


Procedure file

Basic information	
COS - Procedure on a strategy paper (historic) 1997/2226(COS)	Procedure completed
Water policy: pollution by nitrates from agricultural sources (implem. Directive 91/676/EEC)	
Subject 3.70.04 Water control and management, pollution of waterways, water pollution	

Key players			
European Parliament	Committee responsible	Rapporteur	Appointed
	ENVI Environment, Public Health and Consumer Protection	V MCKENNA Patricia	27/11/1997
	Committee for opinion	Rapporteur for opinion	Appointed
Council of the European Union	AGRI Agriculture and Rural Development		03/02/1998
	JURI Legal Affairs, Citizens' Rights	PPE PROVAN James L.C.	
	Council configuration	The committee decided not to give an opinion.	
	Environment	Meeting	Date
		2033	16/10/1997

Key events			
01/10/1997	Non-legislative basic document published	COM(1997)0473	Summary
16/10/1997	Debate in Council	2033	
28/01/1998	Committee referral announced in Parliament		
21/07/1998	Vote in committee		Summary
21/07/1998	Committee report tabled for plenary	A4-0284/1998	
19/10/1998	Debate in Parliament		
20/10/1998	Decision by Parliament	T4-0607/1998	Summary
20/10/1998	End of procedure in Parliament		
09/11/1998	Final act published in Official Journal		

Technical information

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Procedure subtype	Commission strategy paper
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Stage reached in procedure	Procedure completed
Committee dossier	ENVI/4/09335

Documentation gateway

Non-legislative basic document	COM(1997)0473	01/10/1997	EC	Summary
Supplementary non-legislative basic document	COM(1998)0016	20/01/1998	EC	Summary
Committee report tabled for plenary, single reading	A4-0284/1998 OJ C 313 12.10.1998, p. 0007	21/07/1998	EP	
Text adopted by Parliament, single reading	T4-0607/1998 OJ C 341 09.11.1998, p. 0011-0035	20/10/1998	EP	Summary
Follow-up document	COM(2002)0407	17/07/2002	EC	Summary
Follow-up document	COM(2007)0120	19/03/2007	EC	Summary
Follow-up document	COM(2010)0047	09/02/2010	EC	Summary
Follow-up document	SEC(2010)0118	09/02/2010	EC	
Follow-up document	COM(2021)1000	11/10/2021	EC	
Follow-up document	SWD(2021)1001	11/10/2021	EC	

Water policy: pollution by nitrates from agricultural sources (implem. Directive 91/676/EEC)

OBJECTIVE: to review the implementation of Council Directive 91/676/EEC concerning the Protection of Waters against Pollution caused by Nitrates from Agricultural Sources. SUBSTANCE: The report is particularly severe on the Member States. It reveals significant shortcomings on their part in implementing the 'Nitrates' Directive. Six years after the adoption of the Directive, no fewer than 13 Member States are the subject of infringement proceedings under Article 169 of the EC Treaty for failing to transpose it or failing to implement it correctly. The Directive has two objectives: 1) to reduce direct or indirect pollution of waters by nitrates from agricultural sources; 2) to prevent any increase in such pollution. To this end, the Directive requires Member States to identify waters affected by pollution and those likely to be affected by it, which are to be designated 'vulnerable zones'. For these zones, Member States must draw up programmes of action comprising binding measures concerning agricultural practices, indicating in particular the maximum quantities of effluent from livestock farming which may be applied to them per annum. Member States are required to draw up codes of good agricultural practice to be implemented voluntarily outside vulnerable zones and compulsorily inside them. The presence of nitrates in drinking water causes serious health problems. Nitrates are rapidly reduced to nitrites in the organism, impeding the transport of oxygen. This causes methaemoglobinaemia or blue baby syndrome, which particularly affects infants aged under 6 months. The presence of nitrites in the stomach also results in the formation of carcinogens. Ecologically, nitrates are a major eutrophication factor, particularly at sea and in coastal areas, where they stimulate the growth of algae (North Sea and Mediterranean coasts). Agriculture is the main source of nitrate pollution in water. In Europe, in particular, while the CAP has succeeded in increasing production, it has also had a disastrous impact on the environment. Intensive production has resulted in increased use of chemical fertilisers and a greater concentration of livestock in smaller areas. Consequently, the quantity of effluent produced has come to exceed that which could be absorbed by ecosystems without nitrate pollution occurring. The high nitrate concentrations observed are caused by the farming practices of recent decades. The Commission considers it essential to alter these practices. In accordance with the polluter- pays principle, this means that the cost of the measures to be taken should be borne by farmers themselves. Farmers display a marked reluctance to change land-use practices, although such changes have direct implications for their economic viability. This is why some of the requirements of the Directive encounter strong resistance among the farming community, and also why it has not been implemented very effectively. In view of this situation, the Commission concludes that it will not submit any proposals for revising the Directive and that it will do everything it can (including taking judicial measures) to enforce the Directive properly.?

Water policy: pollution by nitrates from agricultural sources (implem. Directive 91/676/EEC)

OBJECTIVE: to summarise the reports submitted to the Commission by the Member States pursuant to Article 11 of Directive 91/676/EEC on nitrates. SUBSTANCE: in direct conjunction with the 1997 report on the implementation of Directive 91/676/EC on pollution of waters by nitrates, the Commission presents a report summarising the measures taken by Member States to implement the Directive. The measures

concern monitoring of waters, designation of vulnerable zones, drafting and promotion of codes of good agricultural practice and the implementation of action programmes relating to the least polluting agricultural practices. Presented belatedly, on account of the Member States' delays in notifying the Commission of the measures in question, the report particularly regrets the lack of coherence of the information received, and even its inadequacy in relation to the objectives of the Directive. Apart from the fact that three Member States (Belgium, Spain and Italy) did not supply the Commission with any information at all about their implementing measures, the information submitted was not well harmonised and therefore in many cases useless. In future the Commission intends to use harmonised forms indicating systematically the information to be submitted. As regards the measures adopted, more specifically, the report indicates that: -with regard to identification of polluted areas and designation of vulnerable zones, of the 12 Member States which submitted reports, 5 simply designated their entire territory (Austria, Denmark, Germany, Luxembourg, Netherlands). The other 7 supplied information only about monitoring of polluted areas. The information relates to surface waters, groundwater and eutrophication; -with regard to codes of good agricultural practice, these have been drawn up in all the Member States which submitted reports except Portugal. In most cases, there is a single document. However, the legislation of some countries, such as Denmark and Sweden, already incorporated all the measures envisaged. Other countries, such as Germany and Luxembourg, combined the code-of-conduct measures and action programmes in the form of an Act of Parliament. Most countries supplied information on how they promote the codes. The methods included providing advisers, organising training courses, holding seminars and distributing information in writing; -with regard to action programmes, the information concerned the measures actually adopted in the Member States and the programmes to monitor changes to agricultural practices (e.g. in Austria and Denmark). Information was also provided about the reaction time of waters to the measures taken (only Sweden was able to give an estimate: by 2005 it would have attained the objective of reducing the anthropogenic nitrogen load in marine waters by 50%).?

Water policy: pollution by nitrates from agricultural sources (implem. Directive 91/676/EEC)

The directive on nitrates, which dates from 1991, was designed to reduce water pollution caused by nitrates from agriculture and prevent them spreading by laying down maximum permitted levels of nitrogen (N): 210 kg N/Ha from 20th December 1998 and 170 kg N/Ha as of 20th December 2002. Member States which already had lower levels could not raise them to these levels. The report by the Commission on the implementation of the directive is brief: it simply notes that the directive is still not properly applied in most Member States. The motion for a resolution, drawn up by the rapporteur, Patricia McKENNA (Greens, Irl), and adopted unanimously by the Committee under the consultation procedure, calls on the Member States to implement the Nitrate Directive from 1991 "fully and swiftly". Apart from health problems (excess nitrites in the blood), marine pollution (accelerated growth of algae as a result of eutrophication) and pollution of groundwater, the great variation in the way the anti-nitrate measures are applied leads to distortions of competition. Although the Member States are seen as primarily responsible, the committee also believes the Commission has a duty to enforce the legislation. It therefore calls for infringement procedures to be speeded up against Member States which do not implement the directive or implement it incorrectly. It also believes that Member States should respect the "polluter pays" principle when devising solutions to the problem. Lastly, the report asks the Commission to bring forward a communication proposing effective solutions to the problem of nitrates. The committee makes a number of suggestions: compliance with the code of good agricultural practice should be made mandatory and EU farm subsidies should be reduced or even withdrawn where the code is not observed; there should be a reduction in the maximum number of animals per hectare; and energy production at small-scale bio-gas plants should be promoted.?

Water policy: pollution by nitrates from agricultural sources (implem. Directive 91/676/EEC)

Adopting the report by Mrs Patricia McKenna (Green, Irl.) on protection of water against agricultural pollution, Parliament calls on the Member States to implement the nitrates directive of 1991 fully and swiftly. This directive aimed to reduce water pollution by nitrates from agriculture and prevent its increase by setting maximum limit values for nitrogen (210 kg N/Ha from 20 December 1998 and 170 kg N/Ha from 20 December 2002), Member States with lower limits not being permitted to increase them. Apart from health problems (excessive nitrites in the blood), marine pollution (proliferation of algae - eutrophication) and pollution of groundwater, the very variable application of measures to combat nitrates distorts competition. Although the Member States bear the main responsibility, Parliament considers that the Commission also has a duty to ensure that regulations are respected. Parliament therefore calls on the Commission to speed up the infringement procedures against Member States which do not implement or incorrectly implement the nitrates directive. It also suggests that national action programmes be implemented as a means of solving the problem. The Member States should apply the 'polluter pays' principle with regard to solutions to problems caused by nitrates. Parliament also calls on the Commission to outline effective solutions to nitrate problems. In this regard, it proposes: - making compliance with the code of good agricultural practice mandatory, - drawing up specific requirements regarding the setting aside of protected areas, - reducing the number of animals to a maximum per hectare as a structural measure, - promoting energy production at smallscale biogas plants. Parliament also recommends that the horizontal measures proposed by the Commission in the context of AGENDA 2000 to promote environmental protection in agriculture (interaction between market-related direct payments and environmental levies) be made binding, especially with regard to nitrate pollution. Parliament asks the Commission to send it an annual report on implementation of the nitrates directive 91/676/EEC. ?

Water policy: pollution by nitrates from agricultural sources (implem. Directive 91/676/EEC)

The Commission presented a report that concerns the implementation of the "nitrates" directive (Directive 91/676/EEC) and provides an overview of the current situation with regard to the directive together with possible pathways for the future. This Commission report is a synthesis of the information transmitted during 2000-2001 by Member States (2nd reporting exercise). It is completed by aggregated maps and analysis of pressure from nitrogen from agricultural sources in the EU maps, of present NVZs and by a comparative table on the main content and deficiencies of the first action programmes (1996-1999). It illustrates, with some case studies, the positive effects of some farm practices on the quality of water. However, it is emphasised that there is a considerable time lag between improvements at farm and soil level and a response in waterbody quality. In conclusion, the report highlights that although incomplete and lacking of coherence, the water monitoring networks set up by Member States show that more than 20% of EU groundwaters are facing excessive nitrates concentrations, with a continuous increasing trend in the most intensive areas of livestock breeding and fertiliser consumption. At least 30-40% of rivers and lakes show eutrophication symptoms or bring high nitrogen fluxes to coastal waters and seas. The agricultural origin of these N fluxes accounts for 50 to 80% of total N inputs to EU waters, depending on Member States, watersheds and annual variations (Be, DK, D, Fr, Irl reports to the EC,

and EEA report no 4 "nutrients in European ecosystems" - 1999). Following a delay of 5 years or more by Member States to fulfil their commitments for implementation of the Directive and an effective reduction of N losses from agriculture to water, a real improvement can be pointed out in the sensibilisation of Member States during recent years. All Member States have now transposed the directive, set up a comprehensive monitoring network, established a code of good practice, and designated at least partially their vulnerable zones (except Ireland). Indeed the effects of action programmes, often published only in 1997-1999, will be significant only after some years ("tanker" effect of soil and groundwaters), but success stories can already be noticed in regions where intense field controls, including soil analysis, have accompanied dissemination of good practice advice (e.g. in Denmark, some German Länder, East of France, Algarve). A CAP more oriented towards quality rather than quantity, encouraging extensive cropping or breeding, "buffer" natural areas and accurate balanced fertilisation, can further contribute to these purposes. However, the failure of a proper application of the "Nitrate" directive in some Member States cannot be rectified only through CAP measures. Controlling nitrate emission is still primarily the task of transposition and implementation of the "Nitrate" Directive. Cost-efficiency studies on preventive measures should also be encouraged, in order to focus action programmes and practice changes towards the most efficient one. Besides financial support for a more environmental-friendly agriculture and dissemination of knowledge, it is necessary that all Member States arrive at a full implementation of the Nitrate Directive, reinforce surveys and controls at field level (including checking of fertilisation plans and records, manure storage and handling, soil analysis, natural buffer strips, etc.), and introduce dissuasive penalties for the producers who do not ensure eco-compliance. Nevertheless a synergy has to be developed in the future work for common implementation of these water directives, on items such as: - Harmonisation of water sampling points, networks, parameters and frequencies for water quality monitoring; - assessment of point and diffuse losses of nutrients to waters, and of the breakdown of their origin; - models correlating environmental impacts (e.g. algae blooms) and causative factors; - cost-efficiency approach for preventive measures. Nitrogen and Phosphorus will certainly appear as priority pollutants in many E.U. watersheds.?

Water policy: pollution by nitrates from agricultural sources (implem. Directive 91/676/EEC)

The aim of this present report is to inform the European Parliament and the Council on the state of the implementation of Council Directive 91/676/EEC (the Nitrates Directive), in accordance with its Article 11. It is based on the information transmitted by EU 15 Member States in the period 2004-2006 (3rd reporting exercise 2000-2003) and is accompanied by aggregated maps of pressure from nitrogen from agricultural sources, of water quality data and of designated nitrate vulnerable zones. It, therefore, deals principally with EU 15.

Evolution of pressures from agriculture since the last reporting period: the trend towards greater intensification and higher productivity during much of the past fifty years was accompanied by a significant increase in the use of both inorganic nitrogen (N) and phosphate fertilisers. However, since the mid-Eighties, a progressive reduction in fertiliser consumption has been recorded and this trend has continued in the period 2000-2003. At EU 15 level, the reduction recorded in the period 2000-2003 compared to the previous period 1996-1999 was 6% for nitrogen and 15% for phosphate fertilisers respectively, with downwards trends continuing also in 2004 and 2005.

Results of water quality survey

Groundwater: in the period 2000-2003, 17% of EU monitoring stations had nitrate concentrations above 50 mg NO₃/l, 7% were in the range 40 to 50 mg NO₃/l and 15% were in the range 25-40 mg NO₃/l. Approximately 61% of the groundwater stations had a concentration below 25 mg NO₃/l. Comparison with the data of the previous reporting period shows that, at EU 15 level, stable and decreasing trends are prevalent (64% of the monitoring stations, of which 30% with decreasing trends). However, 36% of the monitoring stations still show an upwards trends. The Member States with increasing trends in more than 30% of monitoring stations were Belgium (Wallonia), France, Spain, Portugal, Germany, Ireland, United Kingdom, the Netherlands and Luxemburg. In general, however, with the exception of Spain, France, United Kingdom and Belgium, the percentage of stations with increasing nitrate concentrations is counterbalanced by a similar or even higher percentage with improving quality.

Surface Water: average nitrate concentrations below 10 mg NO₃/l were observed in 53% of the monitoring stations and equal or below 2 mg NO₃/l in 19% of monitoring stations notably in mountainous areas. In 2,5% of the monitoring stations nitrate concentration exceeded 50 mg NO₃/l and in 4% recorded values in the range 40 to 50 mg NO₃/l. Member States with the highest proportion of sampling points showing nitrate concentration above 50 mg NO₃/l were United Kingdom, France and the Netherlands. The comparison with the 1996-1999 surveys shows that, in the large majority of surface waters, nitrate concentration is decreasing or stable. This would confirm an overall decreasing trend observed in the previous reporting period, but further data would be needed to assess the influence of climatic conditions and urban wastewater treatment improvement in this evolution. In 14% of monitoring stations the concentration is increasing. Decreases or stable nitrate concentrations in surface water were reported as generalised trends in Denmark (freshwaters), Austria, Ireland, Sweden, Germany and the Netherlands (freshwaters). Incidence of sampling stations with increasing trends is particularly high in north-west and southern France, southern England, eastern Spain and Portugal.

Designation of nitrate vulnerable zones: Member States are required to review nitrate vulnerable zones at least every four years on the basis of the results of water monitoring. In the period 2000-2003 further progress has been made in nitrate vulnerable zone designation. Seven out of fifteen Member States took the option in the Nitrates Directive not to identify specific nitrate vulnerable zones, but to establish an action programme through the whole territory. In addition to Austria, Denmark, Finland, Germany, Luxemburg and the Netherlands, Ireland established a whole territory approach in March 2003. Other Member States increased, in several cases substantially, the nitrate vulnerable zones since 1999. Overall, in EU 15, designation of nitrate vulnerable zones increased from 35,5% of the territory at the end of 1999 to 44% at the end of 2003. From 2003 onwards further designations were made, in Italy, Spain, Portugal and United Kingdom, Northern Ireland. Belgium has established the procedure to increase its designation to include 42% of Wallonia territory and all Flanders. However, based on review of available information on nitrogen pressure and water quality, in particular, with regard to eutrophication and shallow groundwater there are still some gaps in designation. Work is necessary to eliminate these gaps.

Action Programmes: by the end of 2003, all Member States, with the exception of Ireland, had, albeit some rather belatedly, established one or more action programmes on their territory. Ireland finally established its programme in 2006. Member States have provided information regarding the newly established action programmes since 1999 and on the modifications introduced as a result of the periodic review required by the Nitrates Directive. Approximately 110 action programmes were in place by the end of 2003. Although progress in the quality of action programmes is being made, many still show several areas of non conformity. Several Member States failed to require compliance with the standard for manure nitrogen application. Another key measure, minimum storage capacity of livestock manure, was not established as mandatory in some action programmes. The Commission gives details of areas where action programmes did not conform to requirements. However, notwithstanding the need for further improvement, in 2000-2003, progress was made through design and implementation of new action programmes and improvement of the measures of the existing action programmes in the context of the periodic revision. Further progress is now being made with improved quality of the measures.

Forecast in water quality: few Member States provided quantitative information on the time scale during which either a stabilization of the present level of pollution or a recovery of the water quality (both for nitrate and eutrophication) is forecast to be achieved. The difficulty of drawing conclusions depends on

the many uncertainties regarding climate and transport processes in soils. A general conclusion is that it will take several years before improvements in water quality can be observed as a result of the implementation of the measures of the action programmes and modification of the agricultural practices (including reduction of the number of livestock). In the few cases in which a timescale of restoration of water quality is provided (sometimes as a result of simulation for specific basins) it ranges from a minimum of 2-4 years to more than 30 years. Action programmes are now established in all new Member States. The Commission is analysing the designation and the action programmes to assess their compliance with the Nitrates Directive.

Infringement proceedings: there are proceedings against 7 Member States, mainly for insufficient designation of nitrate vulnerable zones and non conformity of action programmes.

Conclusions: the third report on the implementation of Nitrates Directive for the reporting period 2000-2003 shows improvement in the quality of monitoring and reporting. With regard to water quality, on groundwater, although the overall trend is stable or improving in 64% of sites, nevertheless an increase in nitrate pollution was observed in 36% of sites and 17% of sites showed nitrate concentration above 50 mg per litre. In surface waters stable or decreasing nitrate concentrations were observed in 86% of monitoring sites, confirming trends already seen in several Member States in the previous report. However, further data would be needed to assess the influence of climatic conditions and urban wastewater treatment improvement on this development. Significant progress has been made regarding both designation of vulnerable zones and action programmes. Vulnerable zones increased from 35,5% of EU 15 territory in 1999 up to the 44% in 2003, with further designations thereafter. However, based on review of available information on nitrogen pressure and water quality, the Commission considers that there are still gaps in designation which need to be filled. Progress in the quality of action programmes has been significant in the recent years and should contribute to the improvement of water quality in future reporting periods. The Commission's overall analysis is that significant progress is now being made in the implementation of the Nitrates Directive, but that considerable further work in improving designations and the quality of action programmes will be required in order to fully achieve the objectives of the Directive with regard to water quality. It looks to continued increasing cooperation from Member States in this work.

Water policy: pollution by nitrates from agricultural sources (implem. Directive 91/676/EEC)

[The Commission presents its report on the implementation of Council Directive 91/676/EEC \(?the Nitrates Directive?\) concerning the protection of waters against pollution caused by nitrates from agricultural sources based on Member State reports for the period 2004-2007.](#) This reporting exercise includes for the first time all 27 Member States. All new Member States, have established monitoring networks, designated vulnerable zones and established action programmes.

Evolution of pressures from agriculture since the last reporting period: the progressive reduction in mineral nitrogen fertilizer consumption, which started in the early 1990s, stabilized during the period 2004-2007 for the EU 15. At EU 27 level the nitrogen consumption shows a slightly increasing trend. As compared to the last reporting period, the yearly total amount of mineral nitrogen fertilizer consumption remained stable around 9 million tons in the EU-15 whereas it has increased by 6%, from 11.4 to 12.1 million tons, in the EU 27. Consumption of mineral phosphorus fertilizers reduced with 9% for EU the 15, while it decreased by only 1% for the EU 27 as compared with the last reporting period.

The decreasing trend in animal numbers noted in the last reporting period stabilised in the period 2004-2007. Comparison between 2003 and 2007 show that for EU 15 pig and poultry numbers -apart from laying hens- decreased, while goat sheep and cattle numbers slightly increased. Dairy cattle numbers increased with 7.6% in EU 15. For EU 27 similar trends are noticed, with a more pronounced decrease in poultry numbers- apart from laying hens.

The amount of nitrogen from animal husbandry spread annually on agricultural soils in the EU 27 has decreased from 9.4 to 9.1 million tons between 2003 and 2007 and from 7.9 to 7.6 for the EU15. There are large differences in pressure from agriculture between Member States. Areas with a high nutrient pressure include among others the Netherlands, Belgium-Flanders and France-Brittany. Member States in Eastern Europe generally have lower pressures due to lower input of fertilizers and livestock density.

The contribution of nitrogen loads from agriculture to surface waters is decreasing in many Member States. Nevertheless, the relative contribution from agriculture remains high. In most Member States agriculture is responsible for over 50% of the total nitrogen discharge to surface waters. The share of nitrogen loads in river basins that comes from diffuse sources remains high in large parts of Europe.

Trends in Groundwater Quality: Comparison with the data of the previous reporting period shows that, at EU 15 level, stable and decreasing trends are prevalent (66% of the monitoring stations, of which 30% with decreasing trends). However, 34% of the monitoring stations still show an upwards trend. In the new Member States that have compared data with the former period (Bulgaria, Cyprus, Estonia and Hungary), 80% of the stations are stable, 11% of the stations show a decreasing trend and 9% show an increasing trend. The Member States with increasing trends in more than 30% of monitoring stations were Belgium, France, Spain, Portugal, Germany, Ireland, Italy and United Kingdom. However, with the exception of Ireland, these Member States show similar or even higher percentages of stations with improving quality. Trend analysis per water quality class shows that in several Member States the share of points exceeding 50 mg per litre is still increasing including Belgium, Denmark, Greece, Spain, France, Ireland, Italy, the Netherlands and the United Kingdom. The share above 50 mg per litre decreased in Austria, Germany, Finland, Luxembourg and Portugal. However, data should be interpreted carefully as many Member States substantially increased the monitoring density which might influence the share of points per quality class. Within groundwater bodies, shallow levels showed higher nitrate concentrations than deeper levels. The highest proportion of contaminated water lies between 5 and 15 metres below the surface.

Trends in fresh surface water: 70% of the monitoring stations show stable or decreasing nitrate concentrations. In 3% the concentration is exceeding 50 mg per litre while in 21% the concentration is below 2 mg per litre. In 33% of the stations monitoring trophic status, the water is defined eutrophic or hypertrophic. The pressure from agriculture with respect to surface water nitrate pollution has decreased in many Member States, although still, agriculture contributes largely to nitrogen loads to surface waters.

A further increase in the area of vulnerable zones as compared to the former reporting period is observed in the EU 15. Designated zones increased from 43.7% to 44.6 % of the EU 15 territory, while 39.6% of the EU 27 territory is designated, including the territory of Member States that apply an action programme on the whole territory. However, water quality data show that, in several regions, for EU 15 and EU 12, further increases in designation are necessary according to the criteria set out in the Nitrates Directive.

The quality of action programmes further improved as compared with the last reporting period in the EU 15. However, it is still often driven by infringement procedures. All new Member States established action programmes, but several programmes need further improvement in order

to attain full compliance with the requirements of the Nitrates Directive, particularly the provisions that relate to storage construction, balanced fertilisation and establishment of periods during which land application is banned. Availability of information and training services to farmers and efficient control programmes are essential in order to ensure effective implementation of programmes in the field.

In intensive livestock regions an increased interest in manure processing techniques is observed, allowing more efficient nutrient management often combined with production of energy from biogas production. The efficient nutrient management is playing a role in reducing farm costs.

Experiences of implementation and advanced scientific insights in synergistic effects of measures in nitrate action programmes suggest that nitrogen policies require an integrated approach by considering the whole nitrogen cycle and that implementation of the Nitrates Directive brings substantial benefits notably in terms of reductions in ammonia and greenhouse gas emissions as well in the wider field of water protection under the Water Framework Directive. More attention to this aspect of nitrogen management will be necessary in future, as well as an adequate and continuous support from the scientific community at both National and European level.

The Commission will continue to work with Member States to improve implementation with the common aim to protect waters. It will continue to take legal action where it considers necessary.