IFA submission to Agriculture Water Quality Working Group

2nd August 2023

The purpose of this submission is to provide alternative solutions to Article 12 in order to maintain stocking rate thresholds on derogation farms at 250kgN/ha.

Introduction

This submission is being made to address what IFA perceives as flaws associated with Article 12. The objective is to provide workable solutions that can potentially deliver greater improvements to water quality than what could be achieved by reducing the stocking rates on derogation farms and decimating farm incomes.

IFA would like to categorically state that any measures outlined in this submission are conditional on maintaining existing stocking rate thresholds of 250kgN/ha on derogation farms. They set out an alternative approach and are not to be considered if Article 12 is adopted in its current form.

Criteria to assess of water quality under Article 12

It is assumed under the criteria outlined for determining water quality trends that a two-year period is sufficient to capture a trend. However, this assumption is not validated. Within the science community, a minimum of 4 years (rolling average) is used to establish trends. High frequency monitoring (every 10 minutes) undertaken by the Teagasc Agricultural Catchments Programme have enabled a 4-year (rolling average) trend analysis to be undertaken, using the Mann Kendall test. Trend analysis over 4 years and most definitely 2 years may not be a realistic time period, particularly if using less frequent data (weekly/monthly/seasonal monitoring). To ascertain true trends, all data should be subjected to statistical scrutiny over a sufficiently valid period of time rather than the simple reporting of annual means.

Consideration must also be given to established lag times as to when we can expect a measure to deliver improvements in water quality. Lag times refer to the delay between the time when a particular agricultural practice or activity occurs and the time when its impact on water quality is observed. This delay is due to a range of factors, including the time it takes for nutrients to move through the soil and into the groundwater; the time it takes for groundwater to move through the aquifer; and the time it takes for monitoring data to be collected and analysed. As a consequence, it can be difficult to attribute changes in water quality to specific agricultural practices or activities, as the effects of individual practices or activities accumulate over years or decades. It is therefore not possible to make meaningful conclusions about national or regional trends based on a limited number of monitoring sites over a short-term period of 2 or 3 years.

Indeed, recent modelling work completed by Teagasc indicated that there was significant year-to-year variability in N leaching loss to 1m below surface with no change in management. Between 2003 and 2019, modelled N loss to 1m ranged from 37kgN/ha to 83kgN/ha which indicates the overarching impact that weather events can have, irrespective of the significant changes in farm management practices that have been adopted. These delays must be quantified in order to establish realistic deadlines, thresholds and policy expectations, and to design effective best management practices.

In an Irish context, it is reported that the minimum year for measures introduced in 2012 to reduce groundwater nitrate concentrations to mean annual threshold values of 37.5 mg/NO3/L, ranges from 2019 to 2033 depending on the specific unsaturated zone depth and aquifer thickness. Therefore, time lags offer justification

in some scenarios to extend target dates for achieving good water quality status based on the programme of measures.

The current terms of the Commission Decision for Ireland ignore this reality. A recent review of 17 studies concluded that it could take between 4 and 20 years for mitigation measure to have a positive impact on surface water quality and acknowledges that the presence of lag times explain why positive effects are not always evident within defined cycles. Critically, it also concluded that the response time between the implementation of measures and the delivery of water quality improvement broadly increased with catchment size.

Under the terms of the Commission Decision, catchment size is only considered at a macro level. Determining trends at this level over a 2-year period is too narrow to demonstrate the positive impact of mitigation measures that farmers have adopted. It also ignores, and in fact penalises farmers, in areas where an improvement has been demonstrated at sub-catchment level but the catchment at macro level has not yet improved.

Relying on water quality and the trends in water quality of our estuaries to determine maximum stocking rate thresholds is not valid, as it ignores the contribution of wastewater treatment plants and other pressures to declining water status. In recent years the EPA have observed slightly increasing nitrate levels (0.2mg/L/annum) in rivers and estuaries in the south and east of the country. Agricultural land is the dominant land type that surrounds these catchments and has been identified as a significant pressure. However, when understanding the water quality of our estuaries, it is vital that the pressures posed by urban waste water are considered given their significance.

27% of transitional water bodies (estuaries & coastal lagoons) are at risk of not achieving good status and are impacted equally by the combined effects of urban waste water & runoff (40%) and agriculture (43%) as per the draft River Basin Management Plan. The pressure of urban wastewater will impact trends in eutrophication status. The expectation that bovine stocking rate is solely responsible for the nitrate and eutrophication status of an estuary is not justified. Estuaries by their nature represent the cumulative load of all pressures throughout the catchment.

This is particularly important when considering the eutrophication status of estuaries. The eutrophication status of any waterbody is dependent on a multitude of factors. While nutrients play a role in estuarine eutrophication, other factors can also influence their susceptibility to eutrophication. Water temperature and the physical properties of estuaries also strongly influence susceptibility to algal blooms (shape, size, volume, tidal range) and the rate of freshwater inflows can have an impact as nutrients can be diluted or dispersed, reducing their concentration. The other factors that influence eutrophication should therefore be considered.

To summarise the IFA, suggest that a longer time period is required to capture water quality trends that are statistically verified and that the status of estuaries, in particular the eutrophication status of estuaries, is removed from the assessment as improvements in eutrophication are dependent on a much greater range of factors than stocking rate alone.

Alternative farm measures

The following are alternative measures that could be undertaken as an alternative to reducing organic N stocking rate from 250kg to 220kg/ha. **These are suggested only on the basis that Ireland retains its current organic N level of 250kg N/ha.**

Combined Organic & Inorganic N Measure
Table 12 of SI 113/2022 outlines the maximum nitrogen fertiliser allowances on farm categorised by stocking rate. SI 393/2022 also outlines the conditions upon which a farmer can avail of a nitrates derogation as well as additional compliance measures. In particular, this outlines the increased stocking rate threshold which can be used to comply with 250kgN/ha derogation. If this threshold were to be reduced to 220kgN/ha, as per the conditions in Article 12, IFA suggest an alternative approach to limit the financial devastation of farms.

The combined allowances of nitrogen fertiliser in Table 12 and derogation stocking rate threshold of 250kgN/ha equates to a total nitrogen load from organic and inorganic sources of 475kgN/ha. If the stocking rate threshold were to be reduced to 220kgN/ha, this would equate to a total nitrogen load of 445kgN/ha.

IFA suggest that farmers are permitted to determine how they would reduce the overall nitrogen load on their farm to meet the reduced overall nitrogen load target of 445kgN/ha. For example, if a farmer wants to maintain their stocking rate at 250kg N/ha, the reduction in total nitrogen load can instead be achieved by reducing the maximum allowance for nitrogen fertiliser allowance on their holding to 195kg N/ha.

Commitment for extra nutrient storage
The Agricultural Catchments Programme (ACP) has demonstrated that 50% of nitrate loss occurs over winter months. To reflect this reality, farmers could make enhanced commitments to prevent nutrient loss over the closed period.

Currently, we understand that the technical tables that govern the level of slurry storage required by farmers during the closed period are under review. This is likely to result in the requirement for additional slurry storage on many farms. With State financial support via appropriate grant aid, the required additional slurry storage could be put in place over a phased period of time.

Review of crude protein content of concentrates
As outlined in SI 113/2022, the maximum allowance for current crude protein content of concentrates fed from 15th April to 30th September is 15%. It is suggested that this could be reduced in the short term to 14% and with appropriate scientific guidance could possibly be further reduced to 13%.

New Water European Innovation Partnership (EIP) scheme
The recently announced €60m Water EIP scheme, which will target 15,000 farmers by 2027, will help drive further improvements in water quality. The addition of this scheme, not in place at the time of the awarding of Ireland's current derogation, is a further positive measure that will be undertaken to protect water quality as an alternative to reducing organic N stocking rates.

Conclusion

The proposed review which compares just 2 years of comparative data is clearly insufficient to establish any definitive trend in water quality. IFA suggest that a longer time period is required to capture water quality trends that are statistically verified. We also recommend that the status of estuaries, in particular the eutrophication

status of estuaries, is removed from the assessment as improvements in eutrophication is dependent on a much greater range of factors than stocking rate alone.

In order to maintain the current nitrates derogation at 250kgN/ha, the alternative measures outlined above set out a clear alternative path that can permit Ireland to retain current organic N limit of 250kg N/ha while also proving Irish farmers commitment to undertake further measures to protect water quality. These alternative measures can further minimise nutrient loss to catchments, deliver improvements in water quality without the devastation that a reduction in organic N stocking rates would cause to farm livelihoods, in particular smaller family farms. Accordingly, we strongly recommend this alternative approach set out above is adopted.

Ends.