



DRAFT AMMONIA STRATEGY CONSULTATION

ULSTER FARMERS' UNION RESPONSE

MARCH 2023

1. INTRODUCTION

Thank you for the opportunity to respond to the above consultation. The Ulster Farmers' Union (UFU) is the largest farming organisation in Northern Ireland with over 12,000 members. The UFU membership encompasses farmers from all sectors across all of NI and from all farm sizes reflecting the diverse nature of the NI agricultural sector.

The UFU has undertaken consultation within the Union structures and the UFU position on the draft Ammonia Strategy is detailed below.

The UFU accepts there is a need to deal with ammonia emissions in Northern Ireland and welcomes engagement on the draft Ammonia Strategy. However, many aspects are unacceptable in their current form and will present significant difficulties for many farmers.

We welcome the extensive research programme that has been commissioned by DAERA to improve the accuracy of emissions factors for ammonia, knowledge around mitigation measures and the monitoring of emissions. This will help the industry to make informed decisions and we urge the Department to continue to support this work.

The 'Making it Visible' report made it clear that the industry needs to have confidence in the data being used to assess ammonia emissions and the baselines used. While we welcome the improvements that have been made to improve the accuracy in recent years, it is clear that more needs to be done.

We trust that you will fully consider the UFU response to this consultation and would be willing to discuss with DAERA and NIEA if required.

2. CONSULTATION PROCESS

UFU have already highlighted concerns about the limited notice that was given for the initial information events on the draft ammonia strategy. The UFU were not told about the first three

meetings and so were unaware until late in the day that they were taking place. UFU members have also complained that text messages about these events were sent out at short notice, leaving them with little opportunity to attend. The UFU accept that DAERA attempted to address these initial failings by holding two additional meetings which were well attended by farmers. DAERA should note the feedback received at these meetings.

At the DAERA event at Loughry College, an official outlined that there would be a further period of consultation on a 'final' Strategy. This seems unusual and may impact the timelines indicated within the Consultation document. The UFU would like clarification on the process.

There are several concerns about the consultation document. DAERA should note that some of the reference links within the consultation document are not 'live' (references 2,4,6,9,11,13,33). There are also inaccuracies; page 52 indicates that new lagoons are required to be covered. This is not the case and this incorrect information could confuse farmers given that it conflicts with the Nutrients Action Programme Guidance Booklet. The RIA refers to 'mandatory housing standards' and 'cattle permitting' yet neither are referred to in the draft Strategy document.

DAERA refer to the current 'Programme for Government' in this document, yet this was never finalised and agreed during the last NI Assembly.

Section 1.9 references a paper which uses data from 1995/96 and refers to concentrations of ammonia from a poultry farm. Since the late 1990s there have been considerable changes to poultry diets, genetics and housing all of which will have lowered ammonia emissions. Therefore, it is misleading to quote this research without noting the progress that has been made within the poultry sector. There are references under Figure 8b which state that the ammonia concentrations of 40 $\mu\text{g}/\text{m}^3$ are '40 times the critical level for mosses and bryophytes'. The figure of 40 $\mu\text{g}/\text{m}^3$ was a monthly peak detected during the research whereas critical levels for species are recorded as annual figures therefore, this is again misleading for stakeholders reading this document. The inconsistent language used for protected habitats is causing confusion amongst farmers.

Throughout the Strategy there are references to Special Areas of Conservation, Nitrogen Sensitive Sites, sensitive habitats, designated sites, internationally designated sites and Natura 2000 sites. These terms are used frequently and interchangeably throughout the document and given that there are differences between what each of these terms could relate to, it is unclear as to the exact habitat areas the Strategy is referring to. This is key issue as the lack of clarity could result in a lack of understanding of the required policy measures and their implications by key stakeholders.

The ammonia issue is particularly challenging and with livelihoods at stake, there is concern at the inability of DAERA and NIEA to deliver an effective consultation on this subject. All of the above plus additional flaws outlined later in this response has resulted in UFU members proposing a vote of no confidence in the process and in the ability of DAERA and NIEA to draft and deliver a complex Ammonia Strategy.

3. CONSULTATION QUESTIONS

Chapter 3.1 Question 1. What are your views on the Northern Ireland 2030 targets outlined in the 3.1 Targets section?

The UFU is in support of the setting of targets but believes that there will be difficulties in achieving those outlined in strategy. It is vital that targets selected are practical, fair and realistic but those outlined within the draft Strategy are unrealistic and unachievable.

While it is understandable that NI is required to contribute to the National Emissions Ceiling Regulations (2018) and commitments under the Gothenburg Protocol based on 2005 levels, it is unclear as to how DAERA arrived at the 30% from 2020 levels and the 40% figure for designated sites. The UFU would like to see further analysis on how these targets were arrived at and the reason for choosing 2020 as a base year. In determining Climate Change targets for NI, the CCC took account of the importance of the agriculture sector to NI and the fact it feeds 10 million people it is vital that a similar approach is taken with ammonia.

In addition to environmental targets, in the interests of balance, there should also be a target to maintain sustainable agricultural production at current levels as a result of this strategy.

The UFU believes that to deliver an Ammonia Strategy, partnership working is essential. A whole industry solution is needed with agri-food processors, feed companies, geneticists, researchers, veterinarians, advisers etc all assisting farmers to deliver ammonia reductions.

Chapter 3.2 Question 2. What are your views on the proposed pillars of the ammonia strategy?

The UFU support the two-pillar approach in principle but, have significant concerns around the detail presented later in the strategy. The UFU totally oppose the spatially targeted approach and believes that this is divisive and damaging to NI farmers. Further detail on the UFU position on this will be outlined below.

Chapter 3.2 Question 3. What are your views on how DAERA will enable this strategy?

The UFU are supportive of the approach outlined however DAERA need to identify and commit a budget to the delivery of this strategy. This is vital to deliver meaningful ammonia reductions.

When DAERA previously introduced new policy, there was as an indication on how this was to be supported. A good example was the introduction of the EU Nitrates Directive in NI which was very challenging for farmers however alongside the consultation on the Nitrates Action Programme (NAP), DAERA developed the Farm Nutrient Management Scheme (FNMS) which delivered 60% capital grant to farmers to help meet the new requirements. Similarly, the Farm Business Investment Scheme was highlighted as a key mechanism to deliver the switch to Low Emission Slurry Spreading Equipment (LESSE) during the last NAP Review.

There are no firm commitments on schemes or budget to go alongside this strategy which is totally unacceptable. Instead, farmers have simply been warned by officials that if the changes are introduced into legislation they cannot be funded by DAERA. This is not helpful and while recognizing the limitations within DAERA due to having no Minister in post, it is vital that DAERA plan and propose in detail how they are going to assist the industry in reducing emissions in tandem with Strategy

Development and co-ordinate the timelines to ensure maximum support is delivered to the industry in order to meet the proposed targets.

The strategy is also set for 5-year cycles. There are multiple strategies / regulations already in place with review cycles, few of which are synchronized. For example, the Nutrients Action Programme is reviewed every 4 years, the Climate Action Plans every 5 years and Water Framework River Basin Management Plans every 6 years all starting in different years. Each of these will have linkages to this ammonia policy. This is causing confusion and results in a lack of joined up policy agenda and there is a need for a more coherent approach to be adopted.

Chapter 4.1.1 Question 4. Do you have any comments on the proposals for low emission livestock housing?

The Ulster Farmers' Union accepts that technology has an important role to play in delivering reductions in ammonia emissions in NI.

While the UFU recognises there are many technologies and techniques that could be adopted, these will range in acceptability and affordability and the practicalities of adopting such technologies will vary between farms and sectors.

It is vital that DAERA properly evaluate what current technology is being used on farms and update the ammonia inventory accordingly. The creation of an accurate baseline is vital. DAERA appear to rely on the Farm Business Investment Scheme (FBIS) data in relation to uptake however there are large numbers of farmers who have adopted technologies to deliver animal health, welfare and productivity improvements that will not be recognized by DAERA and will contribute to ammonia reductions e.g. slat mats and scraper systems are common and the widespread use of these must be measured and included in the ammonia inventory.

It is also concerning that there is not an appropriate emissions factor for slatted housing. Slatted housing dominates NI livestock systems and it is recognised by Teagasc that slatted floors are estimated to reduce ammonia emissions by 36% compared to solid floors yet this is not currently recognised in the agricultural inventory for NI¹. This hasn't been noted in the draft Ammonia Strategy Consultation despite being highlighted as a key issue and significant knowledge gap in the 'Making Ammonia Visible' report.

Retrofitting buildings is likely to be challenging. While there are some technologies that can be fitted to existing accommodation this may not always be practical. It may be more beneficial and cheaper to build new modern facilities with appropriate ammonia measures put in place.

Where new buildings are required to adopt new technologies, planning rules may restrict or prevent development and therefore the subsequent ammonia reductions. This is a perverse outcome with Government planning rules preventing the changes that are required to deliver environmental outcomes. This must be addressed within the revised NIEA Operational Protocol. Betterment must be recognized as vital to allow the industry to adapt and improve to deliver further reductions.

¹ <https://www.teagasc.ie/media/website/publications/2009/Ammonia-emissions-5508.pdf>

Many of the technologies that deliver ammonia reductions have very significant costs. The costs of installation and the running costs could make the project/ business unviable even with Government support.

There are concerns that there are useful technologies available, but these are often not accepted by NIEA. NIEA are stifling and preventing innovation with risk averse attitude requiring detailed science to be carried out in the UK and not accepting research from other countries. It takes too long for decisions to be made on suitable technologies.

Farmers have highlighted practical issues with some of the suggested technologies and have indicated that there may be health and safety issues with some measures e.g. farmers have questioned the potential for the build up of slurry gases where slats are fitted with flaps.

Most measures will not provide financial or production benefits to farmer therefore are not economic to introduce. Furthermore, it is uncertain as to whether some of the technologies will be credited within the ammonia inventory and in planning applications and this is crucial.

The UFU would also highlight that despite the Netherlands being quoted by DAERA, the Dutch position of investing in expensive technology is not easily transferable to NI due to different farm and debt structure.

Chapter 4.1.2 Question 5. Do you have any comments on the proposals for emerging technologies?

Emerging technologies will be vital to help tackle ammonia emissions from farms. The UFU support the further investigation of new technology and welcome the horizon scanning study commissioned by DAERA. We recognize that there are opportunities however we would reiterate that there is the potential for unintended consequences. For example, acidification offers significant reductions in ammonia emissions however the wider impact on soil fertility and health is crucial and further information is needed.

Other slurry additives also need further consideration. These have the potential to be a cost effective mechanism to deliver ammonia reductions. Further work on these must be developed. Slurry bags should also be considered.

In addition to DAERA verifying the environmental benefits and potential unintended consequences, it is vital that the economics and practicalities of adopting such technologies on commercial farms are also examined.

DAERA / NIEA must move away from a risk averse attitude and allow farmers to trial more new and innovative technology. NIEA are currently stifling innovation with their failure to recognize the potential ammonia reductions certain technologies can deliver in a timely manner.

Bureaucracy is a major issue and a more streamline process is required for the innovation process to work. It is also essential for scientists to collaborate, with a real need to get all players from the agriculture sector involved with science and innovation submissions.

The UFU believe DAERA have been lacking on driving forward innovation in the past. DAERA also have been slow to draw down any available UK wide funding and this needs to change radically. The UFU

believe that DAERA should maximise funds and deliver to the private sector to enable them to innovate. Better engagement is needed within NI to facilitate this process. Support will be needed to develop and trial new technologies on commercial farms. The industry should work in partnership with Government and researchers to progress the adoption of innovative technologies.

Chapter 4.1.3 Question 6. Do you have any comments on the proposed additional progression point in the move towards LESSE adoption requiring slurry which is being exported between farms to be spread by LESSE from 1st January 2025?

The UFU are opposed to this proposal. A key objective of water policy has been to allow the redistribution of nutrients from farms with excess to those that would benefit from organic manures. This tends to replace some chemical fertiliser and in general will see nutrients in additional organic manures move from more intensive to less intensive farms or to non-livestock farms. The increasing amount of paperwork that is now required for movements of organic manures has resulted in some farmers moving away from importing organic manures due to concerns around inspections. The proposal to force the use of LESSE on these farms to earlier by 2025 has the potential to further hinder the movement of manures. If slurry is currently being moved by contractors it will already be spread with LESSE however the majority of smaller farmers currently importing slurry will not be in a position to purchase or use LESSE as outlined in question 7.

It will be almost impossible for DAERA / NIEA to enforce this measure in 2025 without following slurry tankers and being in a position to prove while spreading is taking place that the slurry spread has come from a different farm business.

Chapter 4.1.3 Question 7. What are your views on the proposal to require all slurry to be spread by LESSE by 2026?

The UFU is opposed to the mandatory use of LESSE for all farms. The timeline proposed is not feasible, there would be a significant cost to farms should this be imposed in NI and is totally unacceptable.

Farmers have been moving towards LESSE over the last number of years and it is positive that a survey of slurry spreading practices in NI by AFBI in 2020 reported that an estimated 39% of slurry was spread by LESSE improving nutrient efficiencies. These changes have been driven by the various funding schemes that have assisted farmers in purchasing the LESSE.

The majority of farms in Northern Ireland own their own slurry tanker, which offers them the flexibility to spread slurry when conditions are most suitable minimising environmental risk and maximising nutrient efficiency. While there has been an increase in the number of dribble bar or trailing shoe tankers on farms, these are costly and the majority of farmers are not in a position to purchase new LESSE. In addition, many farms would not have a tractor large enough to operate LESSE. Even if the current level FBIS support for low emission spreading was rolled out again it will be still unviable for most smaller farm businesses in Northern Ireland.

CAFRE highlighted during the implementation of the METS scheme that the use of LESSE results in a 25% increase in contractor spreading costs and a 10% reduction in work-rate. While there is potential for savings in terms of chemical N fertiliser it was estimated by CAFRE at that time that the farm scale to justify LESSE was around 300 dairy cows (without grant aid)

Many small dairy and beef farms run a profitable business as they can carry out their own slurry spreading using their own equipment at the most suitable times. Imposing additional costs plus the likelihood that contractors are unlikely to prioritise smaller farms could threaten the viability and future of these smaller businesses. There will also be a reduction in nutrient efficiency as the ability to choose the most suitable times for spreading will be removed.

Despite the benefits of LESSE, there are also many practical concerns with the usage of LESSE. This equipment is more expensive to purchase and to use than splashplate tankers. The reliability of LESSE is questionable and is dependent on slurry composition and quality. At times farmers and contractors report that it has been difficult to obtain replacement parts resulting in long periods of downtime for LESSE again reducing the reliability of this equipment.

It should also be highlighted that splashplates will remain the most economically method of spreading dirty water therefore it is not practical or realistic to completely ban the use of the splashplate tanker. Splashplates will be necessary on most farms for some spreading at certain times of the year and for emptying the last few loads of a tank which is thicker in consistency etc.

Farmers have found that spreading with LESSE in dry and warmer months of the year results in the slurry staying in the lines in which it was spread and contaminating silage crops. This is an animal health and welfare concern and a reason why many farmers do not use LESSE between silage cuts. Vets are reporting an increase in mycotoxins in some larger dairy herds with many attributing this to the use of LESSE. This is further exacerbated when farmers are relying on contractors as farmers are dependent on the contractor's schedule rather than spreading at the most appropriate times. CAFRE have highlighted silage contamination in an article published online² stating 'with high applications followed by dry weather, the fibre from the applied slurry can lift up into the crop'. Others advise farmers to consider tedder/rake ground clearance following application and/or using products such as a mycotoxin binder to reduce health impacts. Both of these options will add additional cost which is unlikely to have been considered in economic assessments of LESSE carried out to date. This is a major concern and further investigations into the animal health implications of LESSE equipment must be examined. Farmers believe that DAERA have been dismissive of this issue to date and urge the Department to liaise with Private Veterinarians on this aspect.

The LESSE are heavier machines and soil compaction is a real concern and, while umbilical systems are preferable these may not be practical to use in some locations. Even the operation of umbilical systems with heavier tractors can cause compaction issues. A contractor is unlikely to set up an umbilical system to spread on a small area of land again impacting on the smaller farmers. Larger tractors are required to haul LESSE and therefore a move away from splashplates not only requires the replacement of a tanker but also a tractor.

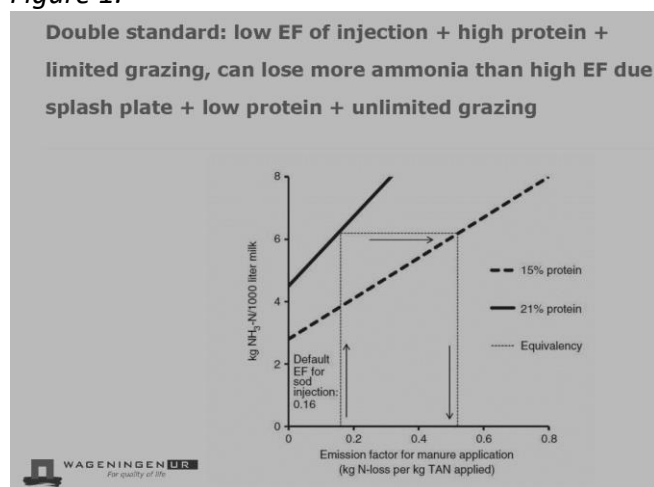
² <https://www.daera-ni.gov.uk/news/minimise-contamination-when-harvesting-silage-season>

There are locations which are unsuitable for LESSE. Many fields in NI will be unsuitable for LESSE as they are small in size or due to the slope. Access to yards could restrict the ability to use LESSE on some farms, and narrow laneways to fields may be unsuitable for the larger tankers and distance could make them unsuitable for umbilical systems. Farms split by roads again may be unable to use umbilical equipment. This has been recognised within the Nutrients Action Programme with a relevant exemption included within the Regulations.

Farmers have also highlighted the difficulty in getting contractors to do slurry spreading work at peak times e.g. silage time and therefore in order to get nutrients applied at the most appropriate time it is necessary to do this work yourself however a LESSE could not be justified. It is too simplistic to suggest the contractors would increase capacity to cope with the potential increased demand as contractors are already facing labour shortages. The seasonal nature of the work with anti-social hours often makes it difficult to attract employees. Spreading would be dictated by the contractors schedule as opposed to the optimum time for nutrients and the decisions around spreading would be taken out of the farmer's hands.

Researchers in Wageningen University as outlined in Figure 1 have indicated that splashplates used alongside low protein diets and maximum grazing can deliver equivalent emissions reductions to injection tankers and high protein and limited grazing systems. This would further support a more proportionate response to the use of LESSE on some farms which are more likely to have lower protein diets and grazing animals.

Figure 1:



Source: Jaap Schroder, Wageningen University and Research

In addition to the many practical and financial concerns listed above it should be noted that it is highly unlikely that the manufacturing sector could supply the number of tankers required should this measure be imposed along the current timelines. There are still considerable delays to those farmers who sought to purchase LESSE within the FBIS Tier 1 scheme despite manufactures being aware of the scheme opening in advance. It is totally unrealistic to expect that every farmer in NI would be able to source LESSE by 2026.

There are also concerns that in future DAREA may again move the 'goalposts' and declare the dribble bar unacceptable. Farmers switching to replace splashplate tankers with dribble bar will make a

significant financial investment and need guarantees that this type of LESSE will satisfy DAERA in future.

Any moves to drive farmers towards LESSE must be accompanied by a suitable support package. The UFU has welcomed the various funding schemes that have assisted farmers in purchasing LESSE to date and would like to see new schemes launched with a more attractive support rate and appropriate budget. It is vital that the timing of these schemes are sequenced to support farmers. If DAERA are genuine about reducing emissions, it is essential that any support for LESSE is provided in a timely manner and well in advance of legislative deadlines for LESSE use. Failure to time this appropriately will result in many farmers being unable to afford the new equipment and result in unintended consequences.

UFU members have discussed various mechanisms to encourage further use of LESSE. In Finland, farmers are paid through an environmental payment scheme³ to use LESSE with a figure of €40/hectare quoted for 2018. It has been highlighted that a similar policy to that announced by the UK Government on the move towards electric cars could be adopted for LESSE on farms or, a reduction of the current 200 LU threshold could be lowered to 150 LU with the appropriate support mechanism put in place. A scrappage scheme for some splashplate tankers could also be investigated. The current timelines are unacceptable, will not be deliverable and a more appropriate phasing process is needed. Regardless of support, moves towards LESSE will not be suitable or a proportionate policy option for the spreading of all slurry and for many smaller farmers and therefore must be rejected.

Chapter 4.1.4 Question 8. Do you have any comments on the proposals to encourage implementation of longer grazing seasons?

The UFU support this measure in principle. However, it should be noted that all farmers currently grazing animals will work to maximize grazing on farm therefore unlikely that this measure will deliver the expected reductions. Farmers strive to achieve longest grazing period as possible.

DAERA should note that if supporting grazing infrastructure, they should consider support for drainage in appropriate areas.

The UFU would highlight that for some farms within the Environmental Farming Scheme, grazing at certain times of the year is restricted and therefore farmers are forced to house livestock if no alternative winter grazing sites can be found.

In terms of verification of grazing, there is currently a proposal for the inclusion of an All-Island Grass Fed Beef PGI between DAERA and DAFM. As part of that specification, cattle must spend a minimum number of days grazing pasture with a tolerance due to mitigating circumstances, defined as weather, soil type, animal welfare considerations or other environmental conditions are impeding factors. It is the industry's intention for the Northern Ireland Beef & Lamb Scheme (NIBL FQAS) to collect data from farmers on their turn out dates and turn in dates. Farmers will be audited at a minimum once every 18 months by a trained independent auditor. This information may be useful

³ https://julkaisut.valtioneuvoisto.fi/bitstream/handle/10024/163564/MMM_2021_20.pdf?sequence=1&isAllowed=y

in the future in order to assess grazing within the beef sector provided that data sharing agreements allow. This could give confidence to officials and planners when assessing ammonia emissions and merits further discussion.

Chapter 4.1.5 Question 9. Do you have any comments on how to reduce ammonia emissions from chemical fertiliser, including the potential introduction of a prohibition on the use of unprotected urea fertiliser?

Urea use in Northern Ireland is low therefore the imposition of this proposal will have very limited benefits in terms of ammonia reduction.

However, while usage of urea in Northern Ireland is relatively low, it is important and the cheapest source of chemical nitrogen for many farmers. NI farmers are paying some of the highest fertiliser prices in Europe and only have two primary Nitrogen sources since Ammonium Nitrate (AN) is banned. The ban on AN fertiliser forces farmers towards urea as an alternative which is recognised to have higher ammonia emissions than AN. Chambers and Dempsey (2009) ⁴estimate the average emissions factor on cereal sites at 3% for AN, 24% for urea and 6% for protected urea. NI is already at a competitive disadvantage due to the lack of access to AN fertiliser.

Access to commodity urea keeps the UK fertiliser market in step with the global nitrogen fertiliser market and therefore by having access to commodity urea from the global market, there is a greater chance that the UK fertiliser prices remain competitive. The requirement to use an inhibitor puts a barrier between the global market and NI agriculture therefore will restrict competition in the marketplace and has the potential to further increase prices. Fertiliser is a significant cost on farms and any increases will increase production costs and reduce competitiveness and place NI farmers at a disadvantage to their GB and Irish counterparts. DEFRA has clearly indicated recently 'that any legislation or industry scheme that takes away the choice of use of fertiliser type (i.e. untreated solid urea) under current circumstances would present significant operational and economic difficulties for farmers.'⁵

Industry representatives in GB have questioned the impact of inhibited urea on soil health and quality. In response DEFRA has concluded 'The impact of increased use of UIs on soil quality is uncertain due to a lack of evidence. There is some evidence that UI-treated urea, as it retains integrity longer in the soil for plant uptake, can lead to increased concentrations of ureic nitrogen in connected watercourses.' DEFRA also indicates that they will investigate this in more detail before adopting a regulatory approach. DAERA must consider this point before imposing a policy that could result in further unintended consequences.

⁴ Chambers B & Dempsey P (2009): Nitrogen Efficiency and Ammonia Emissions from Urea-Based and Ammonium Nitrate Fertilisers. International Fertiliser Society Proceedings December 2009

⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1068182/Reducing_ammonia_emissions_from_solid_urea_fertilisers_government_response.pdf

The ammonia losses from urea are dependent on spreading conditions. The assumptions behind the emission factor for urea fertiliser does not consider the mitigation efforts put in place by farmers to protect urea such as spreading conditions, timing of spreading etc. The majority of urea is spread in the early part of the year when conditions are most suitable and losses will be minimal. Farmers management is key and as fertiliser is expensive farmers will ensure that the spread in conditions that minimize N losses from urea applications.

There are concerns about the research used to verify ammonia reductions from inhibited urea. The consultation reports that Urea + NBPT resulted a reduction in ammonia losses of 78.5% compared with straight urea however this may be a considerable overestimate due to the measurement system used in the research (wind tunnels) which limits vital rainfall and encourages N-loss from Urea. Forrestal et al (2016)⁵ have highlighted that “farmers can maximise suppression of NH₃ loss from urea by applying shortly before the onset of appreciable and sustained precipitation”. The majority of farmers who use urea will follow this advice to minimise losses therefore the Strategy will be overestimates the contribution of emissions from urea.

Forrestal et al (2016) also clearly highlight gaps in the knowledge that need to be addressed outlining that “This study has provided information on the abatement potential of a suite of N fertiliser options, however there is an important knowledge gap regarding absolute levels of NH₃-N loss from urea in Irish grassland which could be addressed by a campaign of micrometeorological measurements. Such knowledge is of critical importance in the context of national commitments to reduce NH₃-N loss whilst growing the agri-food sector.”⁶

There is an increasing interest in NI in melting urea for foliar application. There are questions as to whether protected urea can be used in this process. More research is required in this area.

Urea inhibitors have a reported shelf life of 6-12 months with many suppliers advising use within 3-4 months. ‘Use by’ dates should be required on fertiliser with urea inhibitors. This area has not been recognised within the consultation.

In addition there are farmers who use urea in liquid form and the UFU would like to see more information and research on the costs and yield implications for using inhibitors with this form of urea. Urea is also used in orchards and it is important to ensure that there is a suitable cost effective alternative for the horticulture sector if this ban is to be imposed.

Despite proposals to ban urea, England have not adopted a blanket ban due to various concerns raised by stakeholders. All the above points suggest that it would be unwise to consider banning the use of urea fertiliser in NI when there are still so many uncertainties around the costs and benefits of this policy proposal.

Chapter 4.1.6 Question 10. Do you have any comments on the proposals to reduce crude protein levels in livestock diets?

⁵Forrestal, P. et al, (2016), Ammonia emissions from urea, stabilized urea and calcium ammonium nitrate: insights into loss abatement in temperate grassland. Soil Use Manage, 32: 92–100

The UFU support the proposals to reduce crude protein in livestock diets in principle. The pig and poultry sectors have made significant gains already in reducing crude protein which will have reduced ammonia emissions and these sectors should be given credit for this.

Crude protein (CP) is more difficult to control in grazing livestock / forage-based diets however it is recognized that there is potential for further reductions within the cattle and sheep sectors. Silage analysis is key and should be supported by DAERA. Protein in livestock diets is expensive therefore most farmers will reduce where possible with the right guidance. It is vital that any reductions do not negatively impact on animal health and welfare and performance which could undermine any environmental improvements from the reduction in CP.

The UFU is supportive of DAERA's commitment within the consultation document 'to work with farmers and the feed industry' to identify the best strategies to reduce crude protein in livestock diets. It is vital that the ammonia inventory is updated to reflect changes in the protein levels of diets.

The UFU are supportive of home-grown proteins. The Union has vigorously lobbied for a protein payment in recent years encouraging the establishment of protein crops and striving longer term to reduce the livestock sectors dependence on imported protein. Locally produced proteins will deliver many environmental benefits. While the Pilot Protein Crops Scheme was useful and delivered an increase in the number of farmers growing protein crops, longer term commitments from DAERA are needed on protein crops to allow for rotation planning going forward. It is clear however, that growing protein crops without financial support is not viable in NI therefore if DAREA genuinely wish to see an increase in the number of acres produced, a budget must be committed. It should also be noted that not all farms are suitable for growing protein crops due to land type and climate and therefore this will not be an option for all farms.

DAERA should review the restrictions within the Nutrients Action Programme derogation criteria which restricts these farmers from growing protein crops. This is not helpful and should be removed from the derogation rules.

Chapter 4.1.7 Question 11. What are your views on the proposals relating to improving feed efficiency through genetic improvement?

The UFU is supportive of the proposed Ruminants Genetics Programme that is currently being developed. Improving productivity and feed efficiency are vital as the industry moves forward. The UFU agrees that the proposed Genetics Programme will allow farmers to select and breed from the most productive and environmentally sustainable animals.

This is a long-term project however any gains made must be promptly incorporated into the ammonia inventory.

Chapter 4.1.8 Question 12. What are your views on the proposals to encourage tree plantations around livestock housing?

While the UFU recognise that tree plantations around livestock housing will capture ammonia emissions, given the proposed scale needed and specific locations required, this is totally impractical

on most farms with the majority not having suitable sites of sufficient size and shape in the appropriate locations.

It should also be noted that some housing will include fans which are designed to disperse emissions and therefore tree plantations are of limited benefit to these farms.

There are concerns that encouraging tree planting close to farm buildings could result in potential insurance issues and devalues land. Risks to animal and flock health also need to be evaluated. Tree plantations close to yards will attract wildlife, such as badgers, and wild birds which could pose a threat to livestock and flocks therefore care needs to be taken.

However, where farmers feel they can incorporate suitable plantations, this should be recognised and accepted by planning authorities as a mechanism to offset ammonia emissions. There may also be some benefits to planting around some designated sites where the landowner is agreeable but this would need significant long term financial support from outside agriculture budget.

The UFU would also highlight that there are current difficulties in sourcing suitable trees due to a lack of nursery stock and restrictions due to the NI Protocol.

Chapter 4.1.9 Question 13. What are your views on how to encourage the safe covering of existing above ground slurry stores and lagoons?

The UFU feels that it is totally unacceptable that DAERA are even considering this proposal and yet include no updated figures on the costs to the industry. It is widely agreed that the cost of installing covers on tanks either on new tanks or on existing tanks is significant with very limited benefits. The saving in tank space due to the reduction in rainwater will not offset the installation costs. It is concerning that the draft Strategy incorrectly outlines that new slurry lagoons must be covered when this is not the case as indicated in the NAP Guidance.

Allowing the formation of a crust can result in reduction of emissions by up to 50% and therefore the UFU questions the real benefit of covering tanks. Rainwater entering tanks helps slurry consistency and particularly if LESSE is used, thinner slurry is necessary. More dilute slurry has lower ammonia emissions therefore covering tanks may not be as beneficial for emissions as suggested.

Covering existing stores present significant challenges and must be removed from the proposals. Many existing stores will not be structurally fit to hold a fixed cover and floating covers present a number of difficulties and more importantly safety issues. The small proportion of slurry stored in outdoor stores in NI, will mean that covering existing stores potentially results in only limited ammonia mitigation. The AFBI ammonia scenario output work estimates that if all existing stores were covered this would only result in approximately 1% reductions in emissions in NI.

While there are a number of options for floating covers there are concerns around all of these. Farmers who operate floating covers have highlighted a number of practical and safety issues and these are outlined below.

Impermeable floating covers offer no savings in terms of reducing rainwater entry to tanks and therefore are just a cost to farms. The clay balls which can be used are known to block pumps and cause issues when mixing and have to be replaced periodically therefore additional costs.

There is evidence of the plastic floating covers sinking in places and there are requirements to pump rainwater off the surface. This presents a number of practical challenges and the UFU would have serious concerns around safety. There is evidence of farmers entering tanks to fix problems which is a major safety concern. There are also issues with mixing tanks with covers, while there may be a mixing hatch on some of the plastic covers, this does not allow for a change in the mixing position. Mixing from the top of above ground stores is necessary, as the internal pumps do not offer sufficient mixing of the slurry. Many farmers with above ground stores operate pumps that can be moved around the top of the tank to allow efficient mixing this would not be possible with a cover.

The 'tented' covers present numerous challenges and have proved difficult to manage. Experience on farm has seen damage to tanks following strong winds increasing the risk of spillages/pollution. Also there is evidence of covers collapsing following snow. This has resulted in the need for cranes to be hired in to remove the covers safely at a cost. Snow lying on covers has also caused additional strain on the panels of above ground stores again resulting in structural damage.

The build up of gas under covers is a safety concern. Furthermore, above ground stores that use jet pumps to move slurry are unsuitable for covering.

Covering existing lagoons present even more challenges due to the large surface area and will depend on how they are constructed. Some lagoons mix from several points and empty from various points and therefore this would be difficult if a cover is installed.

There needs to be more research on the release of ammonia once mixing starts. While the UFU accepts a cover will reduce emissions there needs to be a full analysis carried out on what happens when the tank is mixed and this must be clearly communicated to the industry. In addition, the amount of water going into above ground stores from rainfall and also from yard runoff will result in slurry being more dilute than the standard figures would suggest. This would result in ammonia emissions potentially being lower than the current estimates and therefore the benefits in terms of nutrient efficiency from covering tanks are probably over estimated.

Chapter 4.2.1 Question 14. What are your views on DAERA's plans to support ammonia reduction measures through Green Growth and future agricultural policy?

It is clear that to deliver the level of ambition within the proposed Strategy DAERA must provide financial assistance to the industry.

Concerningly there are no firm commitments on budget or a scheme proposed to reassure farmers that there is a genuine will within Government to assist with ammonia reduction measures.

The UFU would propose that a capital grant scheme should be established in NI to improve environmental sustainability including tackling ammonia emissions but it is imperative that this is more practical and flexible than previous schemes.

While the UFU welcome the financial commitments that have been delivered to date which have assisted with equipment or buildings to reduce emissions through Manure Efficient Technology Scheme (METS), Farm Business Investment Scheme – Capital Tier 1 and Tier 2. All these schemes have been oversubscribed and underfunded. The FBIS has frustrated farmers with the 'Value for Money' element which results in farmers reducing grant support to help ensure they can avail of some funding from this competitive programme. 40% grant support rate is not sufficient to assist farmers and young farmers should be supported.

Reducing ammonia emissions has the potential to place enormous practical and financial burden on the agriculture industry – the outdated Regulatory Impact Assessment indicates a net cost to agriculture of £43.65million per year. This economic analysis was presented publicly by AFBI in 2020 and fails to take into account the considerable costs rises that have occurred in the past 2 years on feed, fuel, fertiliser equipment and machinery. It is vital that these costs are revised to reflect more accurately recent inflationary pressures.

The provision of adequate financial assistance towards the cost of ammonia mitigating measures is imperative. During other major policy changes, DAERA have brought forward financial schemes and incentives in tandem with policy proposals. It is unacceptable that DAERA are bringing proposals that could have a significant impact on the agricultural sector with only a vague commitment of possible support through Green Growth and Future Agricultural Policy proposals with no attempts made to draft, propose, or fund a mechanism or scheme to assist the industry.

It is also vital that DAERA sequence timelines to ensure that any support provided is of use and value. While the UFU accepts that once a policy becomes a legal requirement, DAERA cannot provide funding for that measure, it is therefore vital that the various implementation dates coordinate with any financial assistance to ensure that those who need to avail have opportunity to do so. Failure to sequence financial support and legislative timelines appropriately will not deliver the changes required to reduce ammonia emissions. To do otherwise could be interpreted negatively by the industry as an intentional mechanism by DAERA to drive down production.

The UFU would also reiterate our position that nature-based solutions such as peatland restoration and forestry should be funded from outside the agriculture support budget.

Chapter 4.2.2 Question 15. What are your views on DAERA's plans for knowledge transfer and education on ammonia reduction?

The UFU welcomes DAERA's plans for knowledge transfer and education on ammonia. Over the past number of years, the UFU has been working to communicate the ammonia issue to our membership through meetings, articles and events. The Union is committed to raising awareness of this issue and therefore welcomes DAERA commitment to work with the private and voluntary sectors to demonstrate best practice in ammonia reduction technologies.

While Business Development Groups (BDGs) are an effective means of communicating with some farmers, BDGs only target small percentage of the industry (around 3000 farmers) with some groups more successful than others. All farmers need access to advisers regarding ammonia advice.

There are concerns that the current knowledge transfer measures including BDGs. delivered by CAFRE will end in April 2024.

Chapter 4.2.3 Question 16. What are your views on the proposals for spatially targeted measures around designated sites?

The Ulster Farmers' Union are very concerned about the targeted measures and totally opposed to this proposal. The UFU believes that these measures will have a very significant impact on farms in these areas yet there is limited detail on this part of the Strategy.

Designated sites are a burden to farmers. Land is devalued and there is a burden placed on title deeds without compensation to the farmers. Previously restrictions were tied to the land designated but with the proposals within the draft Ammonia Strategy and planning restrictions, this incumbrance is now being extended to those farming close to designated sites. Farmers view these designations as having a landowner imposed upon them. These sites are often designated due to the way farmers have farmed and looked after the area over the years and protected the habitats. It is unclear as to which farms will be impacted by this approach and a lack of detail on what may be required.

UFU opposes any further designations on agricultural land and has consistently called for proper compensation for farmers who have had their land designated.

As outlined above the interchangeable use of terms such as internationally designated sites, nitrogen sensitive sites etc makes it even more difficult to determine what DAERA are proposing. Farmers are struggling to comprehend how ammonia emissions impact on water bodies and how significant this problem is. The various reference documents linked in this Strategy refer to terrestrial sites therefore it is unclear as to why DAERA and NIEA are considering all Natura 2000 sites within this consultation.

There has been no proper modelling or economic impact assessment carried out by DAERA/NIEA on the targeted measures. There has been a complete failure by Government to properly assess the number of farms impacted, farm types and area of land. Without this information it is impossible to accurately carry out the various assessments that are required as part of the consultation process.

The Equality Impact Assessment screening template clearly indicates that the proposed spatial elements around designated sites 'may have an impact on those of different political opinions due to the geographic location of designated habitats'. The level of this impact is outlined as 'major' which is clearly concerning and necessitates the need for a full EQIA to be completed.

The proposals to prohibit the spreading of manures within 50m of an internationally designated site by 2025 is totally unacceptable and will lead to unintended consequences with farmers likely to opt to maintain production and therefore increasing chemical fertiliser in this buffer resulting in perverse environmental outcomes and major increases in cost.

To compare this restriction to the NAP restriction around boreholes is a nonsense as there will be significantly less area impacted on farms than the measure proposed. If DAERA had actually carried out an assessment of this measure they would clearly have identified the significance of this proposal in terms of agricultural production. The UFU believes that the proposals to limit spreading will have a very significant impact on farms in around the internationally designated sites.

DAERA and NIEA have also failed to indicate the benefits of such a draconian measures to all designated sites. With Loughs, Rivers and Coasts all forming part of the internationally designated site network alongside bogs etc, it is unclear as to how the reduction in ammonia will help the condition of these sites as all of the research quoted and demonstrated has been associated with bogs.

It is totally unclear as to how the spreading restrictions would work in practice in some areas. The consultation refers to 'internationally designated sites' which is likely to include RAMSAR sites. The Lough Neagh Ramsar extends southwards from the shores of Lough Neagh to the M1 taking in a belt of productive agricultural land. Therefore, there are questions around where the 50m buffer would apply and can slurry spreading take place within this zone. It is clear that DAERA and NIEA haven't considered this element.

We have already outlined our concerns about the use of LESSE on more farms and therefore repeat our opposition to adopting this measure earlier on farms within 1km of sites particularly with no financial support in place and timelines for this identified.

This approach around targeted sites is totally divisive and will devalue farms in those areas. Land that is designated is already devalued and it is concerning that these 'zones' will further reduce the market for land within those areas.

These measures are totally unacceptable and we are extremely concerned that they could lead to much wider restrictions to all those farming 'close to' designated sites. The vague outline on page 58 of the draft Strategy document suggests that there is a potential for whole raft of restrictions close to sites but there is a complete lack of information on this other than a brief list of possibly suggestions. This is unhelpful and fails to properly consult on this aspect.

Chapter 5.5 Question 17. What are your views on the proposed conservation actions to restore habitats and support sustainable development?

While UFU support commitments to help landowners restore habitats more detail is needed on this approach. Again no budget or details of schemes have been outlined in order to deliver the various actions. The UFU position is clear that measures which will result in generational change of land use must be funded from outside the agriculture budget

Section 5.1

The UFU is concerned and insulted by DAERA's suggestion of the need to support 'traditional farming practices' on page 59. This suggests taking the industry back in time which is completely inappropriate. Farming in the 21st Century is more efficient, environmentally sustainable and has significantly improved standards than at any time in the last 50 years and has kept up with demands to feed a growing population.

DAERA refer to the current 'Programme for Government' on page 59 yet this was never finalised and agreed during the last NI Assembly.

Section 5.2

The UFU recognises the linkages between the Ammonia Strategy and Peatland Strategy and the Union provided a comprehensive response to the consultation on the Peatland Strategy. It is important to reiterate our position that financial support for the restoration of peatlands must come from an appropriate budget outside of agriculture.

Section 5.3

Those farming in or around designated sites have a largely negative experience of working with DAERA and NIEA and therefore lack trust going forward. The development of Conservation Management Plans (CMP) has been controversial. The CMP project has been an example of poor consultation and ability to work with farmers. Our members are dissatisfied by the lack of consultation and the lack of engagement around CMP that was promised on several occasions by DAERA & NIEA representatives. It is also clear that some CMPs are suggesting that ammonia is not an issue and no further action required at some of these sites. These conflicting messages from different NIEA teams is causing confusion and significant frustration and anger at the whole process.

Section 5.4

This section refers to 'low-emission land management' yet again this is not defined or outlined in the consultation document and is causing concern in the farming community as to what this may entail.

The reference to the role of agri-environment schemes seems to not be synchronised with the current DAERA position. There is a reference to further developing EFS Wider scheme – this is confusing given that DAERA have made it clear there will be no further tranches of EFS Wider and a completely new scheme in 'Farming with Nature' is being developed.

Chapter 5.5 Question 18. What are your views on the appropriate delivery and funding mechanisms to deliver habitat restoration?

It is helpful that the draft strategy outlines further work ongoing to profile the NI site network and that this work will inform the most appropriate mitigation approaches for sites. It is worryingly that this work is incomplete, yet DAERA are proposing targeted measures at all internationally designated sites without knowing which sites would favour from this approach and therefore have not developed a baseline against which to measure progress. At previous meetings with CEH/NIEA/DAERA there were discussions around the potential for some species to adapt to higher N loadings than the Critical Loads and Levels set out and this needs further investigation.

It also appears that the ecological response and bio-indicator work outlined on page 64 is not yet complete. It is unacceptable that DAERA is proposing draconian targeted measures without this key work being completed to inform policy and develop appropriate baselines.

While there are commitments to annual reporting on progress on reducing emissions, there must also be regular and accurate reporting on habitat condition and assessment.

Chapter 6.1 Question 19. Do you have any comments on what evidence or issues should be considered when assessing these impacts?

Regulatory Impact Assessment (RIA)

The UFU is concerned that the Regulatory Impact Assessment (RIA) is outdated, inaccurate and does not include the spatially targeted measures.

The RIA highlights 'mandatory standards for new livestock housing' and outlines that the 'Strategy seeks views on whether permitting should be extended to cattle farms in NI'. Clearly the RIA has been carried out on another version of the Strategy which is concerning and we would ask if due process has actually been carried out. It would suggest that the other assessments may also be inaccurate and therefore undermines industry confidence around this consultation.

The fact that the RIA is based on MACC curves that were presented publicly to the industry in September 2020 is extremely worrying. This is almost 2 ½ years ago and since then there have been significant price rises to all the major farming inputs and to equipment and machinery. This therefore does not accurately reflect the true costs and benefits of the policy measures proposed and therefore cannot be accepted as a suitable RIA for this policy.

For example, UFU representatives have quoted that some LESSE equipment has tripled in price since early 2020.

The AFBI Economic Analysis outlined that reducing beyond 22% ammonia emissions (i.e. option 2) is much more expensive for each unit of ammonia reduced. Therefore Option 3 is significantly more expensive to the agricultural industry for the ammonia reductions produced (25-28%).

The RIA also suggests under Option 3 that with this more ambitious option the risk of not meeting targets is 'increased'. This seems contradictory and if this is the case the UFU would query why DAERA appear to have selected option 3 within the Strategy which increases the risk of failing to meet targets according to this analysis.

The RIA contains no information on the impact of spatially targeted measures. This is totally unacceptable. As outlined above, the proposal to restrict spreading within 50m of an internationally designated site has the potential to have a very significant impact on the agricultural sector. This has not been quantified or costed which is a clear failing in the policy development process. This is completely unacceptable as Government are unable to assess true potential costs/benefits without an accurate assessment.

Given the inaccuracies of and gaps within the RIA , the UFU is concerned that this consultation process is fundamentally flawed.

Equality & Disability Duties Screening Template

Page 9 of the screening template shows a map of the Special Areas of Conservation (SAC) but fails to show the other internationally designated sites Special Protection Areas (SPA) and Ramsar sites. Given previous points on the ambiguity of language around the sites DAERA are actually considering within this document, this selection of SAC only in Figure 1 is causing further confusion.

As the RIA failed to assess the impact of the spatially targeted measures properly, this will need to be revised and then assessed for Equality and Disability issues.

The Equality and Disability Screening template clearly indicates that the spatially targeted measures will have a major impact on 'religious belief' and 'political opinion' therefore the UFU understands that a full EQIA will now be required.

As the Rural Needs Assessment refers to the flawed RIA, this will also need to be revisited with new and relevant economic information. The targeted approach has the potential to hit some of the most deprived rural areas the hardest and therefore needs to be reviewed.

Chapter 6.2 Question 20. What are your views on how DAERA should work with stakeholders to inform the direction and delivery of the strategy, and the detail of the various measures?

The Ulster Farmers' Union accepts that there is a need to deal with ammonia emissions. We believe that while extremely challenging, with a long-term approach the industry can work together with other key players to successfully deal with ammonia. This will need a genuine partnership approach where all parties are committed to supporting a sustainable agriculture industry while reducing ammonia emissions.

The UFU is supportive of DAERA working with stakeholders however, the UFU and other industry representatives raised concerns about previous stakeholder engagement on this issue. There was some disillusionment back in 2018 with the process, the lack of impartiality of some DAERA and NIEA staff at that time, and the balance of the stakeholders present. The farming and agri-food representatives were outnumbered yet have most at stake around this issue. Therefore, as DAERA plan to reengage with stakeholders on this important issue we would ask that previous concerns communicated to the Permanent Secretary by agri-food stakeholders in a letter dated 24th August 2018 are taken into account.

There are current Stakeholder Groups already established such as the Agri-Policy Stakeholder Group. Alternatively, the SALMS Expert Working Group recommended revamping the Greenhouse Gas Implementation Partnership and incorporating ammonia within its remit as an Agri Emissions Partnership.

Chapter 6.2 Question 21. Do you have any other comments or contributions on this document?

The UFU recognise that that a 'Call for Evidence' is planned on the NIEA Operational Protocol. This will be challenging but engagement is needed. The UFU has concerns around the current approach to planning for dealing with ammonia emissions on farms. There is still a lack of clear advice and guidance available from NIEA and Shared Environmental Services for those farmers considering changing or updating their farm businesses.

The UFU remains committed to maintaining high environmental and animal health and welfare standards on NI farms. As part of this commitment, investment in modern buildings and infrastructure, to reduce our environmental footprint will have a huge role to play. There are worthwhile investments that the industry is being actively encouraged to undertake, not just to modernise but also to deliver requirements to help protect and improve our environment, animal/bird welfare and to meet retailer expectations such as the move away from colony egg systems towards barn and free-range eggs. This is a particular problem for the replacement of buildings or infrastructure (also known as 'betterment') - even though the overall emissions for the new build may be reduced, it is often difficult for businesses to gain planning permission as these projects are treated in the same way as new builds. It is totally unacceptable that existing farm businesses are in some cases unable to replace buildings and modernise despite showing that they can reduce ammonia emissions and that some mitigation options are not accepted. We would urge you to ensure that 'betterment' is permitted to deliver environmental and production improvements on existing farms.