



# Ammonia Pollution in Northern Ireland

Legal and Policy Considerations

**EJN  
BRIEFING  
No.4  
November  
2020**

Ciara Brennan, Laura Neal,  
James Orr and Ekaterina Gladkova

Ammonia pollution is one of the most serious environmental challenges faced in Northern Ireland. There is a direct link between ammonia pollution and declining environmental quality, in particular the degradation of important habitats which have been designated as internationally significant. Ammonia pollution can also cause harm to human health. Responding to ammonia pollution is controversial in Northern Ireland because this form of pollution is predominantly derived from agricultural activities. This means that there is significant pressure on the farming community to reduce the amount of ammonia produced in order to achieve compliance with an extensive range of legal controls designed to limit emissions. However, rising ammonia levels amidst farming intensification in Northern Ireland have created concerns about the extent to which reduction efforts are working. While restrictions on particularly polluting agricultural activity can be expensive and challenging for farmers to implement, failure to address the growing ammonia crisis will not only lead to further environmental decline and risks to human health, but also has implications for Northern Ireland and the UK's compliance with a range of legal requirements. This paper will set out some of the central issues associated with ammonia pollution which should be considered as a matter of urgency by the Members of the Northern Ireland Assembly.

## Northern Ireland is in the midst of an ammonia pollution crisis

- 1. Ammonia (NH<sub>3</sub>) is an air pollutant which is known to have a damaging impact on biodiversity as well as human health.** It is produced primarily as a result of agricultural activities such as the housing of livestock, the storage and land spreading of manure and slurry and the application of fertiliser. Latest figures from the Department of Agriculture, Environment and Rural Development (DAERA) indicate that 96% of ammonia pollution in Northern Ireland is derived from agriculture.<sup>1</sup> Ammonia can cause nitrogen deposition both close to, and many miles away from the pollution source. Excessive nitrogen deposition can have serious consequences for the health of the natural environment and biodiversity through loss of plant species and changes in ecosystem structure and function. Ammonia also contributes to the formulation of particulate matter which is hazardous to human health.
- 2. Ammonia pollution is a problem which is not unique to Northern Ireland, however Northern Ireland's ammonia levels are high compared to neighbouring jurisdictions and have increased over time.** DAERA reports that 'Northern Ireland is responsible for 12% of UK ammonia emissions, despite only having 3% of UK population and 6% of the land area'.<sup>2</sup> This is disproportionate when compared to Northern Ireland's population which sits at 3% of the UK's total and land area which sits at 6% of the total UK.<sup>3</sup> The per capita average Ammonia Emissions for NI is over four times that of other parts of the UK.<sup>4</sup> DAERA's Environmental Statistics Report 2020 also revealed that Ammonia emissions increased by 20% (5.3 Kt) from 2010 to 2018.<sup>5</sup> The Republic of Ireland also has ammonia levels which are above reduction targets.<sup>6</sup>
- 3. Most of Northern Ireland, including designated sites and other priority habitats are now receiving levels of nitrogen which are significantly above their 'critical load', the concentration at which significant and irreparable ecological damage occurs.** NIEL reported in 2019 that 90% of NI's protected habitats, 98% of Special Areas of Conservation and 83% of Special Protection Areas are now exceeding critical loads of nitrogen deposition.<sup>7</sup> It should be noted that only the most significant and important areas are granted these designations. In addition, the latest data released by DAERA indicates significantly deteriorating water quality standards, with 95% of lakes now failing Water Framework Directive quality standards and nitrate levels in both river and marine bodies increasing in the last 5 years.<sup>8</sup> In addition to impacting fish and other aquatic species, eutrophication and deteriorating water quality will ultimately require significantly more purification processes in order for water to be rendered safe for human consumption.
- 4. The increase in ammonia levels in recent years has been widely attributed to farming intensification in Northern Ireland.**<sup>9</sup> In 2013, the NI Agri-food Strategy Board's 2013 'Going for Growth' action plan set a target of dramatically increasing the number of livestock in NI.<sup>10</sup> This approach was adopted (and approved by the NI Executive) despite the fact that NI was already exceeding safe ammonia thresholds, raising serious questions over whether the full environmental implications of the plan were properly assessed at the time of its development.
- 5. There have been efforts by DAERA and farmers to reduce the amount of ammonia pollution which is created by farming.** Reports such as 'Making Ammonia Visible' and guidance produced by the UFU contain proposals which support the DAERA Sustainable Agricultural Land Management Strategy.<sup>11</sup> In May 2019, DAERA published the 'Code of Good Agricultural Practice for Reducing Ammonia Emissions', which contains a guide to voluntary best practice measures. DAERA have also identified Ammonia pollution as a key departmental priority,<sup>12</sup> and in September 2020, DAERA organised three online seminars which considered the science behind ammonia and were designed to help inform future policy.<sup>13</sup> DAERA has a draft ammonia strategy which is due for public consultation.<sup>14</sup> All of these efforts must achieve a difficult balance between imposing significant burdens on the agricultural industry while simultaneously avoiding the collapse of the natural environment and the serious economic and legal implications of failure to address the ammonia crisis.

# Legal and Policy Considerations

- 6. Despite efforts to reduce ammonia pollution, Northern Ireland's failure to address a worsening crisis raises considerable concerns about whether it can meet overarching national and international pollution targets.**
  - International obligations include the UN Gothenburg Protocol (the UK is a signatory) and the UN Convention on Long-range Transboundary Air Pollution, which set an ammonia reduction target of 8% for the UK by 2020 and 16% by 2030 compared to 2005 levels. NI is not on course to meet these targets and is pulling the UK as a whole into non-compliance.
  - EU targets under a range of environmental Directives (e.g. National Emissions Ceiling Directive (NECD) (2016/2284/EU)) have also not been met, the extent to which these targets will continue to apply in NI post-Brexit remains uncertain.
  
- 7. Northern Ireland's continued problems with ammonia emissions means a raft of important legal obligations are not being complied with, leaving Northern Ireland's government departments and in some cases the UK as a whole open to potential legal challenge:**
  - There is a general legal duty imposed on all public authorities under the Environment Order (NI) 2002 (as amended) to protect and enhance designated sites and priority habitats. Granting planning permission for activities which are known to be highly damaging to these habitats in the face of a worsening crisis is arguably incompatible with this duty.
  - Ammonia contributes to the formulation of particulate matter in air which is harmful to human health. There is a plethora of legislative measures required under both EU and domestic law to monitor and address air quality, these place a range of duties on NI Government departments to ensure compliance with standards specified in legislation e.g. the Air Quality Standards (NI) Regulations 2010. NI's current levels of ammonia pollution indicate that these duties are not being fulfilled.
  - The EU Habitats Directive 1992/42, art.3 requires every public body to consider the implications of proposals on European designated sites and the cumulative, or in combination, impact on the sites with other plans and projects. This obligation is implemented into Northern Irish law through reg.43 of the Conservation (Habitats etc) (NI) Regulations 1995 (as amended). There are questions over whether the majority of intensive farming and AD plant planning approvals were adequately assessed via a full Habitats Assessment and an Ammonia Assessment. CJEU case law (e.g. Waddenzee (C127/02)) confirms a precautionary approach must be adopted in the determination of whether to undertake an appropriate assessment.
  - Environmental Impact Assessments are inevitably flawed because cumulative assessments are rarely carried out, creating a baseline where scientific reliability cannot be achieved.
  - The Wildlife and Natural Environment Act (Northern Ireland) 2011, art.31 makes it an offence to permit the carrying out of an operation which damages any of the flora, fauna or geological or physiographical features by reason of which an ASSI is of special interest. If specific ASSIs (e.g. Ballynahone Bog ASSI and SAC) have been significantly damaged as a result of ammonia pollution this could also create liability for decision makers and further open the possibility of action under the Environmental Liability Regulations 2009 on operators of ammonia emitting developments.
  
- 8. When viewed in combination with flaws in the implementation of existing frameworks, a range of other measures introduced in recent months means any continued agricultural intensification in Northern Ireland (specifically the granting of planning permission for expansion of existing activities and new large-scale farms) is extremely problematic.**
  - DAERA has been successful in obtaining successive Derogations from the Nitrates Directive to permit Nitrogen applications above the EU threshold of 170kg N/ha/year to 250kg N/ha/year.<sup>15</sup>
  - DAERA has also proposed removing the requirement to comply with Biodiversity ('Greening') Measures from farm payments.<sup>16</sup>
  - In addition, DAERA Minister Edwin Poots MLA has proposed relaxation of Ammonia Critical Thresholds on lands within 7km of SACs<sup>17</sup> in order to ease a growing farm planning backlog.
  - Some important environmental laws do not apply to farming activities which are the primary sources of ammonia pollution. The Pollution Prevention and Control (Industrial Emissions) Regulations (NI) 2013 require intensive pig and poultry farms over specified thresholds to apply for a permit (poultry: 40,000 bird places; pigs: 750 sows or 2,000 production pigs over 30kgs). The majority of pig and poultry units in Northern Ireland operate below the thresholds and are therefore not subject to an Ammonia Assessment. Cattle farms do not currently require a permit even though they are responsible for 70% of ammonia emissions in Northern Ireland. The Northern Ireland Environment Agency (NIEA) has an obligation however to carry out cumulative assessments, however questions remain as to how well the assessment system is functioning given the various caveats and non-applicability in certain circumstances as described above.
  - The evidence of diffuse nitrates pollution is now irrefutable, and it is clear that successive Nitrates Action Programme Regulations have been ineffective in preventing further deterioration in water quality. The new Nutrients Action Programme (NI) 2019-22 introduces some new initiatives however, broiler chicken and pig farmers are exempted from completing fertiliser plans for their farms, limiting the extent to which this type of farm's ammonia emissions are monitored.<sup>18</sup>

*Continued overleaf*



# Preventing an ecological and public health disaster

- The Waste and Contaminated Land (NI) Order 1997 (as amended) requires Anaerobic Digestion (AD) plants to apply for a Waste Management Licence. However, there are some concerns about the impact that waste management licence exemptions have with regard to ammonia assessments. This is a potentially significant issue going forward as massive financial incentives for AD plants have led to exponential growth in this particular (and controversial) type of energy generation in recent years.<sup>19</sup>

The cumulative impact of these measures in a context where ammonia pollution is already at critical levels is potentially catastrophic. This cumulative policy impact can be hard to see unless viewed within a wider context because of the complexity of the regulatory framework.

- 9. Northern Ireland does not compare favourably with neighbouring jurisdictions in terms of its history of controlling ammonia or its current efforts to reduce ammonia pollution.** Northern Ireland can be distinguished within this wider landscape because of its problematically high existing levels of pollution, as discussed above. The current legislative frameworks relating to planning and environmental law create multiple layers of obligations on both public bodies and the agricultural industry which are designed to limit ammonia pollution. These have, to date been unsuccessful.
- 10. There are also significant transboundary legal issues associated with cross border ammonia pollution.** This has been explicitly acknowledged, notably by Northern Ireland's Causeway Coast & Glens Council which informed the Republic of Ireland's Department of the Environment, Communities and Local Government and Donegal County Council in 2018 that there is 'likely to be a significant effect on the environment in the Republic of Ireland as a result of [a] proposed intensive pig farm development'. This acknowledgement came as a result of a complaint by Friends of the Irish Environment under the UNECE Espoo Convention which requires countries to alert and consult with neighbouring countries on developments which may have cross border impacts. Both Ireland and the United Kingdom are parties to the Espoo Convention. In addition, An Taisce also made a complaint to DAERA in July 2020 surrounding Northern Ireland's ammonia emissions at cross border sites.
- 11. Brexit adds a new layer of concerns to an already critical situation in relation to ammonia pollution in Northern Ireland.** A 2018 risk analysis into how different Brexit outcomes will impact the environment in the UK identified 'nitrates' and 'agri-environment' as two policy areas which in almost all scenarios (but in particular 'no deal') should be considered as entailing 'very high risks' to current levels of environmental protection.<sup>20</sup> The same analysis also points to concerns about the UK government preparing to set aside some UK aspects of the Nitrates Directive and the absence of water as a policy area in need of a UK wide common framework. The authors note that 'this would open the way for differentiated zombification, or roll-back of key standards (such as regulation of diffuse pollution from agriculture)'.<sup>21</sup> While the UK government's 25 year Environment plan does commit to reviewing the way in which farmers use fertilisers with a view to reducing ammonia emissions, this plan only applies to England.<sup>22</sup>
- 12. Efforts to reduce ammonia pollution are ongoing.** In 2019, the UK government produced its first comprehensive Clean Air Strategy. Although the strategy focuses on actions which will be taken in England, it highlights the 'shared goal' of protecting natural heritage across the UK. NI has yet to produce its own Clean Air Strategy. The UK strategy makes a number of important commitments relating to ammonia pollution reduction measures, notably the extension of environmental permitting and regulation of ammonia emissions to dairy and intensive beef farms by 2025.<sup>23</sup> It is unclear to what extent these commitments will be replicated in NI, however DAERA are also working on an Ammonia Strategy and a significant amount of research has been undertaken in relation to measures which can reduce ammonia pollution from farms. In addition, a NIEL workshop undertaken in April 2019 produced a number of recommendations which should be considered by policymakers.<sup>24</sup> However, action is not happening quickly enough to either halt the escalation of ammonia pollution, the degradation of the natural environment or the potential legal liabilities which may emerge. In addition, planning permission is being granted to activities (both new and extensions to existing facilities) which will make the problem and worse and the challenge of bringing Northern Ireland into compliance even harder.
- 13. Positive developments must be placed within a wider context of a critical threshold already being crossed, and the urgency of action on this cannot be under-estimated. Action must now be taken to address the very clear evidence that environmental damage has occurred and that there is a very real risk to public health.** In addition to the steps being taken by DAERA, the UFU and the farming community to reduce ammonia pollution, a number of actions are now required to prevent further serious environmental degradation, harm to human health and to limit the extent of Northern Ireland's non-compliance with a whole host of environmental laws.

# Recommendations

**14. DFI, DAERA and local councils should consider the introduction of an immediate moratorium on the granting of planning permission to new intensive farms or extensions to existing facilities which would result in an increase in ammonia pollution until such times as the ammonia crisis is under control (i.e. at a minimum when pollution levels in NI have reached the UK's required trajectory towards a 16% reduction on 2015 levels).** Specifically, DFI must exercise its scrutiny function on local authorities to comprehensively assess compliance with environmental laws with regards to ammonia producing applications. This would reflect a precautionary approach and halt the increase in ammonia levels. It would also allow the reduction measures that have been developed and are being developed by DAERA in conjunction with agricultural stakeholders to be implemented and their impact on the current ammonia problem to be more accurately assessed without the interference of new potential sources of ammonia pollution. In addition, ammonia reduction scenarios should also consider whether a reduction in livestock numbers would be a more effective means of achieving 'sustainable production' where there are no excess emissions. This is particularly important when sustainable manure management scenarios are considered in light of the potential difficulties associated with the exportation of manure (e.g. biosecurity) post-Brexit.<sup>25</sup>

**15. DAERA should as a priority initiate a Strategic Environmental Assessment to comply with the Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 of the 'Going for Growth Strategy' and the proposed 'Green Growth Strategy' to assess, inter alia, health, economic, and environmental impacts, and the reasonable consideration of alternatives.** The failure to carry out a SEA on *Going for Growth* at the time of its adoption was not just arguably unlawful but set in train a series of events that has led to chronic pollution with several multi-agency failings. In addition, an overall, detailed scientific assessment of where air and land pollutants are spread (both in Northern Ireland and export locations) is an urgent necessity to evaluate the carrying capacity of ecosystems and specific landholdings.

**16. An independent evaluation of how environmental assessments, public participation exercises and avenues through which citizens can access to environmental justice operate in Northern Ireland should be undertaken.** There are deep-seated concerns in the environment sector about assessments not being undertaken when they should have been and whether findings of assessments or public consultations are ignored or 'set aside' when balanced against economic considerations. The ability of citizens to object to the granting of planning permission should be enhanced via the introduction of third/equal party rights of appeal. The third-party right of appeal is crucial for ensuring equality in the process of environmental decision-making and even more crucial for ensuring environmental justice. Enforcement of the third-party right of appeal should be accompanied with more diligent compliance with the UNECE Aarhus Convention in general, including its pillars of access to information and mechanisms for meaningful participation in decisions affecting one's environment.

**17. Significant investment should be made to help the farming community develop approaches which reduce ammonia pollution and create a more sustainable approach to food production, and the value of the agricultural industry to the NI economy should be recognised. However, this recognition should not privilege the sector in any way when it comes to being held to account for breaches of environmental law.** The Memorandum of Understanding (MOU) between DEARA and the UFU undermines the ability of the NIEA to take robust enforcement action and thus undermines the rule of law itself as well as the policy targets and pollution reduction strategies which these laws are designed to implement. While rescinding the MOU is one option, a more effective approach would be for structural reform which removes the conflict of interest inherent in DAERA by re-dividing the agriculture and environment remits and removing the regulatory function to a position at arm's length from central government.

**18. Executive Ministers should take steps to deliver on the New Decade, New Approach agreement to deliver an independent environmental protection agency. The ammonia crisis is a stark example of why this structural reform is required.** The same department cannot promote a strategy like *Going for Growth* which actively encourages the expansion of an industry which is the source of pollution the same department is supposed to be regulating. The UK's post-Brexit environmental governance plans (e.g. extension of the proposed Office of Environmental Protection to NI) do not remove the need for an environmental regulator which operates outside of central government in NI and which is free to undertake regulation without serious conflicts of interest. The NI Executive and Office of First and Deputy First Ministers should reconsider the current structural arrangements which place responsibility for supporting agriculture and regulating the environment under the same Ministerial portfolio. These two core governance functions should be separated to avoid obvious conflicts of interest.

**19. Ammonia pollution is an environmental challenge for the whole island of Ireland, which is a single biogeographic unit.** Both Northern Ireland the Republic of Ireland are failing to meet international ammonia reduction targets. The issue is complicated by cross-border movement of manure, transboundary ammonia pollution and nitrogen deposition occurring many miles from the sources of emissions. Given this shared challenge and the provision for cross-border cooperation on the environment set out in the Good Friday/Belfast Agreement, consideration should be given as to whether the issue of Ammonia (and air/water pollution more generally) should be dealt with collaboratively on an all-island basis.<sup>26</sup>

# References

- <sup>1</sup> DAERA Ammonia Science Webinar 1, available [here](#).
- <sup>2</sup> DAERA has a dedicated ammonia web page, available [here](#).
- <sup>3</sup> DAERA, 'Code of Good Agricultural Practice for Reducing Ammonia Emissions' (2019), available [here](#).
- <sup>4</sup> Agrisearch NI, Evaluation of ammonia and greenhouse gas emissions from the livestock production sector in Northern Ireland (DBS-90-17), available [here](#).
- <sup>5</sup> DAERA, Northern Ireland Environmental Statistics Report 2020, available [here](#).
- <sup>6</sup> Environmental Protection Agency, Ireland's ammonia emissions continue to rise and exceed EU limit, available [here](#).
- <sup>7</sup> Northern Ireland Environment Link, 'Ammonia Impacts Workshop: Proceedings and Recommendations' (2019), available [here](#).
- <sup>8</sup> DAERA, 'Northern Ireland Water Framework Directive Lake Quality Update 2020', available [here](#) and DAERA, Northern Ireland Environmental Statistics Report 2020, available [here](#).
- <sup>9</sup> Gladkova, E. Farming Intensification and Environmental Justice in Northern Ireland. *Crit Crim* 28, 445–461 (2020), available [here](#).
- <sup>10</sup> Gladkova, E. Farming Intensification and Environmental Justice in Northern Ireland. *Crit Crim* 28, 445–461 (2020), available [here](#).
- <sup>11</sup> Report and strategy available [here](#).
- <sup>12</sup> DAERA, note 2.
- <sup>13</sup> DAERA, note 2.
- <sup>14</sup> DAERA, note 2.
- <sup>15</sup> Details on Nutrient Action programme derogation are available [here](#).
- <sup>16</sup> DAERA, 'Minister announces removal of Greening requirements with effect from 1 January 2021', available [here](#).
- <sup>17</sup> Conor Macauley, 'Ammonia: Move by Edwin Poots eases farm planning backlog' BBC, 5<sup>th</sup> August 2020, available [here](#).
- <sup>18</sup> Details of the requirements are available [here](#).
- <sup>19</sup> Currently the subject of an Northern Ireland Audit Office investigation, details available [here](#).
- <sup>20</sup> Burns, C., Gravey, V., and Jordan, A., 2018. UK Environmental Policy Post-Brexit: A Risk Analysis, a report for Friends of the Earth, Brexit and Environment, March 2018.
- <sup>21</sup> Burns, C., Gravey, V., and Jordan, A., 2018. UK Environmental Policy Post-Brexit: A Risk Analysis, a report for Friends of the Earth, Brexit and Environment, March 2018.
- <sup>22</sup> DEFRA, 'A Green Future: Our 25 Year Plan to Improve the Environment' (2018), available [here](#).
- <sup>23</sup> DEFRA, 'Clean Air Strategy' (2019), available [here](#), p72.
- <sup>24</sup> Northern Ireland Environment Link, 'Ammonia Impacts Workshop: Proceedings and Recommendations' (2019), available [here](#).
- <sup>25</sup> AFBI, RePhoKUs Report (2020), available [here](#).
- <sup>26</sup> Alison Hough, The potential of the Good Friday Agreement post-Brexit environmental governance on the island of Ireland (2019) *Irish Planning and Env. Law* (2) 55-65; Brennan, C., Purdy, R., and Hjerp, P. (2017). Political, economic and environmental crisis in Northern Ireland: the true cost of environmental governance failures and opportunities for reform. *Northern Ireland Legal Quarterly*, 68(2), 123-157, available [here](#).

## Environmental Justice Network Ireland

The Environmental Justice Network Ireland was established in June 2019. EJNI is an all-island network which seeks to build collaboration between groups and individuals involved in the delivery or pursuit of environmental justice. Its goal is to connect academics, lawyers, NGOs, decisionmakers and community activists and in doing so help equip people with the knowledge and tools they need to enhance the quality of environmental justice on the island of Ireland.

**Please cite this document as:** Ciara Brennan, Laura Neal, James Orr and Ekaterina Gladkova, 'Ammonia Pollution in Northern Ireland: Legal and Policy Considerations' (2020) EJNI Briefing Paper Series, No.4

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