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REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

on the implementation of Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources based on Member State reports for the period 2016–2019

{SWD(2021) 1001 final}

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1. WHAT THE PROBLEM IS

Nutrients such as nitrogen (N) and phosphorus (P) are essential elements for the plants. They are often used as fertilisers in agriculture to guarantee higher yields and quality products. However, the increasing demand in food production has resulted in an increased production and use of fertilisers associated with considerable inefficiencies, leading to pollution of water, air and soil, affecting human health and the environment.

At a global level, N and P surplus into the environment are already exceeding safe planetary boundaries, representing a severe threat to nature as well as to the climate[1]. Europe makes a considerable contribution to this form of pollution and the European Environment Agency (EEA) estimates that in Europe the limit for N losses is exceeded by a factor of 3.3 and the limit for P losses by a factor of 2[2].

The Biodiversity[3] and the Farm to Fork[4] strategies set a common objective of reducing nutrient losses in the environment by at least 50% by 2030, while preserving soil fertility. Council Directive 91/676/EEC[5] concerning the protection of waters against pollution caused by nitrates from agricultural sources ("the Nitrates Directive") is a key piece of legislation to achieve this target and other objectives of the EU Green Deal[6].

The Nitrates Directive constitutes also a basic measure under the Water Framework Directive (WFD)[7], which requires all European surface waters – lakes, rivers, transitional and coastal water, and groundwater – to reach "good status" by latest 2027. Together with the Urban Waste Water Treatment Directive (UWWTD)[8], the Nitrates Directive plays a key role in improving the status of EU water bodies, as nutrient pollution is one of the main causes for failure of good status[9,10].

1 Steffen, W., et al., 2015, 'Planetary boundaries: guiding human development on a changing planet', Science, 347(6223), p. 1259855.
2 Joint EEA/FOEN Report (2020) Is Europe living within the limits of our planet? An assessment of Europe's environmental footprints in relation to planetary boundaries
3 Communication from the Commission - EU Biodiversity Strategy for 2030 - Bringing nature back into our lives, COM/2020/380 final
4 Communication from the Commission - A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system, COM/2020/381 final
5 Council Directive (91/676/EEC) concerning the protection of waters against pollution caused by nitrates from agricultural sources
6 Communication from the Commission - The European Green Deal, COM/2019/640 final
7 Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy
8 Council Directive concerning urban waste water treatment (91/271/EEC)
9 European waters -- Assessment of status and pressures 2018 — European Environment Agency
10 SWD(2019) 30 final - A European Overview of the second River Basin Management Plans

Furthermore, the Nitrates Directive is an essential instrument to prevent nutrient pollution of coastal and marine waters under the Marine Strategy Framework Directive (MSFD)[11,12].

The Nitrates Directive requires Member States to:

– identify waters affected and at risk of being affected by nitrates pollution as well as designate as Nitrates Vulnerable Zones (NVZ) the areas draining into these waters where agriculture contributes significantly to this pollution;

– develop action programmes with measures reducing and preventing nitrates pollution, apply such programmes to NVZ or to the whole territory, and to reinforce these measures as soon as it appears that they are not sufficient to achieve the objectives of the Directive.

It also requires the Commission to inform the European Parliament and the Council every four years on the state of the implementation of the Directive based on Member States reports.

This report is accompanied by a Staff Working Document **(**SWD(2021) 1001**)** which includes maps and tables on indicators of nutrient pressures from agricultural sources, water quality and designated NVZ.

2. EVOLUTION OF PRESSURES FROM AGRICULTURE

Agricultural area and livestock[13]

The EU agricultural area covers around 47% of the total EU27+UK area. The agricultural output increased by 14.5% between 2010 and 2019.

Livestock production is responsible for an estimated 81% of agricultural nitrogen input to aquatic systems and 87% of the ammonia from agriculture emission to the atmosphere[14].

The highest livestock densities, expressed in livestock unit per hectare, were found in the Netherlands (3.8), with an increasing trend since 2013, Malta (2.9), with a decreasing trend since 2010 and Belgium (2.8), for which it remains stable since 2005.

Nutrient balance[15]

Nutrient balance is defined as the difference between the nutrient inputs entering a farming system (mainly fertilizers) and the nutrient outputs leaving the system (mainly crops and fodder). A nutrient surplus occurs when the plants do not take up all the nutrients and represents a potential loss to the environment, while a negative balance indicates that the soil is mined, with a risk of soil fertility loss. Eurostat promoted the use of a common methodology[16] to calculate nutrient balances, but it is

11 Directive 2008/56/EC establishing a framework for community action in the field of marine environmental policy

12 EEA Report No 17/2019, Marine messages II

13 Tables 1 to 9 and maps 1 to 5 in the SWD

14 Westhoek H., Lesschen J.P., Leip A., Rood T., Wagner S., De Marco A., Murphy-Bokern D., Pallière C., Howard C.M., Oenema O. & Sutton M.A. (2015) Nitrogen on the Table: The influence of food choices on nitrogen emissions and the European environment. (European Nitrogen Assessment Special Report on Nitrogen and Food.) Centre for Ecology & Hydrology, Edinburgh, UK.

15 Tables 10 to 17 in the SWD

16 Methodology and Handbook Eurostat/OECD Nutrient Budgets (2013)

not used by all Member States, which impedes comparison. Some Member States also do not report nutrient balances to Eurostat[17].

For EU27+UK, between the reporting periods 2008-2011 and 2012-2015, both net nitrogen and phosphate balance slightly increased at EU-28 level from 31.8 to 32.5 kg N/ha and from 1.8 to 2.0 kg P/ha respectively. For the 2016-2019 period, the N balances are higher than 100kg/ha for Belgium, Cyprus, Luxembourg and the Netherlands. Phosphate balances are higher than 20kg/ha for Cyprus, Ireland, and Malta. Since 2008, for those Member States showing high nutrient surplus, the only decrease was observed in Malta regarding the phosphate balance.

N-discharge into the environment from agriculture[18]

Regrettably, the information about the contribution of agriculture to nitrogen discharge in the aquatic environment has not been provided by 13 Member States[19]. Based on the data of those who did, agriculture is responsible from 22 % to 99% of the total load of nitrogen into the environment, on average 77 %, so it is the most prominent source. Compared to the previous period, we see an uneven picture: for the 14 Member States that reported data for the two last reporting periods, the part of the nitrogen discharge attributed to agriculture decreased for six Member States and increased for eight Member States.

3. FINDING WHERE POLLUTION IS

Flagship achievement 1 – Viewer for a better access to nitrates report data
The Commission Joint Research Centre developed an online viewer allowing the access to reporting data under the Nitrates Directive. Regional and even individual station records are accessible for water quality, and agricultural data are also provided.

Monitoring[20]

The Nitrates Directive requires Member States to draw up and implement suitable monitoring programmes to assess the effectiveness of the action programmes. It sets basic principles and criteria for water monitoring, but aspects such as the monitoring network density, stability and frequency of sampling remain the responsibility of Member States.

For the first time, Member States were requested to report on each of the monitoring stations that were removed from their monitoring network, the reason for such removals and the alternative stations put in place in case pollution was persistent. Over the two last reporting periods, trends could be calculated for 83% of for groundwater stations (yet only 20% in Sweden), and 75% for surface water stations (yet less than 50% for Greece, Hungary, Latvia, Malta, Slovakia and Sweden).

For saline waters, it is welcomed that the strong decrease of 29% on the total number of monitoring stations observed between 2008 and 2015 was partially corrected with additional stations. However, regrettably, the number of saline water monitoring stations remains relatively low in certain Member States[21]. The monitoring of saline

17 BE, CY, DK, EE, EL, LT, LU, MT
18 Table 18 in the SWD
19 AT, BG, DK, EE, EL, FR, HR, IT, LT, LU, MT, RO
20 Tables 19 to 23 and figures 1 to 5 in the SWD
21 FR, HR

water is very important to ascertain the pollution in marine waters and the effects on sea biodiversity.

Groundwater[22]

In 2016–2019, 14.1% of groundwater stations still exceeded in annual average 50 mg nitrates per litre, a situation comparable to the previous reporting period, in which 13.2% stations exceeded 50 mg/l.

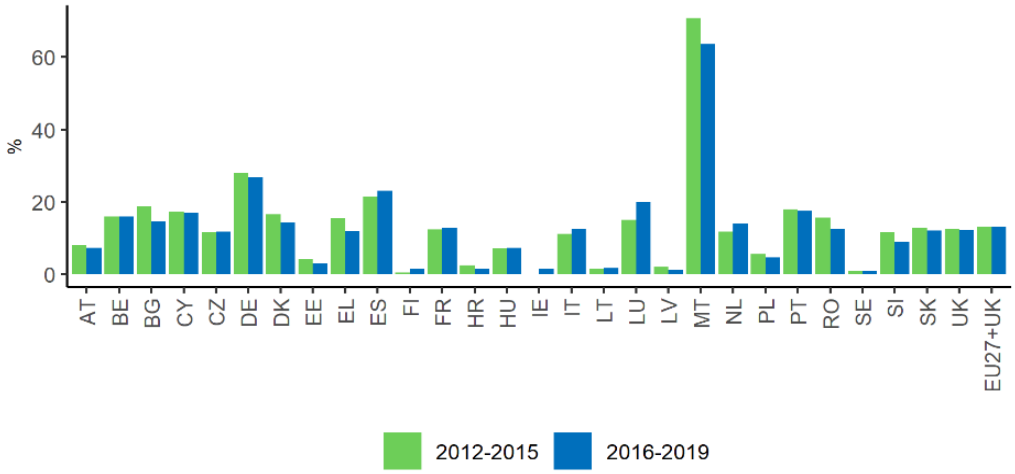


Figure 1: percentage of groundwater station exceeding 50mg nitrates per litre.

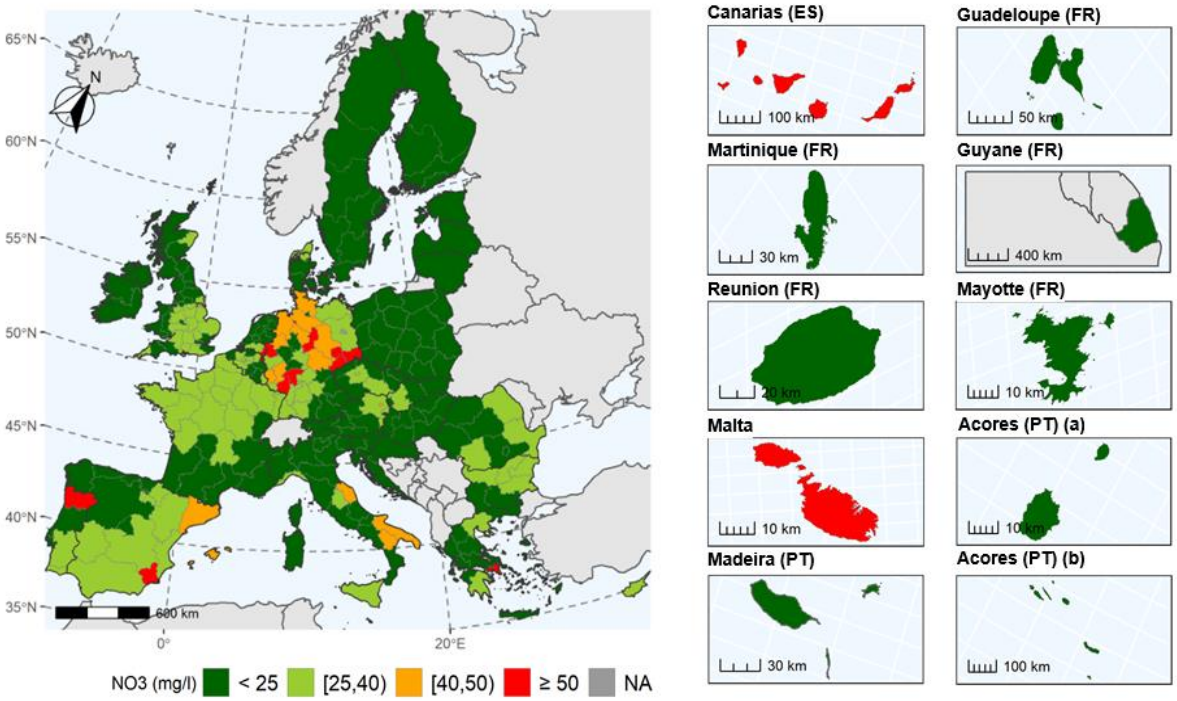


Figure 2: Annual average nitrate concentrations in groundwater at the NUTS2 level for the reporting period 2016-2019

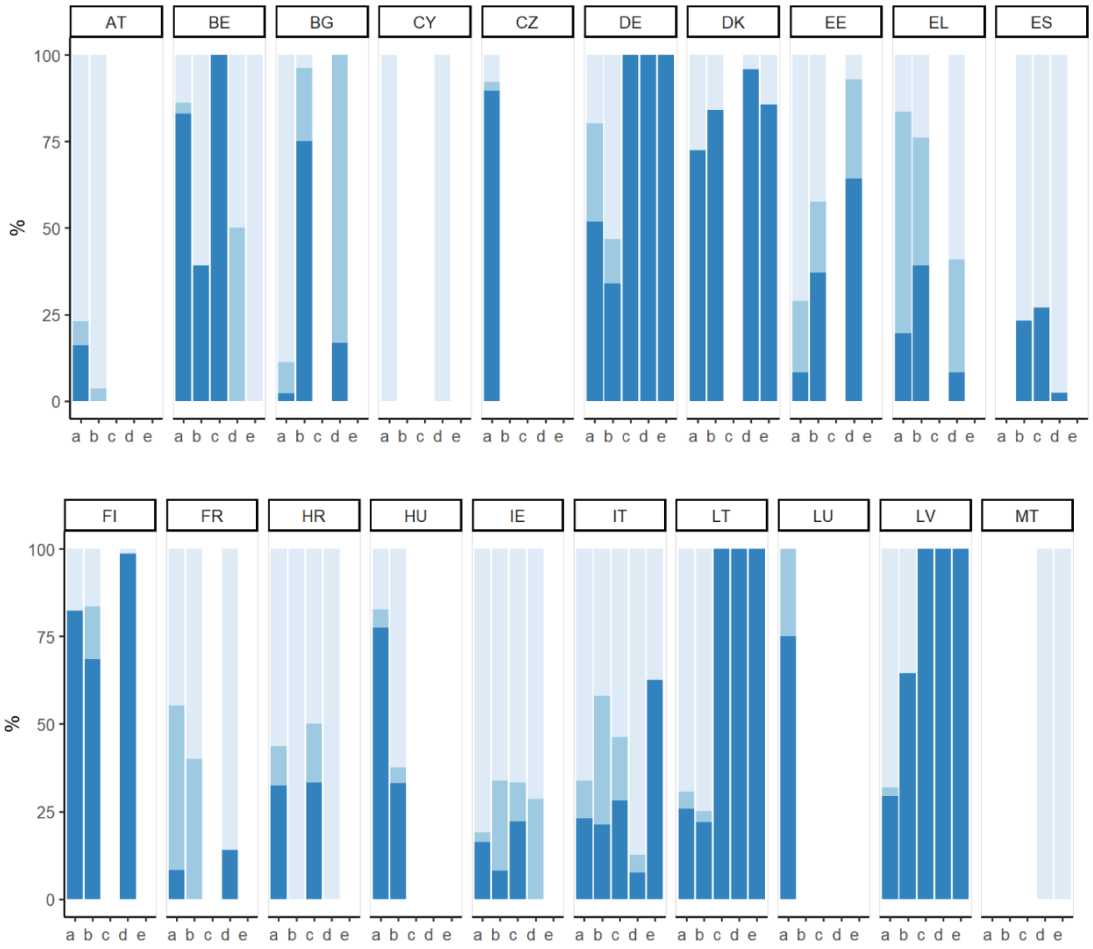
[22] Tables 24 to 27, figures 6 to 9 and maps 6 to 17 of the SWD

Surface water[23]

Nitrates and phosphorus in surface waters can lead to eutrophication, i.e., oxygen depletion due to algal blooms which impacts fresh and marine water ecosystems. Eutrophication, whether induced by nitrates or also phosphorus, triggers the obligation for Member States to take remedial action for these waters under the Directive[24].

For the assessment of the trophic status, the Commission has recommended to follow the classification of the Guidance document on eutrophication used for the WFD implementation[25], which was the case for a majority of Member States. However, parameters used for this assessment varied widely among Member States.

At EU level, 36% of rivers and 32% of lakes, 31% of coastal and 32% of transitional water and 81% of marine waters were reported as eutrophic. On the other hand, for fresh surface waters, unfortunately, no trends are available at EU level for the trophic status either, because of the lack of data and the differences in the methodologies to define trophic status applied by Member States.



23 Tables 28 to 44, figures 10 to 20 and maps 18 to 43 of the SWD

24 The European Court of Justice Court ruled (case C-258/00) that excluding certain categories of waters owing to the supposedly fundamental role of phosphorus in the pollution of those waters is incompatible with both the logic and the objective of the Directive.

25 Guidance document on eutrophication assessment in the context of European water policies. Guidance document No 23

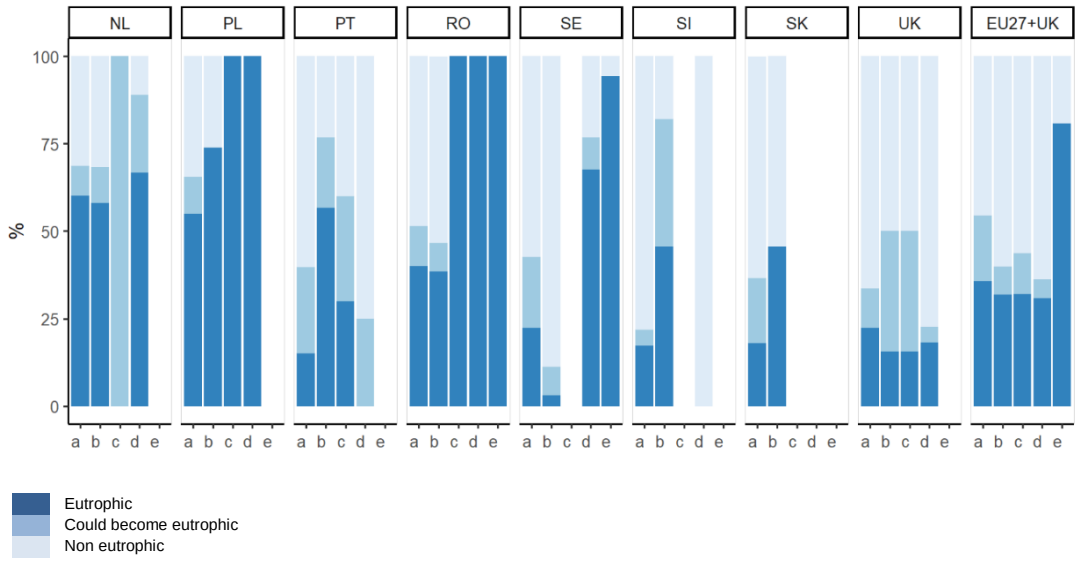


Figure 3: Frequency diagram of the trophic status of rivers (a), lakes (b), transitional waters (c), coastal waters (d) and marine waters (e) in reporting period 2016-2019.

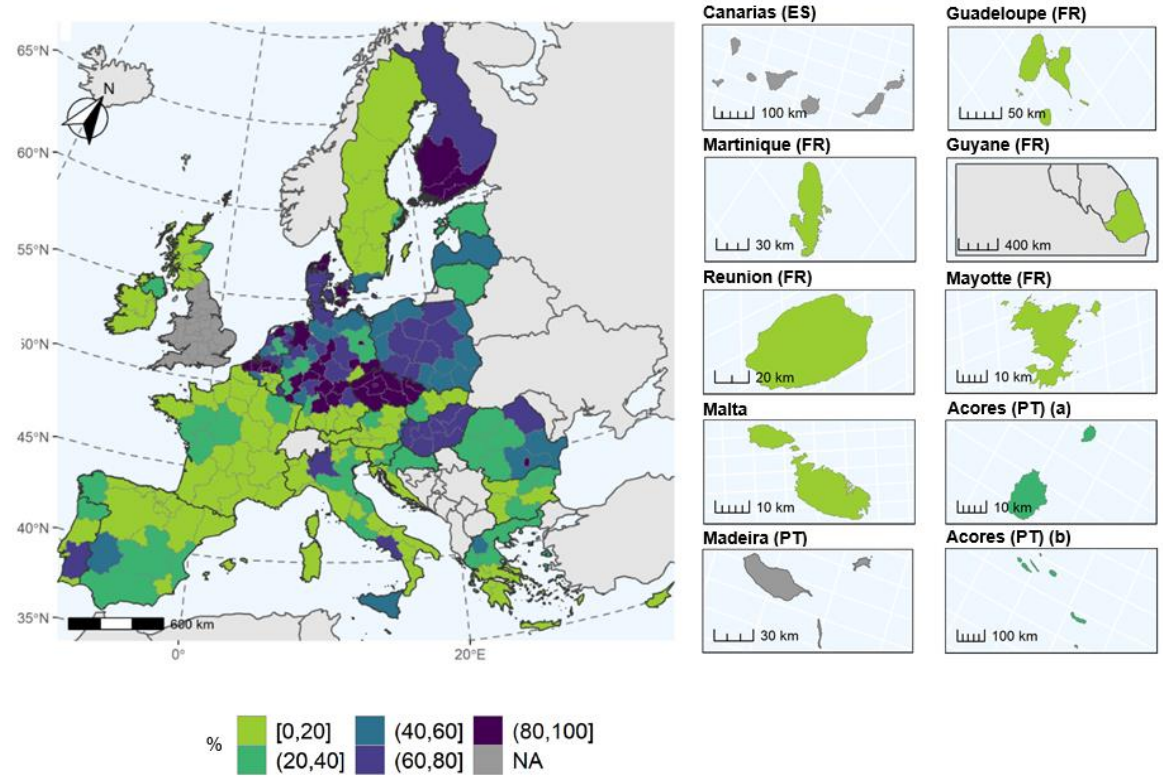


Figure 4: Percentage of surface waters stations (all categories) in eutrophic status at the NUTS2 level, for the reporting period 2016-2019

Flagship achievement 2: Our Baltic conference

Taking into account the very acute eutrophication problem which affects 97% of the Baltic Sea, on 28 September 2020, on the occasion of "Our Baltic Conference" under the auspices of Commissioner Sinkevičius, Ministers of Agriculture, Fisheries and Environment of the Baltic Sea Member States committed together in a Common Political Declaration to boost efforts to bring the Baltic Sea to achieve a good environmental status by reducing key pressures, and especially nutrients pressure.

This Declaration refers to the Nitrates Directive as a key tool to achieve this good environmental status. It calls on Member States to revise the designation of the NVZ where appropriate. It also calls for the revision of the measures in the action programmes.

4. DESIGNATING THE POLLUTED AREAS[26]

Member States have to find the polluted areas and designate them as NVZs to apply compulsory measures therein. They may, instead of designating NVZs, opt to apply their action programme throughout their entire territory. Austria, Denmark, Finland, Germany, Ireland, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Romania, Slovenia and Belgium (limited to Flanders) have followed this approach. In the UK, this was also the case for Northern Ireland.

Some Member States also define additional types of zones (e.g. "hotspots" or "red areas") with reinforced measures because of a local higher level of pollution or because of the proximity to drinking water abstraction points. This can be the case for both Member States designating NVZs or adopting the whole-territory approach.

Between 2012-2015 and 2016-2019 the total area of NVZ (including the Member States that apply a whole-territory approach) has increased by 14,4%.

However, the water quality data reported by Member States show that there are areas with water pollution or potential pollution that are not included in NVZ. Bulgaria, Cyprus, Spain, Estonia, Latvia and Portugal have a very high number of hotspots that are not included in the NVZ.

In some Member States, such as Bulgaria, Spain, Hungary, Italy and Slovakia, the NVZ are sometimes very limited areas that do not take into account the whole water catchment area, resulting in a very fragmented designation and a reduced efficiency of action programmes.

Despite what is prescribed by the law, it has been observed that eutrophication is not sufficiently taken into account when identifying and designating polluted areas. The Commission expect that all Member States urgently address this shortcoming, in order to ensure an appropriate and effective designation of NVZ.

5. WHAT MEMBER STATES DO ABOUT IT

Action programmes apply within NVZ or to the whole territory. They have to be updated at least once every 4 years. Several Member States have adopted action programmes also at regional level.

Measures in the action programmes should ensure balanced fertilisation, i.e. that fertilisers, and especially nitrogen fertilisers, are used with the highest efficiency, minimising nitrates losses in the environment, thus reducing and preventing pollution. More and more Member States (17 for this reporting period) also include measures related to phosphorus fertilisation, which is necessary when phosphorus losses lead to eutrophication of waters.

Scientific and technical recommendations for establishing action programmes are available for Member States since 2012 for each of the type of measure[27].

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26 Tables 45 and 46 and maps 44 and 45 of the SWD

27 Recommendations for establishing Action Programmes under Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources (2012)

Most Member States adopted new or revised action programmes during the reporting period 2016-2019. Updates are still needed for Belgium (Wallonia), Cyprus, Finland, and Romania.

Flagship achievement 3 - Nitrate Action Programme Information system (NAPINFO)
The Commission made available to the public a unique compilation of all the approaches and the measures by all Member States in action programmes under Directive 91/676/EEC[28]. This very comprehensive database, prepared in collaboration with Member States, also includes an analysis of the potential of these measures to tackle nutrient pollution[29].

The analysis in the NAPINFO report reveals that there is significant variability between action programmes with respect to the measures implemented and to the level of ambition of these measures. There is scope for Member States to learn from each other, especially where regional circumstances are similar (climate, soil). The exchange of best practices allowed by this database should be used to optimise action programmes.

20 Member States reported forecast on water quality, 9 predicted a further reduction in nitrate concentrations in groundwater and surface waters, 6 a negative trend, and 5 a status quo. It should be noted that the Directive requires that Member State take preventive action when the quality of water stagnates and does not improve. The Commission invites all Member States to use and report forecast on water quality, in order to duly prevent any risk of further water pollution.

Members States often note that the effects of climate change make it difficult to predict the future quality of surface waters and groundwater. The unexpected dry conditions across Europe in 2018, 2019 led to reduced crop yields but also increased nutrient pollution. Climate change also leads to periods with strongly increased rainfall that can lead to accumulation of water-saturated lands, flooding and high risk of nutrients losses.

Current action programmes may not adequately address these risks yet and may not be efficient to limit nutrient losses during and after droughts or flooding. The Commission insists that Member States should take these projections and risks into account in the revision of the action programmes, by applying the precautionary principle.

6. LIMITING THE USE OF MANURE IN POLLUTED AREAS

One of the most important provisions of the Directive is that in areas in which action programmes apply, farmers may not spread more than 170 kg nitrogen per hectare per year derived from manure in their fields. This limit applies all over the EU, wherever water is already polluted or risks being polluted, irrespective of the climatic and soil conditions and the crops grown.

However, growing conditions in the colder northern regions might be different compared to the mild western Atlantic regions or to the hot and dry conditions in the Mediterranean. For this reason, the Nitrates Directive foresees the possibility to apply a higher amount of nitrogen per hectare per year. It is of outmost importance to highlight that these derogations can only be given provided that these amounts do not hamper the achievement of the Directive's objectives in terms of water quality. To deviate form 170 kg/ha ceiling, the Member State must request a derogation and

[28] https://ec.europa.eu/environment/water/water-nitrates/studies.html
[29] https://webgate.ec.europa.eu/fpfis/wikis/spaces/viewspace.action?key=NAPINFO

prove with scientific evidence that for defined crops, in the local conditions the use of higher amounts will not hamper in any way water quality.

This possibility to use higher amount of manure is granted by Commission Decisions that identify the types of farms and set stricter agro environmental conditions. These Decisions are adopted following a favourable opinion of the Member States in the Nitrates Committee[30], which assists the Commission in the implementation of the Directive.

During the reporting period, derogations were granted to the following Member States: Belgium, with regard to region of Flanders, Denmark, Ireland, Italy, with regard to the regions of Lombardia and Piemonte (expired in December 2019 and not renewed) and the Netherlands. As regards the UK, a decision with regard England, Scotland and Wales expired in December 2016, and a new one was granted as regards Northern Ireland (valid for the whole reporting period).

7. WHAT THE COMMISSION IS DOING TO ENSURE COMPLIANCE

The Commission is in constant dialogue with Member States to ensure full compliance with the Directive. This dialogue focuses on the content of the action programmes, the need for additional measures, for new or revised NVZ designations and for reinforced water quality monitoring. In doing so, the Commission considers also the requirements in terms of water quality under the WFD and the MSFD, as well as the risks of ammonia emissions from fertilisers, regulated under the National Emission reduction Commitments Directive[31].

During the reporting period, 10 infringement cases were ongoing against Member States:

- Belgium: Wallonia on the nitrate action programme, Flanders on derogation conditions
- Bulgaria (closed in 2018);
- Estonia (closed in 2017);
- France on NVZ designation (closed in 2019);
- Germany on the action programme;
- Greece on NVZ designation and the action programmes (closed in 2020);
- Italy on the stability of the monitoring network, NVZ designation and action programmes;
- Poland on NVZ designation and the action programmes (closed in 2018);
- Slovakia on water quality monitoring and the nitrate action programme (closed in 2019); and
- Spain on the stability of the monitoring network, NVZ and the nitrate action programmes.

30 https://ec.europa.eu/transparency/comitology-register/screen/committees/C11400/consult?lang=en

31 Directive (EU) 2016/2284 on the reduction of national emissions of certain atmospheric pollutants

8. CONTRIBUTION OF THE COMMON AGRICULTURAL POLICY

The latest reform of the Common Agricultural Policy provides for tools to address nutrient pollution.

The new enhanced conditionality sets the obligations for more ambitious and sustainable agricultural commitments through 'Good Agricultural and Environmental Conditions (GAECs)'[32] and Statutory Management Requirements (SMRs), the latter including the compliance with the Nitrates Directive and the WFD.

In addition, the new ecoschemes will benefit from financial support to reward farmers adopting good environmental and climate practices beyond the mandatory baseline of conditionality enabling to meet the Green Deal's ambitions.

In its recommendations for CAP Strategic Plans, the Commission requested action tackling nutrient pollution for 26 Member States.

The farm advisory services will inform farmers about innovation, research, practices and technologies to ensure among others environmentally-friendly farming, including the reduction of nutrient losses.

9. CONCLUSIONS

The implementation and enforcement of the Nitrates Directive has cut off nutrient losses from agriculture over the last 30 years. Evidence allows to conclude that without the Directive the levels of water pollution in the EU would be significantly higher.

The data on nitrates concentration at EU level show that groundwater quality has improved since the adoption of the Directive, however the further improvement goes very slow since 2012. This can be interpreted as the low hanging fruits having been already collected and now more far reaching measures being needed to improve the positive trend. A high percentage of groundwater monitoring stations still show levels that are above the maximum 50 mg nitrate/l in Malta, Germany, Luxemburg, Spain, Portugal and Belgium (Flanders region).

Water quality monitoring from Member States has improved regarding eutrophication assessment as well as concerning saline water. Eutrophication is a major problem for all types of surface waters, as inland, transitional, coastal and marine water are still severely affected. A number of Member States that stand out by their large number of waters that are eutrophic are the Czech Republic, Finland, Denmark, Luxemburg, Belgium, Germany, Latvia and Poland.

In spite of considerable efforts from most Member States and farmers, which respectively designed and applied measures mitigating nitrates losses in waters, the water quality data show that the level of implementation and enforcement are still not sufficient to reach the objectives of the Directive, 30 years after its adoption and in spite of some progress:

– Some Member States record bad water quality all around their territory and a systemic problem to manage nutrient losses from agriculture: Belgium (Flanders region), Czech Republic, Denmark, Germany, Finland, Hungary, Latvia, Luxemburg, Malta, the Netherlands, Poland and Spain.

[32] In particular GAEC 4 – Establishment of buffer strips along watercourses.

– Some Member States have hot spots where pollution is not sufficiently addressed: Bulgaria, Cyprus, Estonia, France, Italy, Portugal and Romania.

Some Member States need therefore to take urgently extra steps to achieve the objectives of the Nitrates Directive, in particular Belgium, the Czech Republic, Luxemburg, Spain, the Netherlands and Germany, which are the farthermost away from these objectives.

More specific conclusions and recommendations for each Member States are provided in the country fiches.

While there is no deadline to reach the water quality objectives of the Nitrates Directive, the WFD objectives of good ecological and chemical status should be reached by 2027 at the latest, and the observed water quality trends show that this will not be achieved without drastic changes to the measures in place.

The Commission will reinforce its actions to improve the Directive implementation and enforcement to match its objectives. This is a prerequisite for reaching a reduction of nutrient losses by 50% by 2030 set in the context of the EU Green Deal.

10. THE WAY FORWARD

The Commission will develop an Integrated Nutrient Management Action Plan[33] in 2022, building on the Zero Pollution Action Plan[34]. This will help the coordination of efforts and will aim at addressing nutrient pollution at source, identifying the nutrient load reductions needed to achieve the EU Green Deal targets on nutrients, stimulating the markets for safe and sustainable recovered nutrients, and increasing the sustainability of the livestock sector.

Considerable progress has been made regarding the development of manure processing technologies. Recovered nitrogen that replaces inorganic fertilisers reduces CO_2 emissions, while recuperated phosphates reduce dependency of imported phosphate rock and remaining organic fractions can be used on local fields. However the most advanced technologies are not yet widely used and there are a number of economic barriers due to the high costs of these processes, the transport costs and the frequent need to pay the farmers for the application of these products on their fields. Furthermore, the maximum level of nitrogen from manure that can be applied under the Nitrates Directive includes also manure in a processed form.

The new Fertilising Product Regulation[35] will extend in July 2022 the scope of the current Regulation on fertilisers[36] from purely inorganic fertilisers to organo-mineral and organic fertilisers, paving the way for the marketing of these processed organic fertilisers in the EU internal market.

33 Biodiversity and the Farm to Fork strategies

34 Reference to the Communication to be added

35 Regulation (EU) 2019/1009 laying down rules on the making available on the market of EU fertilising products, OJ L 170, 25.6.2019, p. 1

36 Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilisers

Flagship achievement 4 - 'REcovered Nitrogen from manURE': RENURE

The Circular Economy Action Plan[37] promotes the recycling of nutrients from manure and other organic sources to replace chemical fertilisers, whose production is associated to drawbacks of resource management for P[38] or environmental impact for N[39].

While on one side they increase organic carbon in the soil and the soil fertility, organic fertilisers on the other side can release more nutrients in the environment compared with inorganic fertilisers, thus posing higher risks of water and air pollution. The main challenge is therefore to obtain recycled nutrients that minimise losses in the environment.

The Commission Joint Research Centre completed a study[40] on recovered nitrogen from manure and proposed criteria for its safe use above the threshold established by the Nitrates Directive in a similar way as a non organic fertilizer. The concerned materials are called RENURE, from 'REcovered Nitrogen from manURE'. The Commission is currently considering the options for the implementation of this criterion within the current legal framework.

Funding can be made available by the CAP, State Aid and Interreg[41] but also through the elements of the green transition under the National Recovery and Resilience Plans, explaining how they contribute to reaching the environmental goals set at EU level[42].

The EU research and innovation programme Horizon 2020[43] has invested in numerous projects[44] tackling nutrients management that are currently delivering and deploying their results and innovations. The Horizon Europe programme[45] will also provide financial support for research and innovation in the area of integrated approaches for nutrient management and recovery, as well water protection.

Even if new initiatives to address nutrient pollution are being considered and funding is available, the first necessary actions to address and prevent nutrient pollution from agriculture needs to be undertaken through a higher level of compliance with the Nitrates Directive. This is in line with the EU Treaty principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay[46].

37 Communication from the Commission - A new Circular Economy Action Plan For a cleaner and more competitive Europe COM/2020/98 final

38 Phosphorus is included in the list of EU Critical Raw Materials.

39 The Haber–Bosch process used of N mineral fertiliser production is currently one of the largest global energy consumers and greenhouse gas emitters, responsible for 1.2% of the global anthropogenic CO2 emissions

40 Study on Technical proposals for the safe use of processed manure above the threshold established for Nitrate Vulnerable Zones by the Directive, JRC (2020)

41 https://www.interregeurope.eu/

42 https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en

43 https://ec.europa.eu/programmes/horizon2020

44 https://cordis.europa.eu/

45 https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

46 Treaty on the Functioning of the European Union, Article 191