



INTERIM ECONOMIC IMPACT ASSESSMENT OF PROPOSED MEASURES WITHIN DAERA'S NUTRIENTS ACTION PROGRAMME 2026 – 2029

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Foreword

When the Nutrients Action Programme was launched in early May it quickly became apparent that these proposals represent a major shift in policy from DAERA which could have a major negative impact on the agri-food sector and the wider Northern Ireland economy.

Working in conjunction with stakeholders from across industry, AgriSearch developed a NAP Impact Calculator which was launched in early June. This calculator was used to collect data from a wide range of farming systems right across Northern Ireland. With the assistance of arable and horticulture representatives from the Ulster Farmers' Union the proportion of land needed for buffer strips was quantified.

At the outset, AgriSearch would like to acknowledge all those from across the NI agri-food industry who provided this data. Without their assistance this exercise would not have been possible. We would also like to acknowledge, in particular, the invaluable cooperation of Frances Titterington from the Livestock and Meat Commission for Northern Ireland who has helped greatly with the statistical analysis. We would also like to acknowledge the assistance of Professor Thia Hennessy (UCC) who provided expert advice and reviewed the report.

This exercise has been expedited by necessity to enable us to have a report to submit by the deadline for responses to the NAP consultation. However, the initial findings underline that a full independent economic analysis needs to be undertaken. It is concerning that such an analysis was not undertaken by DAERA and included in the NAP consultation documentation.

The economic analysis presented here takes only a surface look at the impact of the NAP proposals, concentrating on the impact of Phosphorus (P) Balances and buffer strips. Other additional costs have not been included. This analysis assumes that farms will still operate but with significantly reduced stock. Such reductions in livestock will likely make the vast majority will economically unviable and unable to generate sufficient family farm income and meet their existing financial commitments (Northern Ireland farms have some £960M borrowed in loans and overdrafts). As such the figures contained in this economic impact assessment should be viewed as a conservative estimate.

At the levels of stock reductions needed to comply with the NAP proposals most of the processing facilities would become unviable and so the economic consequences would proceed up and down the agri-food supply chain to have a devastating impact on the wider Northern Ireland economy.

We understand that a second consultation process on revised proposals will follow in due course. It is imperative that a comprehensive and independent analysis of the economic impact of these revised proposals is carried out in advance of the launch of any further consultation process.

Professor Gerry Boyle
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Executive Summary

The Nutrients Action Programme (NAP) proposals for 2026–2029, introduced by DAERA, represent a significant policy shift, with potentially serious economic consequences for Northern Ireland’s agri-food sector. This report presents a preliminary economic impact assessment based on data from 212 farms across Northern Ireland.

Total Estimated Economic Impact of imposing P Balances and Buffer Strips

- **£1.03 billion** per annum under the 10kg/ha limit.
- **£1.56 billion** per annum under the 8kg/ha limit.

Table 1 Breakdown of Financial Impact per sector (per annum) on implementation of the 10kg/ha and 8kg/ha Phosphorus balance and buffer strips

	10kg/ha Limit	8kg/ha Limit
Pigs	£72,880,124	£77,090,144
Poultry (Layers)	£318,135,000	£330,708,000
Beef	£174,276,951	£219,402,234
Sheep	£27,555,006	£34,689,784
Dairy	£433,983,550	£897,897,000
Arable, Potatoes & Vegetables	£3,883,091	£3,833,091
TOTAL	£1,030,713,722	£1,563,620,253

Severe Economic Disruption: The proposed P balance limits of 10kg/ha by 2027 and 8kg/ha by 2029 would necessitate drastic reductions in livestock numbers or significant land acquisition, both of which are economically unsustainable for many farms.

Debt Vulnerability: With approximately £960 million in farm loans and overdrafts, and estimated annual repayments exceeding £200 million, many farms—particularly larger, more intensive operations—face heightened financial risk.

Land Market Disruption: Increased demand for land to meet P balance targets could inflate land prices and rents, disadvantaging smaller and less intensive farms and arable farms.

Processing Sector Viability: Reduced livestock numbers threaten the viability of processing facilities, potentially triggering a cascading economic downturn across the supply chain.

Social and Wellbeing Impact: The uncertainty and financial strain linked to the NAP proposals are likely to significantly affect farmer wellbeing and mental health, especially in already isolated rural communities.

Policy Gaps: The absence of a full independent economic analysis in the NAP consultation is a critical oversight.

Methodology

The 'NAP Farm Impact Calculator' was developed by AgriSearch to help farmers assess the impact of the measures proposed for the 2026-2029 DAERA Nutrients Action Programme. In addition to nitrogen loading and fertiliser allowance, the calculator works out the farm's P balance and indicates how many extra hectares or the extent of the stocking rate cut needed to achieve the 10kgP/ha proposed from 2027 and the 8kgP/ha limit proposed from 2029 (*see Appendix A for further information*).

The tool was launched on 2nd June along with a training webinar available online to assist farmers in filling in the calculator accurately and advice provided on where the respondents' data could be found. Two hundred and twelve surveys were returned via email. To ensure a robust sample, the sampling framework for the DAERA farm business survey⁵ was followed (Table 2). Although data was stratified for farm type, it was not possible to stratify within farm type due to the variation in methodology and timeframes in DAERA statistical reports. However, industry stakeholders were consulted to ensure the farms included in analysis were representative of the population.

Table 2 A breakdown of farms sampled in the DAERA Farm Business Survey (2023)⁶ compared with the sample surveyed

Farm Type	Population	Sample in FBS	Surveyed
Pigs	129	7	12
Poultry	519	0	8
Dairy	2512	78	114
Cattle and Sheep (LFA)*	4268	70	66
Cattle and Sheep (lowland)*	1728	22	
Mixed	337	11	11
All	9493	188	211

This economic analysis takes only a surface look at the impact of the NAP proposals, concentrating on the impact of Phosphorus (P) Balances and buffer strips. For livestock farms, P Balance was determined and the resultant percentage in stock required to achieve proposed 10kg/Ha and/or 8kg/Ha P balances. Where the farm had a negative P balance, or the calculator allowed an increase in livestock at the proposed 10kg/Ha and/or 8kg/Ha P balances, it was assumed that other limiting factors on farm had influenced the stock numbers and the change in livestock figures was set to zero. The

⁵ Farm Incomes in Northern Ireland 2022-23

⁶ *As the land type of Less favoured Area (LFA) or Low land was not collected, 'Cattle and Sheep' were merged into one category

average change in stock for each livestock type was used in estimations of economic impact.

The NAP Impact Calculator was developed for livestock and poultry farms only, it was recognised that in order to quantify the impact on the arable and horticulture industries in NI a different methodology was needed. This was referred to the UFU Seeds and Cereals, Potatoes, Fruit and Vegetable Committees for expert consideration. They discussed the issue and each undertook an assessment on their own farms as to how much land would be lost to the 3 metre buffer strips which would be required alongside water courses. It was estimated that an average of 2% of arable land would be lost to these buffer strips.

Other additional costs such as the purchase of low emission slurry spreading equipment (LESSE), reduction in N fertiliser usage, and administrative costs associated with the proposed new databases and record keeping requirements have not been included.

Farm business type and size were determined using the methodology published in the Farm Incomes survey 2022-23⁷ (*for further information see Appendix B*).

For the purpose of the economic impact assessment, gross margins have been used. These are taken primarily from the published DAERA farm business survey data (*for further information see Appendix C*). It is considered appropriate to consider the effect at a gross margin level only as farmers will require a significant period of adjustment before overhead costs can be reduced.

For the purposes of this analysis, the Type 2 Gross Value Added (GVA) multiplier published by EY in a report undertaken for the Northern Ireland Food and Drink Association in 2021⁸ has been used (*for further information see Appendix D*) to quantify the economy-wide effects of the economic shock to the agricultural sector. The multiplier used is the same across all of the sub-sectors of agriculture.

In this analysis the GVA multiplier is applied to the estimated loss in gross margin from each sub-sector and aggregated to estimate the economy wide impact. GVA is a measure of the output of a sector less intermediate consumption, i.e. cost of raw inputs, gross margin, while similar to GVA, is a profit measure mostly used at the business level. While GVA and gross margin are not equivalent, based on the data available for this analysis, gross margin is used as the best available measure of GVA to undertake the multiplier analysis.

⁷ Farm Incomes in Northern Ireland 2022-23

⁸ Food for thought: The Food and Drink industry, an inclusive sector at the heart of Northern Ireland EY (2021)

This report aims to give an overview of the economic impact of the buffer strips and the stock reduction required to achieve the proposed P balances on farm both at a sectoral and economy wide level.

Further technical information is included in the appendices.

Sectoral Impacts

Pig farms

There were 12 pig farms, of which the majority (11) were in the “Large” farm category.

Table 3 Breakdown of distribution of pig farms surveyed

	Min	Max	Mean	SD
Land area (Ha)	54	244	144	58.41
P surplus (kg)	2,440	43,669	10,261	11,322.85
P balance / ha	16	193	68	47.37
Land needed (ha) to get below 10kgP/ha	155	4141	995	1065.85
or Stock Reduction	38.5%	94.8%	77.9%	15.64%
Land needed (ha) to get below 8kgP/ha	94	5233	1025	1423.29
or Stock Reduction (%)	50.8%	95.9%	82.4%	12.51%

Table 4 NI Pig Sector Gross Margin

Pig Slaughtered in NI⁹ (n)	1,496,896
Gross Margin¹⁰ (£/head)	£25
Total NI Gross Margin	£37,422,400

Table 5 Impact of P Balance Limits on NI Pig Sector

	10 kgP/ha	8kgP/ha
Stock reduction needed	78%	82%
Reduction in Gross Margin	£29,152,050	£30,836,058
Multiplier	2.5	2.5
Total Economic Impact	£72,880,124	£77,090,144

⁹ Source Pig(IS (PIG Information System)

¹⁰ Estimate of Gross Margin provided by Dr Violet Wylie (based on 2024 AHDB production costs and adjusted by NI price per kg)

Poultry farms (Layers)

Only layers have been included in this analysis as steps are being taken to process and remove most broiler litter outside the agricultural system within the next few years.

There were eight layer farms, of which three were classified as “Small”, and five were “Large”

Table 6 Breakdown of distribution of layer farms surveyed

	Min	Max	Mean	SD
Land area (Ha)	16	144	54	41.26
P balance (kg)	2,192	5,077	3,450	1,216.2
P balance / ha	25	193	92	58.08
Land needed (ha) to get below 10kgP/ha	162	443	291	121.30
or Stock Reduction	60.5%	94.8%	83.5%	12.12%
Land needed (ha) to get below 8kgP/ha	220	570	377	150.29
or Stock Reduction (%)	68.4%	95.8%	86.8%	9.70%

Note that the layers sector has been expanding. The latest available official population figures are from the June 2024 DAERA Census which indicated a population of 6.4 million. This is estimated to rise to around 9 million by the end of this financial year. Thus, a relatively conservative figure of 8 million has been used for calculations. It should also be noted that the ADAS gross margin is from the conservative end of the scale. This has been adapted for Northern Ireland, from data provided by the Poultry Industry Federation of Northern Ireland by adjusting the price to current Northern Ireland prices. ADAS also include capital and interest payments and land rental value in their gross margins which is not standard practice for Northern Ireland farm business survey gross margins.

Table 7 NI Layer Sector Gross Margin

Layers in Northern Ireland (n)	8,000,000
Gross Margin (£/head)	19.05
Total NI Gross Margin	£152,400,000

Table 8 Impact of P Balance Limits on NI Layer Sector

	10 kgP/ha	8kgP/ha
Stock reduction needed	84%	87%
Reduction in Gross Margin	£127,254,000	£132,283,200
Multiplier	2.5	2.5
Total Economic Impact	£ 318,135,000	£330,708,000

Beef and Sheep

There were 66 Beef and Sheep respondents, of which the majority (45) were “small”, “very small or hobby”. There were eight “Large” Beef and Sheep farms included.

Table 9 Breakdown of distribution of beef and sheep farms surveyed

	Min	Max	Mean	SD
Land area (ha)	13	408	97	73.44
P balance (kg)	-369	12,278	1,346	2,140.34
P balance / ha	-5	170	16	28.48
Land needed (ha) to get below 10kgP/ha	-257	820	38	192.32
or Stock Reduction	0%	94.1%	22.4%	29.88%
Land needed (ha) to get below 8kgP/ha	-322	1,025	47	240.40
or Stock Reduction (%)	0%	95.3%	28.2%	32.53%

Analysis of the Beef & Sheep sector is particularly challenging as there a wide variety of enterprises and published gross margins, and the same animals could go through several different farms.

To avoid double counting, the total kilograms slaughtered have been used. This figure has been multiplied by the average price received over the last 12 months. To convert this to a gross margin, the average gross margin as a percentage of turnover for all published enterprises in the sector has been applied.

To avoid duplication for animals from the dairy sector, the total kilograms of cows slaughtered have been multiplied by 0.41 (the proportion of suckler cows in the total cow population of Northern Ireland at the June 2024 census; 226,000 beef cows versus 325,325 dairy cows).

Beef Enterprises

Table 10 Gross Margin as a Percentage of Output for Lowland NI Beef Enterprises¹¹

	Output (£)	Gross Margin (£)	Gross Margin as a percentage of Output
Dairy Beef Stores (per/Ha)	1,456	502	34%
Dairy beef to Finish (per Ha)	1,874	725	39%
Beef Calves Reared & Sold as Stores	1,236	510	41%
Beef Calves Reared to Finish	1,700	796	47%
Finishing Purchased Stores	1,996	502	25%
LL Suckler Cows	592	265	45%
Average			39%

¹¹ Source DAERA Statistics (Note: As area based subsidy schemes are decoupled from production and not linked to any particular enterprise, their associated payments are not included in enterprise output. Therefore, the Gross Margin results presented exclude subsidies)

Table 11 Northern Ireland Beef output¹² (kg Cold weight) (July 2024 - June 2025)

		Total Kg Primestock (Beef)	Total Kg (Cows)
2024	July	8,319,721	2,541,642
	August	11,369,015	3,409,731
	September	10,791,394	2,781,973
	October	11,916,558	3,150,337
	November	14,246,001	4,345,472
	December	9,637,728	2,588,397
2025	January	8,319,721	2,623,859
	February	11,369,015	2,972,776
	March	10,791,394	3,337,830
	April	11,916,558	2,373,271
	May	14,246,001	2,764,415
	June	9,637,728	2,461,412
Total		132,560,834	35,351,117
Estimated kg beef cows (41.5%)			14,493,958

Table 12 Average price of Northern Ireland Beef¹³ (p/kg) (July 2024 - June 2025)

		Avg. Price (Primestock Beef)	Avg. Price (Cows)
2024	July	468.5	314.5
	August	475.6	311.9
	September	481.6	310.8
	October	487.1	314.0
	November	492.9	316.8
	December	507.9	332.2
2025	January	530.4	369.6
	February	586.7	433.3
	March	628.6	471.1
	April	672.7	514.8
	May	665.8	513.2
	June	633.7	493.4
Average		552.6	391.3

¹² Source: LMC

¹³ Source: LMC

Table 13 NI Primestock Beef Gross Margin

Total kg Primestock Beef¹⁴ (July 24 - June 25)	132,560,834
Average Price per kg	£5.526
Total Output	£732,531,169
Gross Margin as a % of Output	39%
Total NI Gross Margin	£285,687,156

Table 14 Impact of P Balance Limits on NI Primestock Beef

	10 kgP/ha	8kgP/ha
Stock reduction needed	22%	28%
Reduction in Gross Margin	£63,993,923	£80,563,778
Multiplier	2.5	2.5
Total Economic Impact	£159,984,807	£201,409,445

Table 15 NI Suckler Cows Gross Margin

Total kg Beef Cows (July 24 - June 25)	14,493,958
Average Price per kg	£3.913
Total Output	£56,714,858
Gross Margin as a % of Output	45%
Total NI Gross Margin	£25,521,686

Table 16 Impact of P Balance Limits on NI Suckler Cows

	10 kgP/ha	8kgP/ha
Stock reduction needed	22%	28%
Reduction in Gross Margin	£5,716,858	£7,197,115
Multiplier	2.5	2.5
Total Economic Impact	£14,292,144	£17,992,789

¹⁴ Source LMC

Sheep Enterprises

Table 17 Gross Margin as a Percentage of Output for Lowland NI Sheep Enterprises

	Output (£)	Gross Margin (£)	Gross Margin as a percentage of Output
Breeding Ewes LL	150	72	48%
Breeding Ewes DA	133	59	44%
Average			46%

Table 18 Kilograms of hoggets / lambs sheepmeat and numbers of ewes and rams slaughtered in Northern Ireland¹⁵ (July 2024 - June 2025)

		Hoggets / Lambs slaughtered (kg Cold weight)	Ewes & Rams Slaughtered (Head)
2024	July	708,484	2,271
	August	1,038,688	1,893
	September	948,934	2,882
	October	908,354	2,223
	November	1,062,470	2,654
	December	646,128	1,895
2025	January	588,073	1,696
	February	582,604	2,681
	March	755,239	2,624
	April	558,201	1,685
	May	724,248	2,768
	June	643,188	1,936
	Total	9,164,611	27,208

¹⁵ Source LMC (kilograms) / DAERA (Slaughter numbers)

Table 19 Average price of hoggets and lambs slaughtered in Northern Ireland¹⁶ (July 2024 - June 2025)

		Avg Price per kg (Hoggets / Lambs)
2024	July	581.6
	August	614.7
	September	587.6
	October	594.5
	November	629.6
	December	667.2
2025	January	692.0
	February	691.6
	March	675.8
	April	678.7
	May	656.9
	June	681.4
Average		646.0

Table 20 NI Hoggets / Lambs Gross Margin

Total Hoggets & Lambs (July 24 - June 25)	9,164,611
Average Price per kg	£6.46
Total Output	£59,203,387
Gross Margin as a % of Output	46%
Total NI Gross Margin	£27,233,558
Estimated Gross Margin of Hoggets & Lambs Slaughtered in Rol & GB (72.6% of NI kill)	£19,773,924
Total Gross Margin of NI Hoggets and Lambs	£47,007,482

Table 21 Impact of P Balance Limits on NI Hoggets / Lambs

	10 kgP/ha	8 kgP/ha
Stock reduction needed	22%	28%
Reduction in Gross Margin	£10,529,676	£13,256,110
Multiplier	2.5	2.5
Total Economic Impact	£26,324,190	£33,140,275

¹⁶ Source LMC

Table 22 NI Ewes & Rams Gross Margin

Total Head (slaughtered) Ewes & Rams (July 24 - June 25)	27,208
Average Price per head	£120
Total Output	£3,264,960
Gross Margin as a % of Output	39%
Total Gross Margin (of Ewes & Rams slaughtered in NI)	£1,273,334
Estimated Gross Margin of Ewes & Rams slaughtered in RoI & GB (72.6% of NI kill)	£924,551
Total Gross Margin of NI Ewes & Rams	£2,197,886

Table 23 Impact of P Balance Limits on NI Ewes & Rams

	10 kgP/ha	8kgP/ha
Stock reduction needed	22%	28%
Reduction in Gross Margin	£492,326	£619,804
Multiplier	2.5	2.5
Total Economic Impact	£1,230,816	£1,549,509

Mixed farms

The 11 mixed enterprise farms were mainly “Large” (eight farms). This data table is for information only. As mixed farms include a number of enterprises, they have not been included in the economic analysis for stock reduction, however stock reductions for each livestock type are expected to be in line with those stated previously. Eight of the mixed farms included a Dairy enterprise, the predicted change in milk production has been included in the dairy analysis as the total milk yield statistics published by DAERA do not distinguish farm type. Although this data could not be classified for inclusion in the economic analysis, it is clear that the mixed farms, on average, would have an increased demand for land and a stock reduction.

Table 24 Breakdown of distribution of mixed farms surveyed

	Min	Max	Mean	SD
Land area (Ha)	27	234	121	58.07
P balance (kg)	-5,562	21,163	2,519	6,636.33
P balance / Ha	-55	91	15	37.60
Land needed to get below 10kgP/ha	-658	1883	131	629.44
or Stock Reduction	0.0%	89.0%	27.5%	36.16%
Land needed to get below 8kgP/ha	-823	2354	164	786.79
or Stock Reduction	0.0%	91.2%	32.3%	39.07%

Dairy Farms

There were 114 farms which were classified as Dairy, the vast majority of dairy farms included were “Large” (108). In addition to the dairy farms, there were eight “Mixed” and one Poultry farm which also produced milk.

Table 25 Breakdown of distribution of dairy farms surveyed

	Min	Max	Mean	SD
Land area (ha)	50	364	147	45.54
P balance (kg)	-3,325	9,499	2,330	1,300.87
P balance / Ha	-21	55	16	7.30
Land needed (ha) to get below 10kgP/ha or Stock Reduction	-487	656	86	123.19
Land needed (ha) to get below 8kgP/ha or Stock Reduction (%)	0.0%	81.9%	37.2%	16.76%
	-609	820	107	153.99
	0.0%	85.5%	47.8%	17.83%

The average milk yield per cow for all farm types surveyed was 8,970 l, which is slightly higher than the mean for all of Northern Ireland (with a mean of 8,291 litres). The mean national figure was derived from dividing the 2,697.19 million litres of milk produced in 2024¹⁷ by the population of 325,325 dairy cows¹⁸.

When weighted for farm size, the mean milk yield per cow was 9,152 l, when weighted for farm size and restricted to farm type “Dairy”, the mean milk yield per cow was 8,232. However, this does not account for very small dairy farms which account for 8% of dairy farms in NI (Table 26).

Table 26 Average Milk Yield (l/cow) x farm business size of Northern Ireland Dairy Farms

	Very Small	Small	Medium	Large	Weighted mean	Mean
Proportion NI	8%	26%	23%	43%	-	-
Proportion surveyed	0.8%	2.4%	3.2%	93.6%	-	-
Dairy only	-	9,619	8,271	8,919	8,232	8,908
All milk producing farms	11,176 ¹⁹	9,656	8,271	8,957	9,152	8,970

¹⁷ Northern Ireland Milk Price and Production April 2025.pdf

¹⁸ 08 Agricultural Insights Sub Report

¹⁹ Only one farm included in this “very small” category

Milk yield

Total milk yield on the farm was calculated as

$$\text{Milk yield (l)} = \text{Mean milk yield per cow} * n \text{ Dairy cows}$$

Thus, where a farm required a decrease in stock numbers, the total milk yield would decrease but average milk yield per cow was assumed to stay the same.

Table 27 Total litres of milk produced and decrease in production at proposed new P levels on surveyed farms (weighted by farm size)

	Total output ('000l)					%Reduction
	Part-time	Small	Medium	Large	Total	
Current	2,360.3	18,289.3	25,929.7	113,831.3	160,410.5	0%
10 kg	2,360.3	15,789.4	25,929.7	69,622.9	113,702.2	29%
8 kg	0.0	2,981.0	2,981.0	47,893.2	63,847.9	60%

Table 28 Northern Ireland Dairy Sector Gross Margin

Total Dairy Cows (June 2024 Census)	325,325
Average Gross Margin (£/Cow)	£1,840
Total NI Dairy Gross Margin	£598,598,000

Table 29 Impact of P Balance Limits on NI Dairy Sector

	Average stock reduction calculated from Survey		Corrected change in NI Average Milk Yield	
	10 kgP/ha	8kgP/ha	10 kgP/ha	8kgP/ha
Proportion change	38%	49%	29%	60%
Reduction in Gross Margin	227,467,240	293,313,020	173,593,420	359,158,800
Multiplier	2.5	2.5	2.5	2.5
Total Economic Impact	£568,668,100	£733,282,550	£433,983,550	£897,897,000

Note that the proportion change in corrected average milk yield differs from the proportion change in stock reduction because of the variation in herd structure. For example, herds which required a stock reduction of less than 50% had a similar average milk yield to those which required a stock reduction of 50% or more (8,958l and 9,095l respectively) to achieve the 10kg P balance. However, the average herd size for those requiring a stock reduction of more than 50% was 346 compared with 218 for those which required 50% or less. Thus, the percentage reduction in stock for large farms has a greater effect on the total litres of milk produced.

Arable, Potatoes and Vegetables

The members of the Ulster Farmers' Union Seed & Cereals, Potatoes and Vegetable Committees discussed the issue each undertook an assessment of their own farms as to how much land would be lost to the 3 metre buffer strips which would be required alongside water courses. It was estimated that an average of 2% of arable land would be lost to these buffer strips. In the consultation document it is not clear on how the 3m buffer is to be measured nor is there clear definition of arable crops. As such, more land and more crops could be impacted.

This has been applied to the total land area for each crop from the June 2024 DAERA Agricultural Census and the gross margin applied. As the DAERA census does not split between spring and winter wheat and oats the percentages of these were estimated. Estimates were also used for crop silage and other forage field crops.

The gross margin for "mixed corn" and "other crops" was taken as an average for the cereal crops and as DAERA does not publish a gross margin for vegetables the gross margin for potatoes was used. Fruit and ornamentals were not included in the calculation.

Table 30 Impact of 3m Buffer Strips on NI Arable, Potato and Vegetable Sectors

	2024/25 Gross Margin (£/Ha)	2024 Ha	2% Loss to 3m buffer strips (ha)	Reduction in Gross Margin	Multiplier	Total Economic Impact
Spring Barley	£1,354	13,597	272	£368,128	2.5	£920,321
Winter Wheat	£2,170	7,029	141	£305,112	2.5	£762,779
Winter Barley	£1,666	6,841	137	£227,875	2.5	£569,688
Spring Wheat	£1,642	1,000	20	£32,844	2.5	£82,110
Spring Oats	£1,418	727	15	£20,619	2.5	£51,547
Winter Oats	£1,799	1,061	21	£38,168	2.5	£95,419
Mixed Corn	£1,675	87	2	£2,914	2.5	£7,285
Ware Potatoes	£2,954	3,096	62	£182,897	2.5	£457,241
Arable Crop Silage	£1,300	4,021	80	£104,546	2.5	£261,365
Other Field Crops - Forage	£1,300	3,065	61	£79,690	2.5	£199,225
Other Crops	£1,675	3,607	72	£120,817	2.5	£302,042
Vegetables	£2,954	840	17	£49,627	2.5	£124,068
TOTAL		44,971	899	£1,533,236		£3,833,091

Other Considerations

Land Impacts

For every enterprise that is affected there are three short term solutions: reduce stocking rates (which would likely render the farm financially unviable), export slurry, or acquire additional land (through rent or purchase).

Under the NAP proposals slurry exporting will become a lot more cumbersome with all exports having to be notified and verified within four days. Many beef and sheep farms are already operating close to the 150kgN/ha limit. Once this is exceeded, then the P balance rules are applied and even assuming there is “bare” ground the amount that can be exported drops from 65M³/ha/year (14,298 gallons) to 15M³/ha/year (3,300 gallons) (assuming standard values for 6% cattle slurry). Thus the scope for slurry exports in the future will be extremely limited.

If implemented, the NAP proposals would lead to enormous disruption in the Northern Ireland land market, which is already overheated. While some farmers may offset livestock reductions by renting additional land, land rental rates are likely to increase and this would result in further funds being transferred from family farm businesses to inactive landowners.

Ultimately the most viable farms will be most able to secure additional land squeezing out less viable farm systems. While the beef and sheep sector and non-livestock farms may seem least affected by the current NAP proposals, as per the analysis presented here, they could lose a considerable amount of conacre land to the more intensive sectors. Vegetables and potatoes rely heavily on clean fresh conacre land for quality so this could create an even bigger issue.

Given the short timeframe in which this impact assessment has been undertaken it has not been possible to look at the wider ramifications. For example, the economy wide loss of gross value added from the agriculture sector would likely result in job losses and increased pressure on the exchequer. However, any subsequent analysis undertaken by DAERA must look at the knock-on consequences for the Northern Ireland land market.

Borrowing Commitments of Northern Ireland Farms

Many of the farmers impacted by the NAP proposals are considered to be those who have developed their businesses and are likely to be borrowers. According to Finance UK figures to the end of Q1 2025, approximately £960 million has been borrowed by NI farmers through loans and overdrafts. Assuming an average farm loan term of 10 years, annual capital repayments alone are estimated to be £96 million.

Asset finance and hire purchase must also be considered. Although those figures are not collated, an estimated total of approximately £300 million has been assumed, typically over a 5-year term. Therefore, annual capital repayments in this category are estimated to be in the region of £60 million. So total repayments across loans, overdrafts, asset finance plus borrowing from elsewhere and including interest then likely annual repayments are upwards of £200m per annum. If those bigger units across dairy, beef finishers, pigs and poultry are to meet the P balance targets and in turn be forced to either destock and/or rent more land than their ability to meet debt never mind continue to invest in their business could become unsustainable. DAERA need to take these issues into account when carrying out their Economic Impact Assessment of the revised proposals.

Conclusions

The findings of this economic impact assessment raise serious concerns about the future viability of farms given the proposed Nutrients Action Programme (NAP) phosphorus (P) balance limits for 2026–2029 and imposition of buffer strips on arable land. The data, drawn from a wide cross-section of Northern Ireland farms, clearly demonstrates that the implementation of these measures—particularly the 8kgP/ha threshold—would result in:

- **Widespread economic disruption** across the agri-food sector and the wider economy, with projected losses exceeding **£1.56 billion per annum**.
- **Limit the resilience and competitiveness** of the Northern Ireland family farm. Improved productivity was one of the four key policy objectives of DAERA. This could further exacerbate the economic gap between the farm and non-farm economy - rural and urban communities and act as a further disincentive for young people to enter farming.
- **Severe financial strain** on farm businesses, many of which are already carrying significant debt burdens.
- **Destabilisation of the land market**, with increased competition for land likely to disadvantage smaller and less intensive farms and non-livestock farms.
- **Threats to supply chain resilience**, as reduced livestock numbers could render processing facilities economically unviable.
- **Wider impact on rural communities** dependent on the agricultural sector for economic activity.
- **Further weaken the food security and food sovereignty** of the United Kingdom by reducing domestic production and increasing reliance on imported produce.

These outcomes would not only undermine the economic sustainability of Northern Ireland's rural economy but also risk unintended social and environmental consequences.

Appendix A - Phosphorus (P) balance

The respondent was required to enter the P inputs (Livestock purchased; slurry / manure imports; purchased feed; purchased P fertiliser) and P outputs (Livestock sold, produce sold, slurry and manure exports). This data was used to calculate the P surplus.

$$\text{P surplus (kg)} = \text{Total P inputs (kg)} - \text{Total P outputs (kg)}$$

This was further used to calculate the P balance (kg/Ha) using the formula:

$$\text{P balance (kg /Ha)} = \frac{\text{P surplus (kg)}}{\text{Farm area (Ha)}}$$

Predictions of the Land change required (Ha) to achieve the desired P balances of 10kg/Ha and 8kg/Ha using the formula:

$$\text{Land change (Ha)} = \frac{(\text{P surplus (kg)}) - (\text{Farm Area Ha} * \text{Desired P balance (kg)})}{\text{Desired P balance (kg)}}$$

The change in Livestock on farm was calculated using a proportional reduction model, which calculated the percentage reduction of the total current P surplus required to achieve the desired P balance:

$$\text{Livestock population change(\%)} = \frac{(\text{P surplus} - (\text{Farm Area} * \text{Desired P balance}))}{\text{P surplus}}$$

Appendix B - Farm business type and size

Farm business type and size were determined using the methodology published in the Farm Incomes survey 2022-23²⁰. This assigned a farm business type by converting the average annual animal populations to Standard output (SO) units. Where an enterprise accounted for more than 66.6% of SO from the farm, this was assigned as the main enterprise; if a farm had no main enterprise, it was allocated as 'Mixed'. The farm business survey has stratified beef and sheep farms into lowland and less favoured areas, but in this analysis the land type data was not available and as a result Beef and Sheep Lowland and LFA are combined.

Farm business size was determined from the standard labour requirement (SLR) to manage the livestock on farm, calculated as the sum of each livestock type on farm multiplied by the appropriate SLR coefficient. The SLR and SO coefficients used are listed in the Appendix. The DAERA farm census uses a similar method for stratification, but combines "Hobby" and "very small" into one group²¹, the farm types reported in the census are compared with the reported farm break down in NI 2024.

Table 31 Breakdown of Northern Ireland farm size by sector

Farm Type	Farm size							
	Very Small		Small		Medium		Large	
	NI	Sample	NI	Sample	NI	Sample	NI	Sample
Pig	30.6%	0.0%	13.9%	0.0%	13.9%	8.3%	41.7%	91.7%
Poultry	21.5%	0.0%	36.8%	37.5%	21.6%	0.0%	20.1%	62.5%
Beef and sheep	89.6%	34.8%	10.1%	33.3%	2.3%	19.7%	1.5%	12.1%
Dairy	8.1%	0.0%	26.0%	1.8%	22.6%	3.5%	43.3%	94.7%
Mixed	56.9%	9.1%	14.8%	18.2%	8.2%	0.0%	20.1%	72.7%

²⁰ Farm Incomes in Northern Ireland 2022-23

²¹ Census methodology

Appendix C - Use of Gross Margins

For the purpose of the economic impact assessment, gross margins have been used. These have been taken primarily from the published DAERA Farm Business Survey data²². However, as the most recent published set of gross margin data is from the 2022/23 financial year, adjustments have been made based on the changes in agricultural income observed over the past two years.^{23 24}.

Table 32 Northern Ireland Farm Business Survey Gross Margins adjusted by changes in agricultural income

	2022/23	2023/24 Adjustment	2023/24	2024/25 change	2024/25
Gross Margins Expressed per Head					
Dairy Cows	1680	-70%	504	191%	1467
Suckler Cows (non LFA)	282	8%	305	36%	414
Ewes Non LFA	72	8%	78	36%	106
Pigs - Birth to Bacon	40	84%	74	2%	75
Gross Margins Expressed per Hectare					
Dairy Beef Stores (per/Ha)	502	3%	517	49%	770
Dairy beef to Finish (per Ha)	725	3%	747	49%	1113
Beef Calves Reared & Sold as Stores	510	3%	525	49%	783
Beef Calves Reared to Finish	796	3%	820	49%	1222
Finishing Purchased Stores	502	3%	517	49%	770
Crops					
Spring Barley	1220	-81%	232	484%	1354
Winter Wheat	1956	-81%	372	484%	2170
Winter Barley	1501	-81%	285	484%	1666
Spring Wheat	1480	-81%	281	484%	1642
Spring Oats	1278	-81%	243	484%	1418
Winter Oats	1621	-81%	308	484%	1799
Ware Potatoes	2662	-81%	506	484%	2954

²² <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/Farm%20Performance%20Indicators%202022-23.PDF>

²³ <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/STATISTICAL%20PRESS%20RELEASE%20INCOMES%202023%20with%20tables.pdf>

²⁴ https://www.daera-ni.gov.uk/sites/default/files/2025-06/STATISTICAL%20PRESS%20RELEASE%20INCOMES%202024%20with%20tables_0.pdf

On closer examination the adjusted pig gross margins did not reflect the current reality in Northern Ireland, so the AHDB gross margins were used and adjusted for the pig meat price paid in Northern Ireland.

The 2024/25 gross margins for dairy were considered to be low. Advice was provided by private consultants from the dairy sector, indicating that gross margins for the 2024/25 year were, on average, £160 higher than in 2022/23. Consequently, a gross margin of £1,840 per cow for dairy farms (£1,680 + £160) was applied.

DAERA do not publish gross margin figures for layers, so ADAS figures were used and adjusted for local market conditions.

Appendix D - Use of Multipliers

It is widely recognised that the economic impact of farming extends well beyond the farm gate—an effect commonly referred to as the “multiplier effect.” For the purposes of this analysis, the Type 2 GVA multiplier published by EY in a 2021 report for the Northern Ireland Food and Drink Association has been used²⁵.

The published multiplier for “Products of agriculture and related services” is 2.5 and this has been used in this economic analysis. This is the fifth highest multiplier in the Northern Ireland economy. It should also be noted that the “Food Products” multiplier is even higher at 3.1 (the third highest in the Northern Ireland economy). To avoid duplication this multiplier has not been used in this impact assessment.

²⁵ Food for thought: The Food and Drink industry, an inclusive sector at the heart of Northern Ireland EY (2021)

Appendix E - Standard outputs coefficients

Table 33 Standard outputs coefficients

Item	Calculator reference	Unit	Standard Output
Dairy cows	Dairy Cows	head	2589
Beef cows	Suckler Cows	head	511
Bulls/ steers 2y+	Breeding Bulls	head	569
Other cattle 2y+	Cattle > 2 Years	head	497.5
Other cattle 1-2y	Cattle 1-2 Years	head	530.5
Bulls/steers 1-2y	Bull Beef (0-13 months)	head	584
Calves <1y	Cattle 0-1 years	head	545
Ewes	Ewe >1 yr	head	109
Other sheep	Ram >1 year	head	24
Lambs	Lambs 0-1 years	head	0
Other pigs	Boar	head	241
Other pigs	Maiden Gilt	head	241
Sows	Breeding Sow	head	934
Piglets (<20kg)	Pigs weaned at 3-4 weeks 6 to 8 18 (7.5 Weeks)	head	107
Piglets (<20kg)	Pigs weaned at 3-4 weeks 6 to 8 35 (11 weeks)	head	107
Piglets (<20kg)	Pigs weaned at 3-4 weeks 6 to 8 105 (23 weeks)	head	107
Other pigs	Growing & Finishing Pigs 18 35	head	241
Other pigs	Growing & Finishing Pigs 18 105	head	241
Other pigs	Growing & Finishing Pigs 36 105	head	241
Hens	Pullets	head	22.22
Hens	Layers	head	22.22
Hens	Free range laying hens	head	22.22

(Source DAERA)

Appendix F - Standard labour requirements coefficients mapped to DAERA coefficients

Table 34 Standard labour requirements coefficients mapped to DAERA coefficients

Item	Calculator reference	Unit	Standard Labour Requirement (Hours)	Units per 1900 hours
Dairy cows	Dairy Cows	head	39	49
Beef cows	Suckler Cows	head	12	158
Other cattle	Breeding Bulls	head	9	211
Other cattle	Cattle > 2 Years	head	9	211
Other cattle	Cattle 1-2 Years	head	9	211
Other cattle	Bull Beef (0-13 months)	head	9	211
Other cattle	Cattle 0-1 years	head	9	211
Ewes and rams: Lowland	Ewe >1 yr	head	5.2	365
Ewes and rams: Lowland	Ram >1 year	head	5.2	365
Other sheep: Lowland	Lambs 0-1 years	head	3.3	576
Other	Boar	head	1.3	1462
Sows and gilts	Maiden Gilt	head	16	119
Sows and gilts	Breeding Sow	head	16	119
Piglets	Pigs weaned at 3-4 weeks 6 to 8 18 (7.5 Weeks)	head	1	1900
Piglets	Pigs weaned at 3-4 weeks 6 to 8 35 (11 weeks)	head	1	1900
Piglets	Pigs weaned at 3-4 weeks 6 to 8 105 (23 weeks)	head	1	1900
Piglets	Growing & Finishing Pigs 18 35	head	1	1900
Piglets	Growing & Finishing Pigs 18 105	head	1	1900
Piglets	Growing & Finishing Pigs 36 105	head	1	1900
Pullets	Pullets	head	0.12	15833
Laying hens	Layers	head	0.17	11176
Laying hens	Free range laying hens	head	0.17	11176

(Source DAERA)