation farms will also have to comply with all the other measures set out in the Action Programme.

Farms will have to apply individually for a derogation. It is expected that around 25,000 farms (from a total of 75,000 farms in the Netherlands), covering around 900,000 ha of agricultural area (from a total of 2,000,000 ha), will apply for a derogation.

#### *Derogation and manure production*

This derogation will not lead to an increased manure production, but will further reduce production of manure in the Netherlands to a level below that of 1970, as is shown in Figure 1. Figure 2 shows that the average manure production of dairy farms was reduced to 260 kg N per ha of the farm in 2002, whereas the average manure use of those farms was reduced to 250 kg N per ha in 2002. In future years, the derogation will limit the maximum amount used to 250 kg N per ha for any farm, so the average use of dairy farms will drop to a figure well below 250 kg N per ha. The derogation will help to restore the relation between animal numbers and acreage and between fertilization and crop requirements throughout the Netherlands. At the same time, the derogation – the possibility of applying up to 250 kg N per ha – is of vital importance to the further development of a viable dairy sector together with a sustainable rural area in the Netherlands.

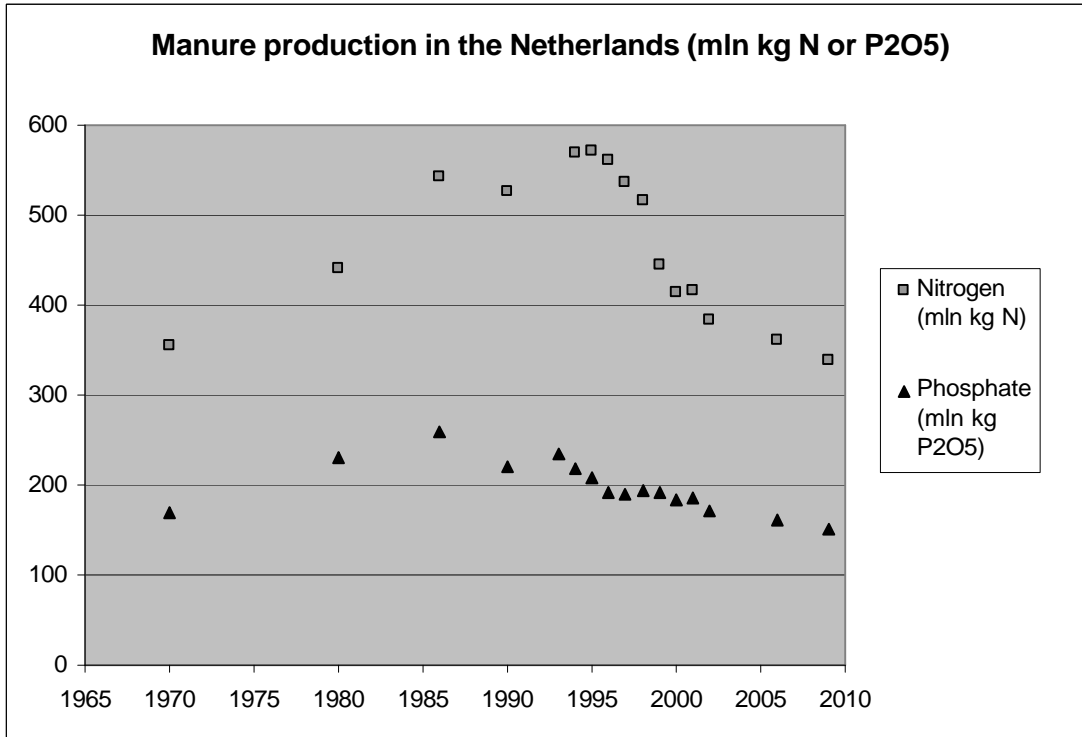


Figure 1. Manure production in the Netherlands, 1970-2009, as mln kg N or mln kg P2O5, corrected for gaseous nitrogen losses of stables and storage facilities.  
Sources: CBS (statistical data for 1970-2002) and LEI (assessments for 2006 and 2009).

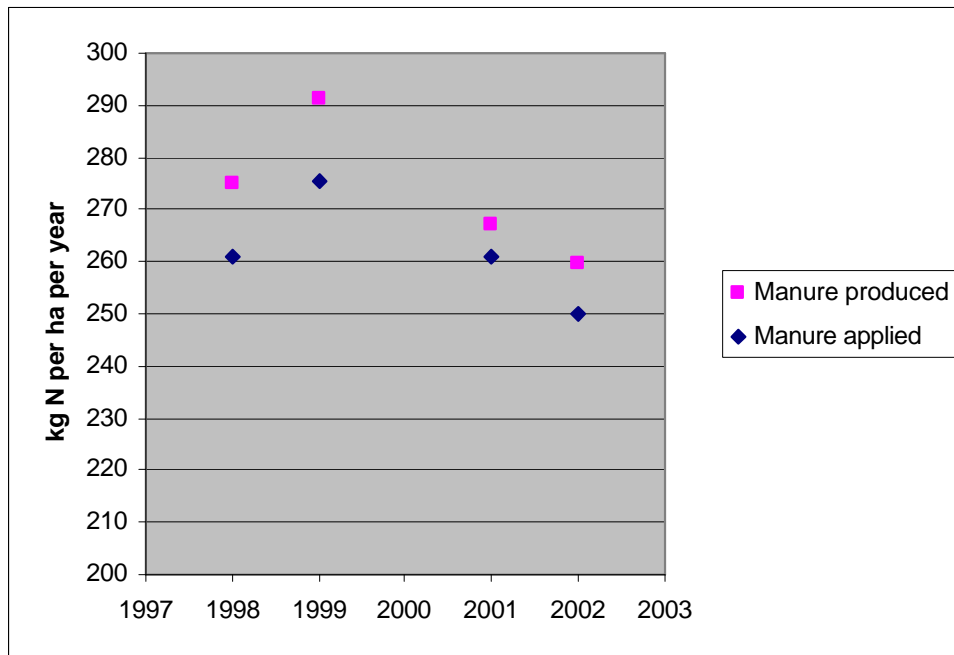


Figure 2. Manure production and application of average dairy farms in the Netherlands, 1998-2002, as average kg N per ha of farm land per year.  
Source: Aarts et al., 2005.

### *Derogation and eutrophication of surface waters*

The Nitrates Directive not only aims to reach a level below 50 mg nitrate per litre in ground and surface waters but also aims to reduce eutrophication of surface waters. The nutrient loads to surface waters have been reduced substantially since 1985, in particular due to reduction of point sources from industry and wastewater treatment plants. Agricultural emissions have been reduced less.

Summer averaged concentrations of total nitrogen and total phosphorus in surface waters also have been declined significantly since 1985 (Figure 3). At present mean concentrations of nitrogen and phosphorus in Dutch shallow lakes are at or just below the current environmental quality standards (EQS) in The Netherlands. These objectives ('MTR-values' of 0,15 mg total-P/l and 2,2 mg total-N/l) were declared relevant for shallow lakes being most sensitive to eutrophication. For other surface waters these objectives are used as indicators.

Summer mean concentrations of chlorophyll in surface waters also show a continuous decrease over this period. In the small regional waters dominantly influenced by agriculture this decline is evident since 1998. At present 18% of the regional waters dominantly influenced by agriculture exceed a summer mean concentration of chlorophyll-a of 75 ug/l. For other regional waters this is 11%. The Dutch marine waters have been characterised as (possible) eutrophication problem areas within the scope of the Oslo and Paris Convention (OSPAR). Environmental quality objectives have not been set yet. Presently proposed standards concern 1.5 times the natural background concentration.

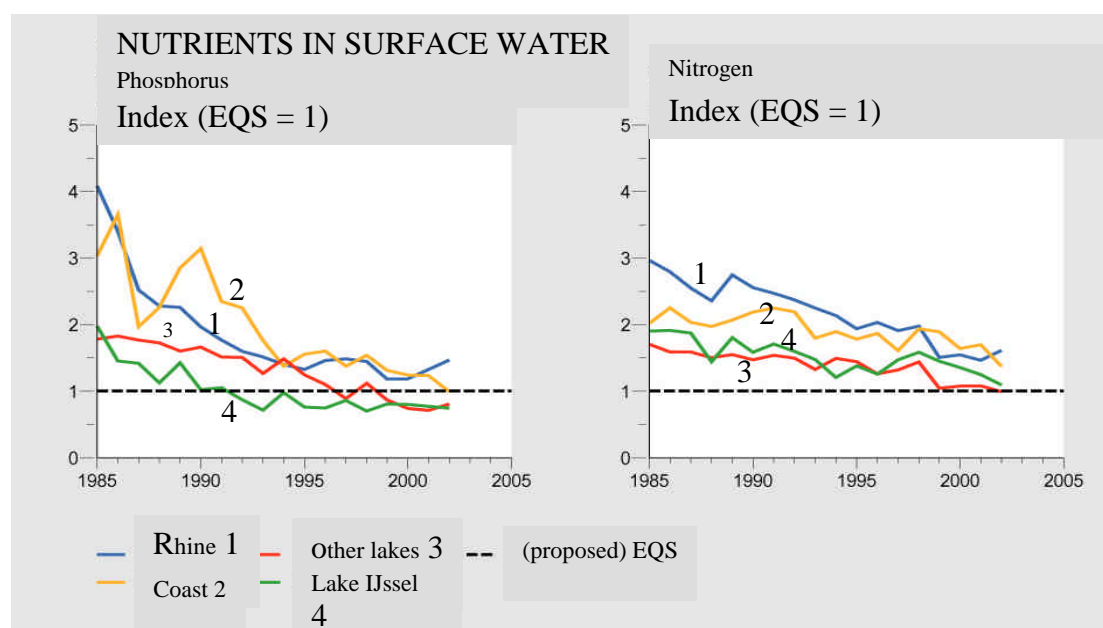


Figure 3: Concentrations of nutrients (phosphorus, nitrogen) compared to the current Dutch environmental quality standards (0,15 mg total-P, 2,2 mg total-N/l) in surface freshwaters and the coastal zone. Source: RIVM-MNP, 2004.

The implementation of the new manure policy according to the provisions included in the 3rd Action Programme together with a derogation of 250 kg N/ha will further reduce agricultural emissions to surface water and further improve surface water quality. It is expected that in order to obtain the water quality objectives to be set in

the near future within the framework of the Water Framework Directive additional (emission reduction, hydrological, morphological) measures need to be taken.

## **VI. Conclusion**

In summary, it can be stated that rural areas and agriculture are currently both undergoing great changes. Functions are being restructured, as the Netherlands endeavours to achieve a new, sustainable balance. Sustainability is the goal, which can only be achieved if there is a balance between ecological, social and economic factors. Dutch circumstances ask for production systems that use the available space in an optimal way, while serving environmental goals.

Dutch manure policy has been changed to comply with the Nitrates Directive and to achieve sustainability. Important steps have already been taken in this direction and will continue to be taken within the context of the Third Action Programme. The application of the derogation provision as referred to in the Nitrates Directive at an input level of 250 kg per hectare per year of nitrogen from animal manure for farms with at least 70% of grassland is desirable in pursuit of sustainability. It is concluded that a derogation of 250 kg N per ha per year will fully meet the objectives of the Nitrates Directive.

Annexes:

2. Scientific underpinning of the derogation request: Limits to the use of manure and mineral fertilizer in grass and silage maize production in the Netherlands (Schröder et al., 2005)
3. Mineral nutrition and yield of grassland in the Netherlands (Aarts et al., 2005)
4. Answers to written questions raised by delegates of the Nitrates Committee
5. Action Programme 2004-2009