



**AGRISEARCH RESPONSE TO THE
DAERA CONSULTATION ON:
NUTRIENTS ACTION PROGRAMME
2027–2030**

September 2026

Contents

Executive Summary.....	3
AgriSearch’s principal recommendations	6
Introduction	8
Support for collaborative policy development	9
Co-design and early stakeholder involvement	9
Continued engagement during implementation	9
Assessing progress during implementation	10
Overall view of the revised proposals	12
A more practical approach	12
Delivering the proposals at farm level.....	12
Need for clear implementation sequencing and farmer transition.....	14
Clear implementation pathway.....	14
Phosphorus baseline and revised dairy cow nitrogen excretion values.....	15
Managed transition	16
Farm-level advice and decision support	17
Farm-specific advice and decision support	17
Consistent advice and practical systems	19
Focused catchments as learning and demonstration platforms	22
Applied research, innovation and demonstration	24
A coordinated evidence-to-practice pathway.....	24
Feeding and whole-farm nutrient efficiency	26
Manure processing, technology and innovation	29
Soil, weather and measurement	31
Conclusion.....	32
Key references and evidence sources	34

Executive Summary

AgriSearch welcomes the opportunity to respond to the consultation on the Nutrients Action Programme (NAP) 2027–2030. In keeping with its charitable objectives, this response focuses on research, evidence, knowledge exchange, practical implementation and the improvement of beef, sheep and dairy farming in Northern Ireland. AgriSearch recognises the need for continued improvement in water quality and nutrient-use efficiency, and the important role that agriculture must play. It also recognises that lasting improvements in water quality will require sustained action across all contributing sectors.

AgriSearch considers that, while important implementation, evidence and transition issues remain unresolved, the revised NAP proposals provide a substantially more balanced, practical and implementation-focused basis for progressing nutrient-management and water-quality objectives than the proposals consulted upon in 2025. The greater emphasis on nutrient-use efficiency, targeted action, phased implementation, advisory support and practical delivery is welcome. The Stakeholder Task and Finish Group process has demonstrated the value of co-design, bringing scientific evidence, practical farming experience and implementation considerations together. AgriSearch believes this approach should continue during implementation and should inform the development of other major policies affecting agriculture.

Successful delivery will, however, depend on providing farmers with sufficient clarity and time to understand how the different measures interact before significant management or investment decisions are required. AgriSearch recommends that, where the revised NAP requires a farm to demonstrate a percentage reduction in its farm-gate phosphorus balance, the baseline should be based on the most recent complete pre-implementation year for which the necessary data are available before the revised requirements take effect. On the current timetable, this would normally be 2026. Consistent with the recommendation of the NAP Science Sub-Group, farmers should also have the option of using an appropriate three-year average, for example 2024–2026, where this would provide a more representative baseline and reduce the influence of normal annual variation. If revised dairy cow nitrogen excretion values are introduced, AgriSearch considers that they should take effect no earlier than 2028 and should be phased over the remainder of the NAP period, allowing farmers time to assess their position and adapt their systems.

AgriSearch is concerned that the full Economic Impact Assessment was not available at the outset of the consultation. It should be published as soon as possible and should inform final implementation sequencing, transition arrangements and supporting measures.

Farm-level advice and decision support will be critical. DAERA's Technical Sub-Group analysis identifies 2,110 farm businesses that, in 2024, had livestock manure nitrogen production of 170 kg N/ha/year or above. These farms will need to understand the distinction between nitrogen production and nitrogen loading, their phosphorus balance and the practical options available to them. For many, this will require a detailed farm-specific "kitchen table" conversation. Meeting an advisory requirement of this scale and complexity is likely to require a significant increase in delivery capacity, including sufficient numbers of suitably competent advisers with the necessary Northern Ireland-specific nutrient-management expertise, particularly during the early years of implementation.

AgriSearch recommends that DAERA establish a dedicated NAP Delivery Group to oversee and coordinate the technical and advisory support required for implementation, with particular focus on the 2,110 farm businesses at or above the 170 kg N/ha livestock nitrogen production threshold. A key function of this Group should be to help ensure the provision of clear DAERA guidance, a concise plain-language farmer decision map and appropriate practical decision support. More detailed worked examples, calculators and nutrient-management planning tools should be developed once the final regulatory requirements, sequencing and calculation methodologies are sufficiently clear, and should be practically tested with farmers and advisers before wider implementation. These tools should, where appropriate, make effective use of existing farm-boundary, field-map and Soil Nutrient Health Scheme data, with relevant information securely available in interoperable, machine-readable formats that allow data to be transferred and reused between systems, subject to appropriate farmer permissions. The proposed NAP Steering Group should provide stakeholder oversight of this delivery process and a mechanism through which practical implementation issues can be identified and considered collaboratively. DAERA should retain responsibility for the authoritative interpretation of the NAP, while industry, advisers and research organisations help farmers understand and apply that guidance.

Progress should be assessed using a broad evidence base. The review should also seek to distinguish between measures which have not been implemented or adopted as intended and measures which have been implemented correctly but are not delivering the expected outcome. Water-quality improvements may lag considerably behind changes in farm practice, while reductions in elevated soil phosphorus can take many years. The two-year review should therefore give substantial weight to leading indicators such as changes in nutrient inputs, farm phosphorus balance, agricultural practice, fertiliser use and uptake of relevant measures, alongside emerging water-quality evidence. An absence of measurable short-term improvement in water quality should not, on its own, be treated as evidence of failure or sufficient justification for escalation where credible leading indicators show that measures have been implemented and nutrient management is moving in the intended direction. The Science Sub-Group

estimates that, where no additional phosphorus is applied, movement from a high Index 4 to a mid-Index 2 may take around eight years in silage systems and 12–13 years in grazing systems. These timescales do not lessen the need for early action; rather, they illustrate why realistic expectations and credible intermediate measures of progress are required.

AgriSearch sees particular value in using the proposed focused catchment areas as structured learning, research and demonstration platforms, combining one-to-one advice, peer learning, commercial-farm research and demonstration, and robust monitoring. Effective phosphorus mitigation requires attention not only to nutrient inputs and accumulated soil phosphorus, but also to critical source areas and the hydrological pathways by which nutrients reach water. Learning generated through these areas should be captured and shared more widely, making use of existing industry, processor and advisory relationships where possible.

A coordinated programme of research, innovation, commercial-farm research and demonstration, knowledge exchange and farm-level decision support will be essential to provide farmers with practical and proven options. AgriSearch welcomes the proposed co-designed Nutrient Efficiency Roadmap and the Science Sub-Group recommendation for a farm systems research platform linked to on-farm studies. Priority research areas include lower crude protein diets; improved understanding of phosphorus content and availability in modern forages and concentrate feeds; the role of soil pH, grassland management, multi-cut and other forage systems in improving nutrient utilisation and removing phosphorus from high-P soils; nutrient processing, slurry separation and export; and the development and independent validation of innovative low-emission slurry-spreading technologies. Measurement systems and the nutrient-content coefficients underpinning national nutrient-balance calculations must also remain current, transparent and quality-assured.

AgriSearch also stresses that successful implementation of parts of the revised NAP will depend on demonstrable progress in areas outside the NAP itself, particularly ammonia policy, planning arrangements and the development of workable nutrient-processing pathways, including through the Sustainable Utilisation of Livestock Slurry (SULS) programme. Where compliance or adaptation depends on such pathways, farmers should not be placed in a position where regulatory requirements take effect before the practical and regulatory routes needed to respond to them are available. Nutrient-processing and export options being developed through initiatives such as SULS remain at different stages of technical and commercial development and will therefore need to progress in parallel with implementation of the NAP. Anaerobic digestion can provide an important processing and energy-recovery route. However, as nitrogen and phosphorus are retained in the resulting digestate, its contribution to reducing regional nutrient surpluses depends on effective downstream separation,

recovery and, where appropriate, export. Proven technologies therefore need a practicable route from research and validation through to commercial adoption.

Overall, AgriSearch believes the revised NAP has a greater prospect of achieving lasting change if it is implemented through partnership, supported by sound evidence, practical options, trusted advice and an effective evidence-to-practice pathway. AgriSearch would particularly stress the importance of a coordinated approach between DAERA, CAFRE, research organisations, AgriSearch and industry partners in supporting practical implementation and the development of the Nutrient Efficiency Roadmap, subject to appropriate resources and partnership arrangements.

AgriSearch's principal recommendations

1. **Implementation and economic assessment:** Before affected farmers are required to make significant management or investment decisions, DAERA should complete and publish the full Economic Impact Assessment and a sequenced implementation plan identifying milestones, dependencies, delivery responsibilities and transition support, including how implementation will be coordinated with relevant ammonia policy, planning arrangements and SULS delivery.
2. **Phosphorus baseline:** Where a percentage reduction in farm-gate phosphorus balance is required, the baseline should use the most recent complete pre-implementation data available before the revised requirements take effect, normally 2026 on the current timetable, with the option of an appropriate three-year average such as 2024–2026.
3. **Dairy cow excretion values:** If revised dairy cow nitrogen excretion values are introduced, implementation should take place no earlier than 2028 and should be phased over the remaining NAP period. Calculation, verification and reporting arrangements should be finalised, published and practically tested before any revised values take effect.
4. **Farm-specific advice:** DAERA should establish a dedicated NAP Delivery Group, working in conjunction with the proposed NAP Steering Group, to oversee and coordinate implementation support, quantify and appropriately resource the additional advisory capacity required, including the availability of advisers with appropriate nutrient-management planning competence and up-to-date knowledge of Northern Ireland-specific NAP requirements and the training capacity required to expand that pool, and ensure the provision of clear DAERA guidance and a concise farmer decision map. Practical decision-support tools, worked examples, calculators and digital systems should be developed and

tested once the final regulatory requirements and calculation methodologies are sufficiently clear. Relevant farm-boundary, field-map and SNHS data should also be made securely available, subject to farmer permission, in interoperable, machine-readable formats so that these tools can minimise duplicate data entry and make effective use of existing information.

5. **Monitoring and review:** The monitoring and evaluation framework should be published at the outset, using clearly defined indicators, baselines and methodologies. The two-year review should distinguish between shortcomings in implementation and shortcomings in the effectiveness of individual measures, and should give appropriate weight to credible leading indicators of changes in nutrient management and farming practice. An absence of measurable short-term improvement in water quality should not, on its own, be treated as evidence of failure or sufficient justification for escalation where credible leading indicators show that measures have been implemented and nutrient management is moving in the intended direction.
6. **Practical solutions and innovation:** Where compliance and adaptation pathways depend on new technologies, infrastructure or nutrient-processing options, implementation timetables should reflect their demonstrated practical and commercial readiness and the availability of workable regulatory, planning and permitting routes for their deployment. The Nutrient Efficiency Roadmap should coordinate research, innovation, commercial-farm validation, demonstration and knowledge exchange.
7. **Developing future research and evidence needs:** Building on the positive co-design approach established through the NAP Stakeholder Task and Finish Group, DAERA should establish a structured process during the 2027–2030 NAP period to identify and prioritise the research and evidence needed to address remaining knowledge gaps and inform the development of the next Nutrients Action Programme. This process should involve relevant scientific, farming and industry expertise and should begin sufficiently early to allow priority research to be commissioned, completed and considered ahead of the next NAP review.

Introduction

AgriSearch (The Northern Ireland Agricultural Research and Development Council) welcomes the opportunity to respond to the Consultation on the Nutrients Action Programme 2027–2030.

AgriSearch was formed in 1997 to provide a mechanism through which beef, dairy and sheep farmers could have direct involvement in production-orientated research. Funds contributed to AgriSearch are used to commission research into the improvement and development of beef, sheep and dairy farming. Under its *2025–2030 Strategic Statement*¹, AgriSearch’s vision is to drive farm profitability and sustainability through science, research and innovation. Its purpose is to equip farmers through the application of science, research and innovation to make a difference for the rural economy, environment and society, working with others to turn scientific possibilities into sound farm practice.

AgriSearch has limited its response to those areas of the consultation that relate to its charitable objectives, particularly research, evidence, knowledge exchange and the practical improvement of sheep, beef and dairy farming in Northern Ireland. The response therefore focuses on implementation, evidence, farmer support and practical delivery rather than seeking to answer each individual consultation question.

AgriSearch recognises the need for continued improvement in water quality and nutrient-use efficiency, and the important role that agriculture must play in achieving this. At the same time, water quality is influenced by a range of pressures, including agriculture, wastewater infrastructure, septic tanks, urban drainage and other sources. Lasting improvement will therefore require coordinated and sustained action across all contributing sectors. Within agriculture, measures to improve environmental performance need to be practical at farm level and compatible with maintaining productive and viable farm businesses. Improving nutrient-use efficiency can help achieve both objectives by reducing nutrient losses to the environment while making better use of valuable farm inputs.

¹ [AgriSearch Strategic Statement 2025 - 2030](#)

Support for collaborative policy development

Co-design and early stakeholder involvement

AgriSearch welcomes the establishment of the NAP Stakeholder Task and Finish Group and the more collaborative approach that has informed the revised proposals. The current consultation represents a significant improvement on the proposals consulted upon in 2025, with greater emphasis on practical delivery, nutrient efficiency, farmer support and phased implementation. AgriSearch considers that the involvement of farming, industry, environmental and government stakeholders has helped to produce proposals that are more likely to be understood and implemented successfully at farm level.

The experience of the Stakeholder Task and Finish Group demonstrates the value of involving those affected by policy, alongside scientific and technical expertise, at an early stage in its development. AgriSearch believes that this type of co-design approach should be used from the outset in future reviews of the Nutrients Action Programme. Early engagement provides an opportunity to test the scientific evidence, identify practical implications, explore alternative approaches and address potential delivery problems before proposals become firmly established.

AgriSearch also believes that this approach has wider relevance beyond the NAP. Many of the major challenges facing Northern Ireland agriculture are closely interconnected, including water quality, ammonia emissions, climate action, nutrient management and the long-term sustainability of farm businesses. Policy in these areas will be more effective where it is developed collaboratively and where scientific evidence, practical farming experience and implementation considerations are brought together. Similar co-design approaches should therefore be considered in the development and review of other major policies affecting agriculture.

Continued engagement during implementation

Stakeholder engagement should not end when the regulations are finalised. Continued involvement during implementation will be important to ensure that guidance is clear and consistent, to identify practical difficulties as they emerge and to help maintain farmer confidence in the programme. This will be particularly important during the early years of the revised NAP, when farmers, advisers, industry and government will be adapting to a number of new or revised requirements. There should be a mechanism for implementation experience to be shared and considered so that practical issues can be addressed quickly and lessons incorporated into future delivery.

Changes to guidance, interpretation or implementation arrangements should be communicated early, clearly and consistently, so that farmers and advisers have sufficient time to understand and respond to them and are not faced with unexpected changes close to implementation or compliance deadlines.

Assessing progress during implementation

The consultation proposes that progress with the measures introduced under the revised NAP will be reviewed within two years, with particular focus on the new approach to chemical phosphorus fertiliser, the Nutrient Stewardship Programme and the Focused Approach. Where fertiliser sales data are used as a proxy for farm-level use, interpretation should also recognise any limitations arising from cross-border movements and other gaps in the available data. AgriSearch welcomes the proposal to develop metrics and indicators which include changes in behaviour and agricultural practice, trends in chemical phosphorus fertiliser use, and uptake and effectiveness of the relevant measures. These types of indicators will provide important early evidence of whether the programme is becoming embedded and influencing nutrient management in the intended direction.

AgriSearch considers this particularly important because measurable changes in water quality may lag considerably behind changes in farm practice. While water-quality monitoring should remain an important part of assessing the longer-term effectiveness of the NAP, the two-year review should recognise the limits of what can reasonably be demonstrated within that timeframe. Short-term water-quality trends can also be influenced by factors such as weather and climatic variability. Decisions arising from the review should therefore be informed by the full range of available evidence, including uptake of measures, changes in farming practice and indicators of improved nutrient management, alongside emerging water-quality evidence.

AgriSearch also considers that the two-year review should seek, as far as practicable, to distinguish between measures which have not been implemented or adopted as intended and measures which have been implemented correctly but are not delivering the expected outcome. This distinction will be important before decisions are taken to strengthen, replace or make existing measures more restrictive. Monitoring should therefore consider implementation and compliance, uptake, changes in management practice and environmental outcomes together, so that the reasons for progress or lack of progress can be understood.

Accordingly, an absence of measurable short-term improvement in water quality should not, on its own, be treated as evidence that a measure has failed or as sufficient justification for escalation where credible leading indicators demonstrate that the

measure has been implemented and nutrient management is moving in the intended direction.

Where inspection and compliance information is used as part of this assessment, the underlying data should also be sufficiently robust and representative for the conclusions being drawn. Results from risk-based, random and referral-based inspections should be clearly distinguished, as each serves a different purpose and may produce different apparent levels of compliance.

AgriSearch therefore believes that the monitoring and evaluation framework for the revised NAP should be established and published at the outset, identifying the principal indicators, baselines, data sources and methodologies that will be used to assess progress. This would provide greater transparency and help ensure that evidence collected during implementation can support meaningful evaluation and, where necessary, well-founded adaptation of the Programme.

Water-quality monitoring used to assess the effectiveness of the Programme should also be sufficiently representative, transparent and scientifically robust, with appropriate independent scrutiny of the monitoring approach, data and interpretation. This will be important in maintaining confidence among farmers, policymakers and wider stakeholders in the conclusions drawn from the evidence.

Expectations should also recognise that reducing elevated soil phosphorus through improved nutrient balance and phosphorus offtake is a long-term process and may extend well beyond a single NAP cycle. The Science Sub-Group² has estimated that movement from a high Index 4 to a mid-Index 2 may take approximately eight years in silage systems and 12–13 years in grazing systems where no additional phosphorus is applied. These timescales do not lessen the need for early action; rather, they reinforce the importance of assessing early progress through credible intermediate indicators. Review arrangements should therefore recognise credible intermediate evidence of progress, including changes in nutrient inputs, farm phosphorus balance and management practice, rather than relying solely on substantial short-term changes in soil phosphorus status or water quality.

² [NAP Science Sub-Group, Science Sub-Group Process Summary and Response Papers \(2026\)](#)

Overall view of the revised proposals

A more practical approach

AgriSearch considers that, while important implementation, evidence and transition issues remain unresolved, the revised NAP proposals provide a substantially more balanced, practical and implementation-focused basis for progressing nutrient management and water-quality objectives than the proposals consulted upon in 2025. The greater emphasis on nutrient-use efficiency, targeted action, phased implementation and advisory support is particularly welcome.

These represent important changes in approach. Regulation is more likely to deliver lasting change when it is supported by measures that help farmers make better use of nutrients, understand where losses or surpluses are occurring and identify practical ways of improving performance. Similarly, targeting additional effort and support towards farms and areas where nutrient-management challenges are greatest should help make more effective use of available resources.

Delivering the proposals at farm level

The increased focus on practical implementation is important. The effectiveness of the revised NAP will ultimately depend on how the measures operate on individual farms and whether farmers can understand what is required of them, assess the implications for their businesses and identify realistic options for responding. The proposed use of phased and tiered approaches in a number of areas should provide farmers and the wider industry with greater opportunity to prepare for change and adapt farming systems over time.

AgriSearch therefore considers that the revised package is more likely to achieve meaningful change at farm level than the original 2025 proposals. However, this should not be interpreted as suggesting that all of the practical challenges have been resolved. A number of important details remain to be clarified, particularly around the sequencing and interaction of different measures and how they will operate at individual farm level.

This clarity will be essential before affected farmers are required to make significant management or investment decisions. Farmers need to understand not only the regulatory position that will apply to their business, but also the range of practical options available to them and how changes made in one part of the farming system may affect requirements elsewhere. AgriSearch therefore believes that the final NAP and its supporting guidance should provide a clear and coherent implementation pathway, supported by appropriate advice, evidence and practical decision-making tools.

DAERA has indicated that a full Economic Impact Assessment will be finalised and will be essential to inform implementation. AgriSearch is concerned that this assessment was not available at the outset of the consultation, limiting the ability of stakeholders to assess fully the potential business implications of the proposed measures and the practicality and cost of different adaptation pathways. It should be published as soon as possible and should form part of the evidence base used to finalise implementation sequencing, transition arrangements and supporting measures, so that the practical and business implications of the different pathways are understood before farmers are required to make significant management or investment decisions. The Regulatory Impact Assessment necessarily relies on a number of simplifying assumptions at this stage and acknowledges that costs and profitability impacts will vary substantially between individual farms. The full Economic Impact Assessment should therefore test the proposed pathways across a representative range of commercial farm systems and circumstances, considering the practical availability and cost of adaptation options; planning and ammonia-related constraints where adaptation requires new infrastructure or capital investment; advisory requirements; potential impacts on output and profitability; and the time required to implement change.

Once published, stakeholders should be given sufficient time to consider the Economic Impact Assessment and, where it identifies material impacts or changes the assumptions underpinning the proposed measures, an opportunity to provide further comment before final decisions are taken.

Need for clear implementation sequencing and farmer transition

Clear implementation pathway

AgriSearch believes that successful implementation of the revised NAP will depend not only on the individual measures proposed, but also on the order and timing in which they are introduced. At present, the consultation does not provide sufficient clarity on how a number of the key measures will interact over the 2027–2030 period. The final NAP, and the guidance accompanying it, should therefore set out a clear implementation pathway so that affected farmers can understand when requirements will apply, how their position will be assessed and what options are available to them before they are required to make significant management or investment decisions.

This is particularly important for farms that may be affected by both the proposed farm-level phosphorus balance requirements and the revised dairy cow nitrogen excretion values. These measures have the potential to interact significantly at farm level. Farmers will need sufficient time to establish their starting position, understand the implications for their individual business and consider the practical changes that may be required.

Implementation sequencing must also take account of dependencies beyond the NAP itself. AgriSearch considers progress on ammonia policy, planning arrangements and the development of SULS and other nutrient-processing pathways to be important dependencies for successful implementation, particularly where a farm's compliance or adaptation pathway requires new infrastructure, manure processing or other capital investment. Where those pathways are necessary, farmers need a realistic route through the relevant planning, ammonia and regulatory frameworks before the associated NAP requirements take full effect. Similar coordination will be required with animal-health controls where disease-related movement restrictions can materially affect livestock numbers, feed imports and farm nutrient balances. DAERA should therefore set out how these interdependent policy and delivery strands will be coordinated and sequenced alongside implementation of the NAP.

Phosphorus baseline and revised dairy cow nitrogen excretion values

AgriSearch recommends that, where the revised NAP requires a farm to demonstrate a percentage reduction in its farm-gate phosphorus balance, the baseline should be based on the most recent complete pre-implementation year for which the necessary data are available before the revised requirements take effect. On the current timetable, this would normally be 2026. Consistent with the recommendation of the NAP Science Sub-Group, farmers should also have the option of using an appropriate three-year average, for example 2024–2026, where this would provide a more representative baseline and reduce the influence of normal annual variation.

The revised dairy cow nitrogen excretion values based on milk yield have the potential to result in a significant change in calculated nitrogen production and loading for some dairy farms. If DAERA proceeds with the introduction of revised dairy cow nitrogen excretion values, AgriSearch believes that they should take effect no earlier than 2028 and that implementation should be phased over the remaining period of the NAP. This would provide affected farmers with time to understand their revised nitrogen position, assess the options available to them and, where necessary, make considered changes to their farming system rather than having to respond abruptly to a materially different calculated nitrogen position. A start no earlier than 2028 would also be consistent with the approach outlined by the NAP Technical Sub-Group, under which farmers would establish and submit their nitrogen excretion position during the first year of the Programme, with the revised value applying from the start of the second year. Where farmers choose to use the proposed diet-based calculation route, the underlying methodology and independent verification protocol should be finalised, published and practically tested before the route becomes operational. Farmers and advisers will need confidence that the calculation methodology is robust and that the information required can be collected and verified consistently under commercial farm conditions.

The scientific assumptions underpinning these calculations should also be transparently documented and periodically reviewed against contemporary Northern Ireland data. In particular, further commercial-farm sampling of feeds, forages and manures would help strengthen the evidence base used to estimate nutrient intake and excretion and support future refinement of both standard and farm-specific values. The associated DAERA calculators and online submission system should also be user-tested with farmers and advisers before full implementation.

It will also be important that the interaction between the revised dairy cow nitrogen excretion values and farm phosphorus balance requirements is addressed clearly. Management changes made in response to revised dairy cow nitrogen excretion values may also improve phosphorus efficiency. These could include changes to diet and concentrate use, slurry export, land use or wider nutrient-management practices. Where such changes reduce a farm's phosphorus surplus, AgriSearch believes that they

should be capable of contributing towards the required reduction in farm phosphorus balance. The implementation arrangements should avoid creating a situation in which farmers who take early action to improve nutrient efficiency are disadvantaged because those improvements are not recognised within the subsequent assessment framework.

Managed transition

For these reasons, AgriSearch believes that the early phase of the revised NAP should be treated as a **managed transition period**. The initial emphasis should be on establishing reliable farm baselines, helping farmers understand their position, providing farm-specific advice and enabling practical planning for change. This does not remove the need for appropriate regulatory oversight, but it recognises that successful and lasting implementation is more likely where affected farmers are given the information, time and support needed to make well-informed decisions.

Implementation arrangements should also recognise exceptional circumstances where a farm's nutrient position is materially affected by regulatory restrictions outside the farmer's control. Bovine tuberculosis provides an important example. During a prolonged TB breakdown, movement restrictions can require a farmer to retain cattle that would otherwise have been sold or moved, increasing livestock nitrogen production and loading and requiring additional purchased feed, which can in turn increase the farm-gate phosphorus balance. The option of using a three-year average may help reduce the effect of a single abnormal year on some phosphorus calculations, but it will not fully address prolonged or recurrent restrictions.

AgriSearch recognises that a blanket exemption from nutrient-management requirements may not be a realistic or workable solution. Rather, DAERA should ensure that practical animal-health control arrangements are available to prevent regulatory restrictions themselves from creating avoidable nutrient-management problems. This should include the timely establishment of sufficient capacity within the Alternative Control Herd arrangements, including Controlled Finishing Units and Calf Rearing Units, alongside appropriate use of other risk-assessed licensed movements, so that surplus stock can be moved from TB-restricted holdings where this can be done safely.³ Where such options are unavailable despite reasonable efforts by the farmer, those circumstances should be taken into account transparently in compliance and enforcement decisions.

³ [Department of Agriculture, Environment and Rural Affairs \(DAERA\), Minister Muir announces revised criteria for Alternative Control Herds for cattle in Northern Ireland](#) (22 July 2026); [DAERA, TB Movement Restrictions](#).

Comparable controlled movement arrangements have operated in England and Wales for a number of years, including Approved Finishing Units which provide a licensed outlet for cattle from TB-restricted holdings subject to defined testing, biosecurity and movement controls.⁴

A clearly published implementation timetable, identifying key milestones, dependencies and delivery responsibilities, supported by worked examples and consistent advice from DAERA, CAFRE and the wider advisory sector, would give farmers greater certainty and help ensure that the different elements of the revised NAP operate together as a coherent programme rather than as a series of separate requirements.

Farm-level advice and decision support

Farm-specific advice and decision support

Clear implementation arrangements will need to be matched by a significant programme of practical, farm-specific advice and decision support. For many of the farms most affected by the revised NAP, generic guidance or standard information will not be sufficient. Farmers will need to understand their own nitrogen production and loading, farm phosphorus balance and the interaction between the different measures before they can make informed decisions about how best to respond.

As a first step, AgriSearch recommends that DAERA establish a dedicated NAP Delivery Group to oversee and coordinate the technical and advisory support required for implementation, with particular focus on the 2,110 farm businesses at or above the 170 kg N/ha livestock nitrogen production threshold. A key function of this Group should be to help ensure the provision of clear DAERA guidance and a concise, plain-language decision map setting out which farms are potentially affected, the key information farmers need to establish their starting position, the principal decision points and where authoritative advice can be obtained. This should sit alongside more detailed technical guidance. The additional flexibility within the revised proposals is welcome, but the resulting complexity should not require farmers to interpret multiple documents or use several separate calculators simply to understand their starting position.

An important early requirement will be helping farmers understand the distinction between livestock nitrogen production, which under the revised proposals determines whether certain additional requirements apply, and nitrogen loading, which is relevant to compliance with organic nitrogen limits.

⁴ [Animal and Plant Health Agency, Approved finishing units for cattle: application and approved premises](#) (updated 3 July 2026).

DAERA's Technical Sub-Group analysis identifies 2,110 farm businesses⁵ that, in 2024, had livestock manure nitrogen production of 170 kg N/ha/year or above. This figure relates to the livestock nitrogen production threshold used to determine whether additional requirements apply; it should not be interpreted as a finding that all of these farms are non-compliant with the separate nitrogen loading limit. All of these farms will need to understand their position under the revised arrangements and consider the practical options available to them.

Published supporting documents refer to both livestock nitrogen production and nitrogen loading and cite different farm numbers in relation to the relevant 170 kg N/ha thresholds. The final NAP and its guidance should reconcile these figures and clearly explain which calculation applies to each measure. This clarity will be particularly important where the different measures use production and loading for different purposes.

Alongside individual advice, affected farmers should have opportunities to participate in facilitated small-group, on-farm sessions where practical issues can be discussed in the context of a working farm, farmers can learn from others facing similar challenges, and the implications of different options can be explored. Existing mechanisms such as Business Sustainability Groups can provide a useful platform for this type of engagement where farmers are already participating, but they should not be assumed to provide sufficient coverage for the full cohort of farms likely to require support under the revised NAP. Additional delivery capacity and mechanisms will therefore be required to ensure that affected farmers outside existing groups have access to equivalent opportunities. These group sessions should complement, rather than replace, subsequent farm-specific advice tailored to the circumstances of each business.

For many, this is likely to require a detailed, farm-specific “kitchen table” conversation. This need for farm-specific support is reinforced by the Office for Environmental Protection's review of the implementation of the 2019 NAP Regulations⁶, which identified a gap in farm-specific, on-farm nutrient-management support and highlighted evidence that targeted advisory support can improve nutrient management. The purpose should not simply be to explain the regulations, but to help the farmer identify a realistic pathway for meeting the requirements while maintaining an efficient and viable farming system.

The Science Sub-Group has similarly recommended that farms exhibiting particularly high phosphorus balances or low phosphorus-use efficiency should be prioritised

⁵ [NAP Technical Sub-Group, Technical Sub-Group Papers: Public Consultation on the Nutrients Action Programme 2027–2030 \(2026\)](#)

⁶ [Office for Environmental Protection, Review of implementation of the Nutrient Action Programme Regulations \(2019\) in Northern Ireland \(2026\).](#)

within targeted knowledge-exchange programmes and supported to develop tailored farm nutrient-management plans.

The options available will differ considerably between farms. Depending on individual circumstances, these may include participation in the Nutrient Stewardship Programme (NSP), changes to diet or concentrate use, slurry export, access to additional land, changes in nutrient management or a combination of measures. Farmers will need to understand not only whether an individual option is technically possible, but also how it interacts with other parts of the NAP and what the overall effect would be on the farm business.

Practical decision-support tools and worked examples will therefore be important. These should enable farmers and advisers to explore how livestock nitrogen production and loading, farm phosphorus balance, revised dairy cow nitrogen excretion values, slurry export, NSP participation and dietary changes interact on individual farms. Tools should support, rather than replace, good-quality advice. In many cases, the value will come from using the information as part of a structured discussion with the farmer, allowing different scenarios to be considered before significant decisions are made.

Until the final Programme and associated guidance are confirmed, any worked examples or decision-support resources should be clearly identified as illustrative and should not be presented as definitive compliance advice. More detailed farm-level decision support should follow once the regulatory requirements, sequencing and calculation methodologies are sufficiently clear.

Consistent advice and practical systems

The scale of this advisory requirement means that support will need to be timely, trusted and consistent across DAERA, CAFRE, industry and independent consultants. Farmers should receive consistent advice based on the same authoritative guidance, regardless of where they seek support. This will require clear guidance, appropriate training for those providing advice and effective communication between the organisations involved.

Meeting an advisory requirement of this scale and complexity is likely to require a significant increase in delivery capacity beyond existing knowledge-transfer and advisory provision, particularly during the early years of implementation. This will require sufficient numbers of appropriately trained advisers with the technical capability and practical tools to work through the interaction of nitrogen production and loading, farm phosphorus balance and the different compliance and adaptation options at individual farm level. It will also be important that advice is available early enough to influence decisions, rather than only once compliance deadlines are approaching.

The availability of suitably competent advisers to provide this support should also be assessed as part of implementation planning. There is a risk that the number of advisers in Northern Ireland with the necessary nutrient-management planning expertise will be insufficient if demand for detailed farm- and field-level plans increases substantially over a short period. The publicly available adviser directories do not provide a complete picture of current Northern Ireland capacity, and there does not appear to be a readily available assessment of the number of advisers able to provide this level of support, their geographical coverage or the additional capacity that would be required under the revised NAP. DAERA should therefore quantify the existing pool of suitably competent advisers and the likely future demand before implementation.

Qualifications such as the Fertiliser Advisers Certification and Training Scheme (FACTS) provide an important foundation in plant nutrition, fertiliser use and nutrient management. However, FACTS is a UK-wide qualification covering a range of crop systems and makes extensive use of the AHDB Nutrient Management Guide (RB209) as its nutrient-recommendation framework.⁷ Although grassland and forage crops are included within the qualification, this wider agronomic context is important in Northern Ireland, where over 90% of agricultural land is grassland and where some nutrient recommendations and legal limits applying under the NAP differ from, or supersede, the corresponding RB209 guidance. This is particularly relevant to the management of organic nutrients. Cattle slurry is a major nutrient source within Northern Ireland grassland systems, particularly for silage production, and its nutrient content can vary considerably between farms and slurry stores depending on factors such as livestock diet, dilution, storage and handling. Effective nutrient-management planning therefore requires an understanding not only of standard nutrient values and fertiliser recommendations, but also of how actual manure nutrient content and availability, application method, soil nutrient status and crop demand interact within grassland systems and within the requirements of the NAP. Advisers preparing nutrient-management plans under the revised NAP will therefore require both appropriate underlying agronomic competence and a detailed and current understanding of Northern Ireland-specific grassland systems and regulatory requirements.

Access to appropriate training is itself a potential constraint. Despite CAFRE Greenmount being listed as a BASIS-approved FACTS training provider, AgriSearch understands that FACTS training has not been delivered in Northern Ireland for several years.⁸ At the time of writing, anyone in Northern Ireland wishing to undertake the qualification therefore needs to access training in Great Britain, creating additional travel, accommodation, time and cost barriers and limiting the ease with which the pool

⁷ BASIS Registration Ltd., [FACTS Syllabus & Information: Fertiliser Advisers Certification and Training Scheme](#).

⁸ BASIS Registration Ltd., [FACTS Syllabus & Information: Fertiliser Advisers Certification and Training Scheme, list of BASIS Approved Trainers \(CAFRE Greenmount Campus\)](#).

of suitably qualified advisers in Northern Ireland can be expanded. Given the potential increase in demand for nutrient-management planning under the revised NAP, consideration should be given to re-establishing accessible FACTS training in Northern Ireland, alongside NAP-specific continuing professional development for advisers, so that sufficient advisory capacity is in place before demand arises.

Existing training provision should also be reviewed in light of the revised NAP. In particular, the Soil Nutrient Health Scheme nutrient-management training should be updated, where appropriate, to reflect the final NAP requirements and to help farmers understand how their soil-analysis results, nutrient-management planning and relevant NAP obligations interact. This should complement, rather than replace, the more targeted farm-specific support required for those farms most affected by the revised Programme.

Training alone, however, will not be sufficient. Farmers and advisers also need simple and practical nutrient-management planning tools that can translate soil-analysis results and farm information into usable field- and farm-level plans. These tools should support integrated nutrient planning, including appropriate lime requirements and soil-pH correction, rather than considering nitrogen, phosphorus and potassium inputs in isolation. An AgriSearch-commissioned review of nutrient-management planning tools in 2023⁹ identified opportunities to improve the functionality and usability of the existing CAFRE calculators, including more streamlined data entry, data sharing between calculations, farm-gate nutrient balances, mapping functionality and the ability to export and reuse data. More recently, through the DAERA-funded Tenfold NetZero programme, AgriSearch worked with Digital Catapult and Soil Benchmark to successfully demonstrate a farmer-friendly, map-based approach to manure and nutrient management using commercial-farm data¹⁰. Further deployment in Northern Ireland has, however, been constrained by the absence of a practical mechanism through which relevant farm-boundary and Soil Nutrient Health Scheme data can be accessed by authorised users in suitable machine-readable formats.

DAERA should therefore ensure that, subject to appropriate farmer permissions and data-protection safeguards, relevant farm-boundary and SNHS data can be securely accessed in interoperable, machine-readable formats for use within nutrient-management planning and decision-support systems. This would reduce duplicate data entry, allow farmers to make better practical use of information already collected through publicly funded programmes and support innovation in both public and appropriately authorised third-party nutrient-management tools. The objective should be a digital ecosystem in which farmers can use their own data easily and securely to

⁹[Bhogal, Nicholson and Williams, Review of Nutrient Management Planning tools available for use with forage crops in Northern Ireland \(AgriSearch/ADAS, 2023\)](#)

¹⁰ [Digital Catapult, Beyond the pilot: How Tenfold NetZero continues to shape agri-food innovation \(2026\)](#)

support better nutrient-management decisions, rather than requiring the same information to be repeatedly entered into separate systems.

AgriSearch notes that the Regulatory Impact Assessment anticipates that most NAP-related knowledge-transfer activity will be delivered through existing business-as-usual provision. Existing delivery channels should be used wherever possible, but the additional demand created by the revised requirements should be quantified and appropriately resourced before implementation. Existing knowledge-transfer mechanisms will have an important role but should not be assumed to provide sufficient coverage or capacity without an assessment of the additional demand created by the revised requirements.

DAERA should retain clear responsibility for providing the authoritative interpretation of the final NAP and its associated guidance. Industry, research organisations and independent advisers can complement this by helping farmers understand and apply that guidance through evidence-based tools, worked examples and practical support, but should not be placed in the position of filling gaps in official regulatory guidance.

AgriSearch also believes that new administrative and digital systems should be designed around the practical circumstances in which they will be used. In particular, any new digital system for recording organic manure movements should be piloted and user-tested with a representative range of commercial farms, advisers, contractors and processors before full implementation. This should test not only the technical operation of the system but also usability, verification arrangements, rural connectivity and the way in which information is shared between exporters and importers. The system should also provide a clear mechanism for resolving disputed or unverified movements before regulatory consequences arise where there is evidence that a genuine manure movement has taken place. More generally, the purpose, access, retention and permitted use of data collected through NAP digital systems should be clearly and transparently defined so that farmers and advisers understand how information provided for implementation of the Programme will be used. The system should facilitate legitimate nutrient redistribution between farms rather than inadvertently creating additional barriers to it. Digital systems should also be designed with accessibility and digital inclusion in mind, with appropriate assisted or non-digital routes available where required.

Focused catchments as learning and demonstration platforms

AgriSearch sees particular value in the proposed focused, catchment-based approach as a means of targeting advice, learning, demonstration and monitoring towards areas where these can have greatest impact. These areas provide an opportunity to create structured learning and demonstration platforms where farmers, advisers, researchers

and other stakeholders can work together. One-to-one advice, peer learning, commercial-farm demonstration and robust monitoring should be combined to test how different interventions perform under real farming conditions and to identify which approaches are most effective in different farm and catchment circumstances. The Science Sub-Group's analysis reinforces the importance of this integrated approach, recognising that effective phosphorus mitigation requires action not only on nutrient inputs and accumulated soil phosphorus, but also on critical source areas and the hydrological pathways through which nutrients are transferred to water.

Diagnostic assessment within focused catchments should consider all significant sources and pathways contributing to water-quality pressures, rather than agriculture in isolation. This should include, where relevant, wastewater infrastructure, septic tanks and other non-agricultural sources, with appropriate independent scientific expertise used where this would strengthen confidence in source identification and the targeting of interventions.

The knowledge generated through these focused areas should also be captured and shared more widely. Successful implementation of the NAP will depend not only on identifying technically effective measures, but on understanding how they can be incorporated into practical farming systems. Using commercial farms to demonstrate what works, what does not, and what adaptations may be required will help build farmer confidence and accelerate the transfer of evidence into practice.

Where new focused measures are piloted, the evaluation framework should be established at the outset, including appropriate baseline information, clearly defined outcomes and consistent monitoring. A key component of this approach should be the provision of timely and accessible catchment-level water-quality information, including near-real-time data where this can be provided robustly, to help farmers understand seasonal trends and the interaction between weather, farming practice and water quality. This would allow focused catchments to generate robust evidence not only on whether environmental indicators change, but on which interventions were adopted, how successfully they were implemented and under what farming circumstances they were effective.

The wider agri-food industry, including processors and existing sustainability and advisory programmes, can play an important role in supporting farmer engagement and adoption. Where appropriate, focused catchment initiatives should build on these existing relationships and supply-chain structures rather than creating parallel arrangements. Research organisations such as AgriSearch can support this activity through independent evidence, evaluation and knowledge exchange.

Applied research, innovation and demonstration

A coordinated evidence-to-practice pathway

Successful implementation of the revised NAP will require more than the introduction of new regulatory requirements. Farmers will need practical, proven options that can be incorporated into commercial farming systems while maintaining productivity and business resilience. AgriSearch therefore believes that controlled research, commercial-farm research, innovation, demonstration and knowledge exchange should be viewed as complementary parts of the same evidence-to-practice pathway, as highlighted in Figure 1.

Controlled research remains essential for establishing scientific principles, testing cause and effect and generating robust evidence. However, this needs to be complemented by research and demonstration under commercial farm conditions to understand how promising approaches perform within the complexity and variability of real farming systems. Effective knowledge exchange is then required to translate that evidence into practical actions that farmers and advisers can confidently adopt.

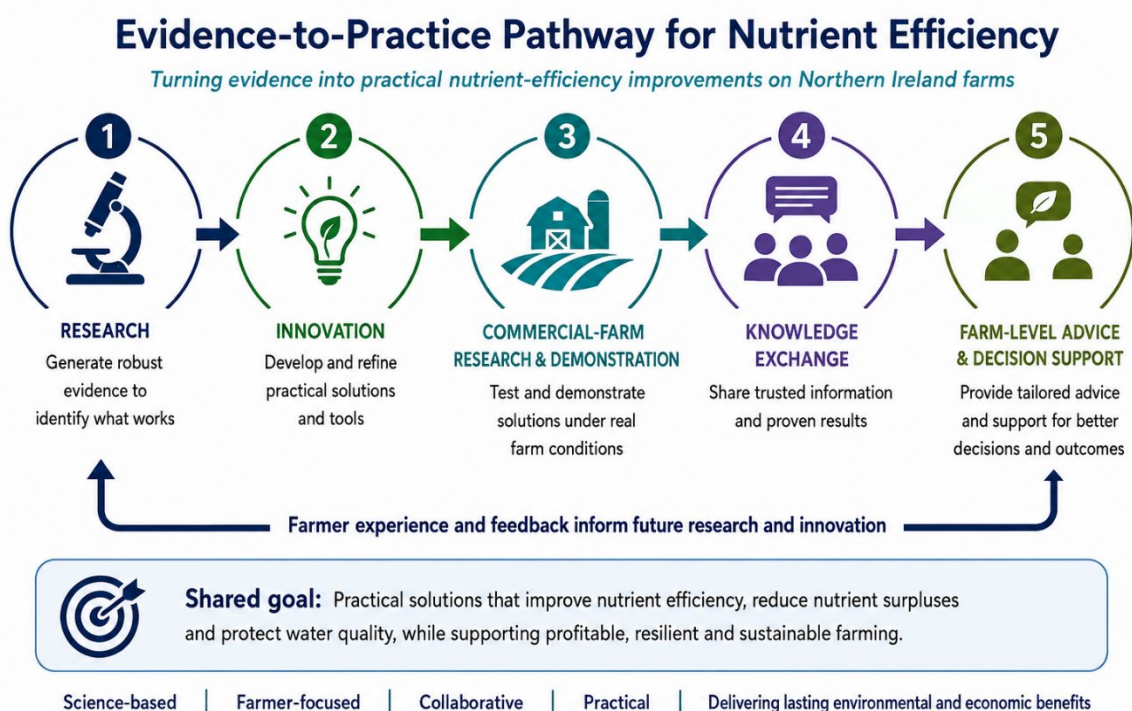


Figure 1. Evidence-to-practice pathway for nutrient efficiency

In this context, AgriSearch welcomes the proposed co-designed **Nutrient Efficiency Roadmap for Northern Ireland farming**. The Roadmap should provide a clear framework for identifying research gaps, prioritising commercial-farm research and demonstration, developing practical measures of nutrient efficiency and identifying knowledge-exchange needs. It should also help ensure that research, innovation and

advisory activity are coordinated around the practical challenges farmers will face in delivering improved nutrient efficiency under the revised NAP.

Building on the positive co-design approach established through the NAP Stakeholder Task and Finish Group, AgriSearch believes that there should be a structured process during the 2027–2030 Programme to identify and prioritise the research and evidence gaps that will need to be addressed ahead of the next NAP review. This should begin early enough to allow priority research to be commissioned, completed and evaluated before the next Programme is developed. AgriSearch would welcome the opportunity to contribute to this process alongside DAERA, AFBI, farmers, industry and other relevant research and technical expertise.

AgriSearch particularly supports the Technical Sub-Group's proposed emphasis on co-design and shared ownership of the Roadmap, and on mapping existing activity before developing new initiatives. Better coordination between research, education, advice, knowledge exchange and industry activity should help avoid duplication and ensure that available resources are focused on the areas where they can deliver the greatest improvement in nutrient efficiency.

Given AgriSearch's role in farmer-led research, commercial-farm research and knowledge exchange, AgriSearch would welcome the opportunity to contribute to the development of the Nutrient Efficiency Roadmap, subject to appropriate partnership arrangements and resources.

AgriSearch also welcomes the Science Sub-Group's recommendation for a farm systems research platform, coupled with on-farm studies. This aligns with a number of the priority research needs identified by AgriSearch below.

AgriSearch has already given detailed consideration to priority research and innovation needs and has identified a number of areas where further work would help address important evidence gaps, including:

- i. ***Optimal strategies to lower the overall Northern Ireland farm phosphorus balance.*** No analysis has yet been undertaken by DAERA to determine the cost-effectiveness of measures to reduce the overall Northern Ireland farm phosphorus balance, despite this being highlighted as a key industry priority. There is therefore an immediate priority to undertake a Marginal Abatement Cost Curve (MACC) analysis to identify the most effective and least-cost measures for reducing phosphorus balance. This should include analysis of a wide range of measures, including reducing phosphorus inputs through fertiliser and feed; increasing phosphorus offtake in crops and animal products; and increasing phosphorus removal through manure processing and export opportunities.

- ii. ***Opportunities and strategies to lower soil phosphorus status in high-P soils through optimising soil pH, maximising grass growth and utilisation.*** Research should identify strategies to effectively utilise (“mine”) phosphorus in high-P soils through improved soil nutrient management, including the use of grass species or varieties with high phosphorus uptake potential, coupled with improved grassland management and utilisation. This need was previously highlighted in the SALMS Report. Given the widespread occurrence of sub-optimal soil pH identified through the Soil Nutrient Health Scheme, the interaction between soil acidity, nutrient availability, grass production and phosphorus offtake should form an important part of this work.
- iii. ***Farm systems research to demonstrate optimal nitrogen and phosphorus management.*** A farm systems research platform, coupled with on-farm studies, should be established to demonstrate optimal nitrogen and phosphorus management within farming systems that maintain farm output and profitability. This research should include opportunities to further develop and improve nutrient management on Nutrient Stewardship Farms (previously known as Derogated Farms).

Feeding and whole-farm nutrient efficiency

One important area for further work is the practical implementation of **lower crude protein diets**. Reducing excess dietary protein has the potential to improve nitrogen-use efficiency, but changes must be implemented without adversely affecting animal health or performance. Further research should therefore include issues such as amino acid balance and the potential role of protected amino acids, alongside commercial-farm research and demonstration to establish how lower crude protein feeding strategies can be applied successfully under Northern Ireland conditions.

Further work will also be required on **phosphorus-efficient feeding**. Considerable progress has already been made in reducing unnecessary phosphorus inputs through concentrate feeds, and many of the more straightforward opportunities have already been taken. Future improvements are therefore likely to require a greater focus on the phosphorus contribution from the total diet, particularly forage.

Previous AgriSearch co-funded research¹¹ identified considerable variation in the phosphorus content of forage, with grass silage samples ranging from approximately 1.4 to 3.9 g P/kg dry matter (DM) and grazed grass from 2.9 to 5.2 g P/kg DM. While these data are now more than fifteen years old, they illustrate the importance of accurately

¹¹ [AgriSearch, Reducing Phosphorus Levels in Dairy Cow Diets, Booklet 18 \(2010\)](#)

understanding the contribution of forage phosphorus to the total diet. Changes in farming practice since that work was undertaken, including reduced phosphorus fertiliser use and increased adoption of multi-cut silage systems, strengthen the case for updating this evidence base. Research should examine both the phosphorus content and availability of modern conserved forages and grazed grass, how these vary between farms and cutting systems, and how this information can be incorporated into practical ration formulation and whole-farm phosphorus balance. The objective should be to reduce unnecessary phosphorus inputs while maintaining animal performance and avoiding the risk of under-supplying phosphorus. Consideration should also be given to whether practical and cost-effective approaches can be developed for routine estimation or analysis of forage phosphorus content to support more precise on-farm ration formulation.

Alongside improved information on the phosphorus content of forage, farmers and nutritionists also require accurate and readily available information on the phosphorus content of concentrate feeds. AgriSearch therefore supports the principle that phosphorus content should be routinely and clearly declared for concentrate feeds, using consistent, quality-assured methods. Taken together, reliable forage and concentrate information would allow diets to be formulated more precisely against animal requirements and would improve the robustness of whole-farm phosphorus balance calculations.

The interaction between nutrient-management rules and the production of home-grown feed should also be considered at whole-farm level. Where home-grown cereals or other feeds can substitute for purchased concentrate and reduce phosphorus imports, implementation arrangements should avoid inadvertently discouraging such nutrient-efficient farming-system responses, provided associated water-quality risks are appropriately managed. More broadly, the potential effects of agricultural support schemes on feeding, stocking and land-use decisions should be considered so that progress towards one policy objective does not inadvertently increase nutrient imports or undermine wider nutrient-efficiency objectives.

Research and demonstration should also examine how nutrient-efficient grassland and forage systems can contribute to reducing farm nutrient surpluses. The Science Sub-Group has identified a need for research into strategies for lowering soil phosphorus status through maximising grass growth and utilisation, improved soil nutrient management and the use of grass species or varieties with high phosphorus uptake potential. AgriSearch believes this should include evaluation of different forage and cutting systems, including multi-cut silage systems, to establish how cutting frequency, annual forage yield, nutrient inputs and soil phosphorus status influence phosphorus offtake and the rate at which high-P soils can be drawn down.

Soil pH should also be recognised as a fundamental component of nutrient-use efficiency. Published results from the Soil Nutrient Health Scheme indicate that sub-optimal soil pH is widespread across Northern Ireland agricultural land. AFBI reported in December 2025¹² that soil pH averaged 5.8 across Zones 1, 2 and 3 of the Scheme, although there was considerable variation by farm type and intensity, and noted that for many farms average pH was below the optimum for maximising nutrient uptake. Sub-optimal soil pH can materially reduce the agronomic response to both manufactured fertiliser and organic manures and constrain grass production. In a predominantly grassland farming system, correcting soil acidity therefore has the potential not only to improve utilisation of applied nitrogen, phosphorus and potassium, but also to increase production of home-grown forage and reduce reliance on purchased concentrate feeds, thereby reducing phosphorus imports onto livestock farms. Taken together, the available evidence suggests that the potential economic and nutrient-balance benefits could be substantial, reinforcing the case for a detailed analysis using field-level SNHS data and representative commercial-farm systems.

The scale of this opportunity should be quantified using the full Soil Nutrient Health Scheme dataset. DAERA and AFBI should assess the distribution of soil pH by soil type, land use and farming system and evaluate the potential effects of correcting sub-optimal pH on nutrient-use efficiency, grass production and utilisation, purchased feed requirements, farm-gate phosphorus balance and farm profitability, together with the practical barriers to uptake, the cost and timing of corrective liming, and the capacity of the lime supply and spreading sector to deliver any substantial increase in demand. This would help establish whether targeted correction of soil acidity represents one of the most cost-effective measures available for improving both agricultural productivity and nutrient balance.

AgriSearch notes the Science Sub-Group's recommendation that implementation of protected urea should be accompanied by proportionate, light-touch monitoring as uptake increases. AgriSearch supports continued evidence review and monitoring where knowledge gaps remain. Protected urea should be understood as an ammonia-mitigation and nitrogen-efficiency measure within wider nutrient management, rather than as a solution to underlying farm nutrient surpluses.

¹² [Agri-Food and Biosciences Institute \(AFBI\), SNHS – Soil sampling update and results \(5 December 2025\).](#)

Manure processing, technology and innovation

Slurry separation, manure processing and nutrient redistribution or export are also likely to be important components of the range of options available to some farms, particularly where nutrient surpluses cannot readily be addressed through changes in feeding or land management alone. A number of potential solutions are still developing through initiatives such as pilot projects under the Sustainable Utilisation of Livestock Slurry (SULS) programme and will require further research, investment and practical commercial-scale evaluation before their contribution can be fully understood.

Mechanical separation can also change the practicality of nutrient redistribution by concentrating a greater proportion of phosphorus within a smaller solid fraction that is more readily transported, while producing a lower-dry-matter liquid fraction that may be easier to apply using LESSE. The extent of nutrient partitioning and the agronomic characteristics of the resulting fractions will vary with slurry type and processing technology and should therefore be supported by appropriate analysis and validation.

The published Technical Sub-Group papers indicate that achieving the proposed scale of nutrient removal through the SULS programme within the current project timeframe will be challenging and will depend on progress with ammonia mitigation, planning approvals and wider cross-departmental action. Where NAP implementation assumptions rely on SULS or other nutrient-processing capacity becoming available, DAERA should identify the relevant delivery milestones and dependencies and ensure that implementation sequencing and transition arrangements can be adjusted if those pathways are not available within the anticipated timeframe. Implementation of the NAP should therefore be aligned with the demonstrated commercial readiness of nutrient-processing and export options.

More broadly, the design and evaluation of nutrient-management pathways should recognise interactions between phosphorus, nitrogen, ammonia emissions, greenhouse-gas emissions and water quality. Policy and regulatory arrangements should, as far as practicable, avoid a situation in which action intended to address one environmental pressure inadvertently prevents technologies or management changes capable of delivering wider environmental benefits.

Anaerobic digestion can provide an important processing and energy-recovery route. Because nitrogen and phosphorus are retained in the resulting digestate, its contribution to reducing regional nutrient surpluses depends on effective downstream separation, recovery and, where appropriate, export to markets where those nutrients are required.

AgriSearch also notes the proposed 100 kg N/ha/year limit for processed organic fertilisers. Processed nutrient products can vary substantially in their nutrient content, nitrogen availability, phosphorus concentration and agronomic characteristics

depending on the feedstock and processing technology used. The evidence base supporting the proposed limit should therefore be transparent and kept under review as experience and scientific evidence develop. Where products can be robustly characterised in terms of nutrient content and availability, consideration should be given to whether a nutrient- and risk-based route could allow their use according to demonstrated crop requirement without increasing risks to water or air. This would help ensure that appropriately processed recovered nutrients can substitute for manufactured fertiliser without undermining environmental safeguards.

AgriSearch believes it is important that promising technologies are evaluated not simply on their technical ability to process or redistribute nutrients, but also on their agronomic performance, operating requirements, economics and practicality within commercial farming systems. Where research and demonstration establish that nutrient-processing or low-emission technologies can deliver worthwhile environmental benefits, those environmental and commercial benefits will only be realised if proven solutions have a practicable route through the wider regulatory and planning framework to commercial adoption.

AgriSearch also welcomes the proposed performance-based approach to defining Low Emission Slurry Spreading Equipment (LESSE), which reflects the recommendation of the NAP Science Sub-Group that new technologies should be capable of recognition where they can scientifically demonstrate the required emissions-reduction performance. A performance-based standard has the potential to encourage continued innovation rather than restricting farmers to a fixed list of existing technologies. For this approach to work effectively, however, innovators must have access to an achievable and scientifically robust route through which new equipment, modifications to existing equipment or alternative approaches can be independently tested and validated against the proposed ammonia emissions-reduction performance standard.

Such evaluation should consider not only emissions performance but also the agronomic and practical consequences of using the technology under commercial Northern Ireland conditions. Factors such as slurry distribution, grass contamination, operating conditions and compatibility with existing farm equipment may all influence whether a technically effective innovation can be adopted successfully in practice.

Generating robust emissions data can be technically demanding and costly, particularly for smaller engineering businesses or emerging technologies. AgriSearch therefore believes that consideration should be given to appropriate research and innovation funding to support the independent testing and validation of promising new or modified slurry-spreading technologies. This would help ensure that the cost of generating the necessary scientific evidence does not itself become a barrier to innovation.

Soil, weather and measurement

As precision farming and environmental monitoring continue to develop, further research should examine whether information on soil conditions, weather forecasts, grass growth and crop nutrient demand can support more risk-based approaches to slurry application. The current regulatory framework uses calendar dates and defined rules, but future NAP reviews should be informed by research into whether reliable decision-support approaches can better identify when conditions are suitable or unsuitable for nutrient application. Any future movement towards more risk-based decision-making would need to be underpinned by robust evidence and practical systems capable of operating consistently at farm level.

This research should also consider how a changing climate may alter nutrient-management risks and the practical operation of farming systems. More frequent periods of intense rainfall, drought or other extreme conditions may affect crop nutrient uptake, the timing and risk of manure applications, livestock housing periods, slurry volumes and reliance on purchased feeds. Climate-driven changes in nutrient-loss pathways may also confound the interpretation of water-quality trends and should therefore be taken into account within monitoring and evaluation. Decision-support approaches should therefore be capable of evolving as the evidence on climate-related nutrient risks develops, so that future NAP reviews can take account of changing rather than historic farming and climatic conditions.

The value of the Soil Nutrient Health Scheme should also be maintained beyond the initial sampling programme. If changes in soil phosphorus status, soil pH and other indicators are to inform nutrient-management decisions and provide evidence of progress over successive NAP periods, farmers and policymakers will require access to suitably timed repeat soil analysis.¹³ AgriSearch therefore considers that arrangements should be put in place for the continuation and renewal of the SNHS, including an appropriate programme of repeat sampling, so that changes in soil condition can be assessed consistently over time. Particular attention will be required for farms sampled during the earliest phases of the Scheme, where the original results will begin to become increasingly dated during the 2027–2030 NAP period.

AgriSearch believes that the measurement systems used to demonstrate progress must themselves be robust. Where the *Soil Phosphorus Protocol* is used to assess changes in farm soil phosphorus status, repeat sampling, laboratory analysis and interpretation should follow consistent, quality-assured procedures. Clear technical guidance will be needed on sampling methodology and on how changes in area-weighted soil phosphorus are interpreted.

¹³ [Agri-Food and Biosciences Institute \(AFBI\), *The Importance of a Farm Nutrient Management Plan* \(4 August 2022\).](#)

This is particularly important where relatively small changes over time may influence the assessment of farm progress. The system should be capable, as far as practicable, of distinguishing genuine changes in soil phosphorus status from variation arising through sampling, laboratory analysis or normal spatial variability within fields. Confidence in the underlying measurements will be essential for both farmers and policymakers if soil phosphorus trends are to be used as evidence of progress under the revised NAP.

AgriSearch also supports the Science Sub-Group's recommendation for more frequent review and independent verification of the nutrient-content data underpinning national nutrient-balance calculations. Where regulatory requirements and future policy reviews depend upon these calculations, the underlying input and output coefficients should be maintained as a current, transparent and quality-assured evidence base.

Overall, AgriSearch believes that the revised NAP should be accompanied by a coordinated programme of research, innovation, commercial-farm demonstration and knowledge exchange. The objective should be not simply to identify what is scientifically possible, but to establish what works, under what circumstances, and how it can be adopted successfully on Northern Ireland farms.

Conclusion

AgriSearch considers that, while important implementation details remain to be resolved, the revised NAP provides a substantially more practical and implementation-focused basis for improving nutrient management and water quality than the proposals consulted upon in 2025. The greater emphasis on nutrient-use efficiency, targeted action, phased implementation, advice and practical delivery is welcome and should improve the prospects of achieving meaningful change at farm level.

Successful implementation of the revised NAP will depend first and foremost on partnership between government, farmers, advisers, researchers and the wider agri-food industry. Farmers need to understand what the revised requirements mean for their individual businesses and, importantly, have access to realistic, evidence-based and practical options for responding to them. Advice, research, innovation, demonstration and knowledge exchange should therefore be central to delivery, with regulation forming part of a wider package of measures rather than being relied upon in isolation.

For those farms most affected, this will require a clear implementation pathway and managed transition, with sufficient time to establish their position, understand how the different measures interact and consider the options available to them. Farmers will also require trusted farm-specific advice and practical tools to support decision-making, backed by sufficient advisory capacity to provide this support at the scale and

within the timeframe required. Importantly, the range of adaptation options available to farmers must develop alongside the regulatory requirements, so that farmers are not expected to rely on technologies, infrastructure or nutrient-processing solutions that are not yet practically available at commercial scale. This will require coordinated progress not only within the NAP itself, but also in related areas such as ammonia policy, planning and SULS, where these determine whether necessary infrastructure and nutrient-processing options can be delivered in practice.

The revised NAP should therefore be supported by a coordinated programme of advice, research, innovation, commercial-farm research and demonstration, and knowledge exchange. Continued research will be needed both to develop and refine practical solutions and to ensure that the evidence, measurement systems and decision-support approaches underpinning the Programme remain robust. Commercial-farm research, demonstration and knowledge exchange will be essential to establish how solutions perform under Northern Ireland conditions and to support their wider adoption. The proposed Nutrient Efficiency Roadmap provides an important opportunity to coordinate this activity, identify and prioritise emerging evidence and research needs, and ensure that innovation is translated effectively into farm practice. This should be complemented by a structured co-design process during the 2027–2030 period to ensure that key knowledge gaps are addressed early enough to inform the development of the next NAP.

AgriSearch remains committed to playing a constructive role in this process. Given its experience in farmer-led research, commercial-farm research and knowledge exchange, AgriSearch would welcome the opportunity to work with DAERA, CAFRE, research organisations and industry partners to support the practical implementation of the revised NAP, subject to appropriate resources and partnership arrangements.

Key references and evidence sources

Agri-Food and Biosciences Institute (AFBI) (2022). *The Importance of a Farm Nutrient Management Plan*. 4 August 2022.

Agri-Food and Biosciences Institute (AFBI) (2025). *SNHS – Soil sampling update and results*. 5 December 2025.

Agri-Food and Biosciences Institute (AFBI) (2026). *Soil Nutrient Health Scheme*.

AgriSearch (2010). *Reducing Phosphorus Levels in Dairy Cow Diets*. AgriSearch Booklet 18, June 2010.

AgriSearch (2025). *Strategic Statement 2025–2030: Equipping farmers to face future challenges*.

Animal and Plant Health Agency (2026). *Approved finishing units for cattle: application and approved premises*. Updated 3 July 2026.

BASIS Registration Ltd. (n.d.). *FACTS Syllabus & Information: Fertiliser Advisers Certification and Training Scheme*.

Bhogal, A., Nicholson, F. and Williams, J. (2023). *Review of Nutrient Management Planning tools available for use with forage crops in Northern Ireland*. Prepared for AgriSearch by ADAS, October 2023.

Department of Agriculture, Environment and Rural Affairs (DAERA) (2024). *Nutrients Action Programme Implementation Report for 2020–2023*. July 2024.

Department of Agriculture, Environment and Rural Affairs (DAERA) (2025). *Public Consultation on the proposed Nutrients Action Programme for 2026–2029*. May–July 2025.

Department of Agriculture, Environment and Rural Affairs (DAERA) (2025). *Review of the 2019 Nutrient Action Programme Regulations*. June 2025.

Department of Agriculture, Environment and Rural Affairs (DAERA) (2026). *Public Consultation on the proposed Nutrients Action Programme for 2027–2030*. Published 29 June 2026.

Department of Agriculture, Environment and Rural Affairs (DAERA) (2026). *Regulatory Impact Assessment (RIA) – NAP 2027–2030*.

Department of Agriculture, Environment and Rural Affairs (DAERA) (2026). *Minister Muir announces revised criteria for Alternative Control Herds for cattle in Northern Ireland*. 22 July 2026.

Department of Agriculture, Environment and Rural Affairs (DAERA) (n.d.). *TB Movement Restrictions.*

Digital Catapult (2026). *Beyond the pilot: How Tenfold NetZero continues to shape agri-food innovation.* Case study, 24 March 2026.

Expert Working Group on Sustainable Land Management (2016). *Delivering Our Future, Valuing Our Soils: A Sustainable Agricultural Land Management Strategy for Northern Ireland.*

NAP Stakeholder Task & Finish Group (2026). *Nutrients Action Programme (NAP) 2027–2030: Stakeholder Task & Finish Group – Report to the Minister for Agriculture, Environment and Rural Affairs.* Final Report, June 2026.

NAP Science Sub-Group (2026). *DAERA Nutrients Action Programme 2027–2030: Science Sub-Group Process Summary and Response Papers.*

NAP Technical Sub-Group (2026). *Technical Sub-Group Papers: Public Consultation on the Nutrients Action Programme 2027–2030.*

Office for Environmental Protection (2026). *Review of implementation of the Nutrient Action Programme Regulations (2019) in Northern Ireland.* April 2026.

AgriSearch
Innovation Centre
Large Park
Hillsborough
County Down
BT26 6DR

T. 028 9244 6101

www.agrisearch.org



The Northern Ireland Agricultural Research and Development Council (T/A AgriSearch) is a Company Limited by Guarantee Reg No. NI35855 Registered with the Charity Commission for Northern Ireland NIC102341.