RESEARCH REPORT

OPTIONS FOR SUPPORTING THE SUCKLER BEEF AND SHEEP SECTORS IN NORTHERN IRELAND

PRESENTED TO:

LMC
Livestock & Meat Commission

BY

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Please Note:

This report, prepared for the Livestock and Meat Commission (LMC), in collaboration with the Northern Ireland Meat Exporters Association (NIMEA) and the Ulster Farmers' Union (UFU), presents the findings from an in-depth research project. The report has been prepared independently, and the views, opinions and conclusions expressed are those of the authors, and do not necessarily reflect those of the commissioning organisations. The authors have taken all reasonable steps to ensure that the information in this report is correct. However, we do not guarantee that the material within the report is free of errors or omissions. We shall not be liable or responsible for any kind of loss or damage that may result as a consequence of the use of this report.

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EXECUTIVE SUMMARY

INTRODUCTION

This study's aim is to identify the policy framework and associated measures to deliver a sustainably competitive Northern Irish (NI) suckler beef and sheep sector. This encompasses providing a fair income to productive farmers, enabling processors to be internationally competitive whilst delivering public goods, notably environmental and societal outcomes, which are valued by society and contribute to a vibrant economy. The study used a combination of primary and desk-based research to explore several options for supporting the suckler beef and sheep sectors in NI to ensure that a sustainable and viable industry is maintained. It addressed the following objectives;

1. Identify the reasons for the decline in suckler cow numbers and variability in the scale of sheep production in NI.
2. Conduct a review of the impact of historical and current agricultural policies in beef and sheep producing countries on suckler cow and breeding sheep numbers, the environment and society.
3. Provide an evidence-based analysis of the impact of the existing suckler beef and sheep industry on the NI; a) economy b) environment c) society.
4. Undertake a review of the net benefit of beef and lamb production as a public good.
5. Propose options for support measures that demonstrate the potential economic, environmental, & social outcomes that a viable suckler beef and sheep sector can deliver.

REASONS FOR DECLINE

1. **Poor profitability**: emerged as the leading reason as the suckler beef and sheep sector has struggled in comparison with other sectors (e.g. dairying) in recent years. Linked with this, the growth in dairying on the island of Ireland and the increase in dairy-bred beef coming onto the market has eroded suckler beef's competitive position. Competition from abroad was also influential and could become more problematic in future if the UK alters its tariff regime.
2. **Policy impacts**: is closely linked with profitability as many NI farmers' incomes are heavily reliant on support. Looking at the output from suckler beef and sheep, the introduction of decoupling in 2005 was seen as especially influential because thereafter, farmers did not have to engage in much productive agriculture in order to continue to receive support payments.
3. **Structural challenges**: impede the sector from two perspectives. Firstly, the vast majority of suckler beef & sheep farms in NI are categorised as being "very small", thus limiting opportunities for occupants, particularly young farmers, to expand. Secondly, the age profile of farmers is a major concern. In comparison with 2000, farmers aged 65 or over has risen from 24% to 36% in 2018. Frequently, older farmers tend to have lower stocking rates which has contributed to a reduction in numbers in recent decades.
4. **Declining consumption**: per capita beef and sheepmeat consumption has steadily fallen in the UK since 1990. Coupled with this, the rise of alternative proteins and diets has meant that beef and sheep now faces a greater degree of competition. The beef sector in particular is targeted by some activist groups that claim that it is a major contributor to greenhouse gas emissions. Linked with this, the BSE crisis of 1996 contributed to a major downturn in beef consumption which the sector has not recovered from in the decades since.

   Price has also been influential because relative to poultry for example beef and sheep meat is significantly more expensive meaning that it has increasingly become a special occasions protein. Although beef cow and sheep numbers have stabilised in the last decade, there is

significant concern that with Brexit, trade friction could become a major issue, particularly with GB which is by far the most crucial market. This could contribute to a further decline in output.

REVIEW OF AGRICULTURAL POLICIES – KEY LESSONS

Agricultural policies in ten countries were reviewed including other devolved UK nations as well as selected EU and non-EU countries. In addition, the current and historical agricultural policies applied in NI since pre-1973 were examined as were policy and strategic performance reviews over the past decade. The key points from this research were;

- **Productivity and the environment:** emerged as the leading focus areas with many industry experts stating that these concepts can be complementary if applied correctly.
- **Results-based schemes:** are becoming more prominent but these need to be controllable, and easily measurable, at the farm-level to have the best chances of success.
- **Skills development and knowledge transfer:** likely to have driven productivity growth in Australia and New Zealand though this may not be easily transferable to Northern Ireland given structural and commercial differences (e.g. greater influence of off-farm income).
- **Insurance schemes:** received mixed responses as they tend to be complex to set-up and administer, particularly given the lack of culture concerning the utilisation of insurance in NI.
- **Deficiency payments:** whilst some viewed these positively, several others deemed them to be heavily trade distorting and would cause issues with neighbouring countries.
- **Coupled payments:** viewed positively by some but need to avoid quality decreasing. Some urged for such schemes to drive positive behaviours such as lower emissions or better quality.
- **Savings schemes:** lodging support payments into a special savings account could nudge farmers to conserve some funds until a "rainy day" would help to improve resilience.
- **Public goods schemes:** the environment is unsurprisingly the main focus and most schemes tend to consist of a menu of options/initiatives which farmers can undertake (e.g. GHG emissions, improving soil health etc.). These often tend to be "add-on" schemes to a basic support mechanism. Other key public goods themes include;
    - **Tourism and landscapes:** many policies focus on the contribution of suckler beef and sheep towards the aesthetic value of the countryside as well as making it more accessible (walkable). This is sometimes linked with culture (e.g. Norway/Switzerland). Accordingly, the concept of *cultural landscape* is frequently cited as a key public good.
    - **Security of supply:** cited as a public good in several countries and is distinct from food production. It also has linkages with food safety and traceability which are seen as particularly important in the context of public health.
    - **Productivity improvement:** is cited in some circles as a public good given its potential to enable scarce natural resources to be utilised more efficiently and sustainably. Here, the scope to extract greater value from data (e.g. leveraging breeding databases to support genetic improvement) was also mentioned as constituting a public good.

Northern Ireland reviews: the above themes, particularly productivity and the environment were frequently mentioned as was the need to reform the conacre system of farm rentals and the need to ensure that farmers receive a fair income for the work that they undertake.

FUTURE POLICY – DESIRED OUTCOMES

The long-term vision is that, by 2027, the NI suckler beef and sheep sector is competitive and increasingly sustainable meaning that emission levels are reducing at a greater rate than the UK's Paris Accord targets. Productive farmers receive a fair income for their market-leading produce and that the support they receive mitigates the effects of volatility whilst permitting processors to be internationally competitive and develop sales in growing markets. The sector delivers public goods, especially environmental and societal outcomes, which are valued by society and contribute to a vibrant economy.

Desired Outcomes – by 2027:

- **Environment & Productivity:** output is maintained at current levels and simultaneously, key input usage (feed, fertiliser and labour) has reduced by 10% whilst CO_2 equivalent emissions (based on current methodologies) are 20% lower versus base-levels (2019).
  - Every beef and sheep farm claiming support to have a GHG emissions audit undertaken within 18 months of scheme commencement, based on a robust and transparent methodology.
  - CO_2 emissions targets will have been achieved on 90% of farms by 2027.
  - All supported farms comply with Nitrates Action Programme (NAP) & Phosphorous Regulations.
  - All supported farmers have a plan in place and are taking actions to reduce ammonia emissions based on Government regulations and guidance.
- **Production Cost Competitiveness:** the performance gap, in terms of production cost, between the top 25% and the bottom 25% of farms is halved across each farm type (lowlands, uplands etc.) whilst per unit costs of production are lowered across all quartiles.
- **Resilience & Market Orientation:** Farmers receive a fair and transparent price for prime produce on the basis that key quality criteria are met, thus bolstering their resilience. They receive protection during periods of market slumps in a manner that conforms to WTO obligations and other State Aid rules. At the same time, farmers are market oriented and responsive to consumer demands.
- **Transition:** any farmers exiting the industry have good access to rural housing and re-training schemes to enable them to secure alternative employment nearby (if applicable).
  - Farmers wishing to exit and retire from working have an economically sustainable pathway to do so without incurring a significant taxation burden whilst ensuring a fair continuity of income.
  - Simultaneously, young or expanding farmers are given better opportunities to access more land provided they farm in conformance with policy objectives and their agreements with lessors.
- **Knowledge & Innovation:** all supported farms regularly engage in CPD training, a key means to ensure that NI farmers stay competitive whilst reducing the performance gaps identified above.
- **Quality:** all NI beef cattle and sheep farmers in receipt of support are Farm Quality Assured (FQA) and more than 90% have achieved Lifetime Quality Assured (LQA) status. NI is consistently ranked in the top-5 internationally for quality and food safety. 90% of suckler beef cattle and sheep/lambs born each year are registered under an approved beef genetics' scheme.
- **Enhanced Connectivity:** enhanced broadband connectivity with average speeds at 75% of urban areas (as at 2027) and all rural dwellers achieving connectivity speeds at 50% or higher versus urban areas. This contributes to the cohesion of rural communities and the provision of public goods.

FUTURE POLICY PROPOSALS

The proposed policy framework is summarised in Figure A and consists of three strands of support.

1. Environment and Productivity Support (EPS)

This is the core component of the support framework. It focuses on a select number of key performance indicators (KPIs), four of which are compulsory with three being optional. To receive full support, farmers must achieve all compulsory targets and one of the optional KPIs. These are designed to be straightforward to measure and several can be obtained using existing datasets. The payments are set at 70% of existing BPS payments and would be lodged into a special interest-bearing savings account where monies would only be taxable upon withdrawal. The farmer could draw out of the account at any time and could "shelter" the money tax-free until the rainy day (when cash is needed and the tax bill is likely to be lower) thus bolstering resilience. The estimated cost across all NI farms would be £196.7m.

2. EPS Plus Payments

To address the scale of the environment and productivity challenge, additional measures are also required but farmers need greater flexibility to choose which options would be most suitable for their businesses. To this end, an enhanced form of support (**EPS Plus**) is proposed. These payments would only be made if the basic EPS targets were achieved. Below are some of the options from a suckler beef and sheep perspective.

A. Coupled Schemes to Promote Efficiency, Sustainability and Quality

- **Low Methane Beef Calf Payment (Environment and Quality Assurance (EQA) Stage 1:** headage payment (£75/head) for each registered suckler calf (3/4 beef-bred) provided that the farm is Farm Quality Assured (FQA) and that the calf's genetics have been approved to lower expected methane emissions by ≥20% over its lifetime.
- **Low Methane Dairy Beef Calf Payment (EQA Stage 1):** £25/head, paid on beef sired calves born to dairy dam to help ensure that calves coming from dairy herd for finishing have the potential to meet the required environmental and quality standards.
- **EQA Stage 2 (Quality Assurance) Payment:** based on a £57/head provided farmers have FQA designation. An additional condition would be that all animals need to be slaughtered at less than 24 months, thus helping to lower emissions. Over time, it is anticipated that the FQA payment will be based on Lifetime Assurance (i.e. after 24 months of the scheme being operational) as the industry is moving in this direction.
- **Sheep Welfare and Efficiency Payment (SWEP):** targeted at improving the welfare of breeding ewes. Payment of £12/ewe.

  Taken together, these coupled payments would equate to £48 million. This would represent 14% of the total support given to agriculture in Northern Ireland (£333 million) and 2% of 2019 gross output; within EU and WTO limits. Close attention needs to be paid to the support that farmers in the Republic of Ireland receive, and NI payments need to be regularly reviewed so that there is a level playing field in terms of support received across the island of Ireland.

B. Agri-Environment and Disadvantaged Area Payments

- **Environmental Farming Scheme (EFS) – Successor Programme:** targeted at farmers that deliver more for the environment than what is provided for within standard direct payments schemes (e.g. targets within the EPS). Free of income foregone or costs incurred constraints, the delivery of environmental enhancements could become profit centres (farming enterprises) in

their own right. Here, greater funding would be required and would come from the 30% diversion of funding from the old BPS to EPS Plus schemes such as this. It is proposed to increase funding to £21.7 million, a 50% increase on funding for the current EFS, LFA Compensatory Allowance (ANC) and Countryside Management Schemes (non-capital). The provision of existing habitats or public goods should also be rewarded in addition to new habitats. Farmers should have as much flexibility as possible to deliver such enhancements.

For young farmers wishing to participate, it is proposed to use ~50% of existing Young Farmers' Payments (£2.9 million) as a means to provide a small top-up on EPS Plus payments on land which is under an agri-environment scheme.

- **NI Rural Disadvantaged Area Scheme (RDAS):** the substantial diminution of support to Severely Disadvantaged Areas (SDA) under the Areas of Natural Constraints (ANC) scheme has had a severe impact on the suckler beef and sheep industry. The need to provide an additional payment to farmers in disadvantaged areas in return for the delivery of enhanced public goods (e.g. visual landscapes etc.) has justification and should be given approval. The amount of funding should cover the decreases in funding experienced by SDA farms in recent years as a result of convergence under the BPS.

C. Other Industry Initiatives

- **Land Mobility:** the lack of land mobility is a major structural disadvantage. A Tax relief scheme similar to that in the Republic of Ireland is needed to encourage longer-term rentals allowing more proactive farmers to expand and offering those wishing to exit a viable means to do so.

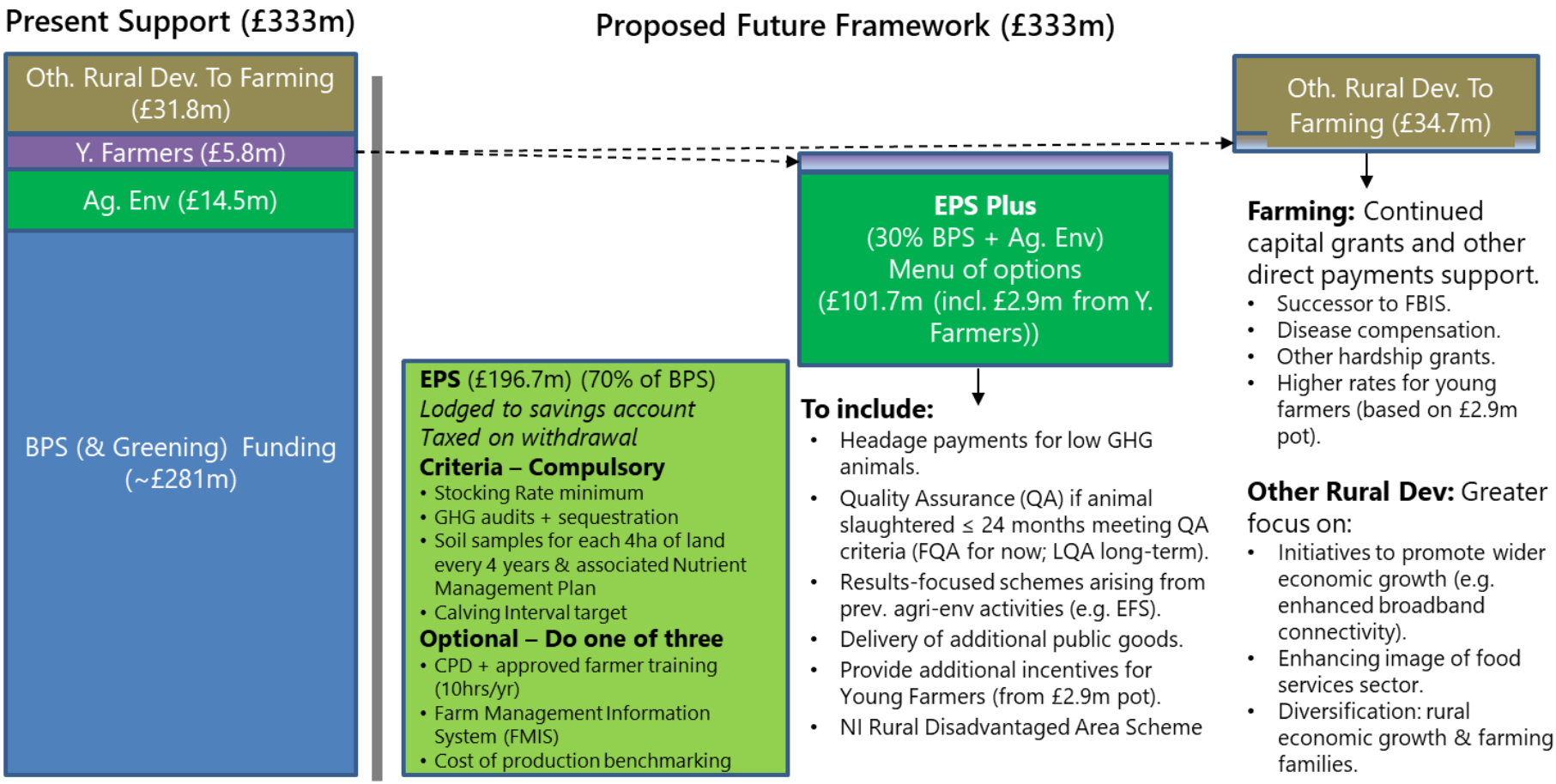
3. Other Rural Development Grants

Here, the focus is mainly on Rural Development support given to NI farming. The key proposals include;

- **Capital Grants:** would be used to deliver on the productivity and environment themes outlined above. However, there would be greater flexibility for farmers in terms of the grant amounts (i.e. much lower minimum grant levels), time available to complete the works and the auditing and assessment approach adopted by regulators. This calls for a productivity mindset to be adopted by the regulatory authorities as well as by farmers. Young farmers would receive a top-up for such grants based on the other 50% (£2.9 million) of the current Young Farmers' payment.
- **Hardship and Disease Compensation:** maintain funding to assist during exceptional crises.
- **Broadband and 5G connectivity:** there may be instances where some rural communities will still not receive adequate broadband connectivity. In such cases, applications for additional Rural Development funding, currently devoted to leisure facilities and the like, should be considered due to the economic and societal benefits that such connectivity would bring. Furthermore, the £150 million funding for broadband under the Confidence and Supply Arrangement negotiated by the DUP should also prioritise rural areas.
- **Diversification:** for some farms, they still may not be sufficiently competitive and may require support to diversify into other enterprises. Diversification initiatives which are deemed to have good return-on-investment (ROI) prospects should be a target area for Rural Development support. These payments could potentially come from the recently announced UK Shared Prosperity Fund which would focus on supporting rural areas.

Although beyond the brief of this project, agricultural policy does not exist in isolation. Reforms in other policy areas such as taxation law, divorce law, labour and migration, trade and market access and planning law also need to be examined to support a viable suckler beef and sheep sector into the future. Section 8.3 provides more detail.

Figure A: Proposed Future Agricultural Policy Framework



Source: The Andersons Centre

KEY CONCLUSIONS AND RECOMMENDATIONS

1. **Step-change in performance urgently needed:** if suckler beef and sheep is to continue long-term as a major agricultural sector. The key to achieving this is through better productivity and for supported farms to meet baseline KPIs. There are many honest and hardworking part-time and full-time farmers working in the NI suckler beef and sheep sector who should be supported in helping them to earn an income from farming. If these farms had greater access to land they could make these enterprises worthwhile. Obtaining the skills to manage operations more efficiently whilst contributing to environmental upkeep, would also make a major difference.
2. **A balanced approach to achieve better productivity and environmental sustainability:** with global populations continuing to grow towards 2050 being both productive and environmentally sustainable will be crucial. In the years ahead, farmers are going to need to justify why they should continue to receive taxpayers' support. If the industry is not seen to be making tangible efforts to address environmental issues and giving itself the best chance of achieving long-term profitability through productivity, it will be forced to downsize significantly.
3. **Use guaranteed levels of funding to bring about necessary change:** with the UK Government keeping support at current levels until the end of this Parliament (late 2024), there is an opportunity to move to a more sustainable and viable footing. Competition from other protein sources, including dairy-beef, will continue to put pressure on profits. The sector must respond and this will mean some changes taking place.
4. **Structural change is urgently needed:** very small farms account for nearly 60% of the NI beef cow population and most of these farms continue to be run by farmers older than 65. It is clear that some consolidation is needed if suckler beef and sheep farms are to be economically viable. Linked with this, over three-quarters of young farmers also operate on very small farms. Intergenerational transfer is also needed and this is a key means to achieve improved productivity.
5. **Reviews have taken place before, now is the time for action:** numerous reviews and strategic initiatives for NI agriculture have been conducted. Many of these have reached the same overall conclusions and some have included very sensible actions which should be taken to improve performance. It is striking that the follow-up action to achieve the goals set-out have fallen a long way short of what is required. Now the focus needs to be on implementing the priority actions to deliver the changes needed. It is all too easy to do another performance review to give the impression that action is being taken, but this is futile if nothing tangible happens as a result.
6. **Greater focus on customer needs:** paying close attention to what customers and consumers are saying and then delivering accordingly is crucial (e.g. deliver smaller sized animals if specified). Arguably, there is too much focus on "what looks good" to a farmer and not on what sells at the consumer end. There is little point incurring the costs, and emissions, associated with producing an overweight animal if it is not what is ultimately needed. The entire industry has a role to play and farmers need to receive the correct market signals. Processors, retailers and food service providers need to ensure that these messages are acted upon.
7. **Evolve policy framework to deliver on key priorities:** policy-setting never starts from a blank sheet of paper and needs to consider what has gone before. In this regard, the policy proposals set out in Chapter 8 continue with direct payments as the core support mechanism but has evolved it to place the environment and productivity at its heart whilst adopting more of a results-focused element. Some coupled payments have been recommended but are contingent on delivering something meaningful in return which is valued by wider society.
8. **Future support tracks and matches funding received by Irish farmers:** close attention needs to be paid to the support that farmers in the Republic of Ireland receive. Therefore, NI support

payments should be regularly reviewed and match what Irish farmers receive, thus levelling the playing field in terms of competitiveness. This point merits consideration in the context of support payments more generally. This includes dairy-origin beef (outside this study's scope). Such support should be provided in a manner which conforms to WTO and EU State Aid support limits.

9. **More intelligent use of data to minimise bureaucratic burden on farmers:** a substantial amount of data is already collected on NI farms. These databases need to be leveraged to enable farmers to seamlessly calculate KPIs such as calving intervals. In the future, this may need to be linked with "DNA tagging" to show that the progeny actually come from the performance sire (e.g. to prove eligibility for low-methane coupled payments). Unproductive form-filling and re-keying of data when submitting support applications needs to be minimised. The IT capabilities are already available to automate much of this process.
10. **Adopt tax incentives to promote land mobility:** it is evident that the tax breaks introduced in the Republic of Ireland have moved the dial on land mobility. A similar scheme is needed in NI.
11. **Focus of efforts to shift towards the consumer and societal needs:** the suckler beef and sheep industry needs to become much more market oriented and move away from a predominantly production-oriented approach. This should become a core focus of CPD and should eclipse that of grants and support which many farmers have arguably been more attuned to.
12. **Non-agricultural policy issues need to be tackled:** as these also have a major bearing on the future viability of NI suckler beef and sheep farms. Of these, Brexit-related issues (trade and market access as well as labour) are the most pressing and need the most urgent attention.
13. **Develop a robust methodology to measure net GHG emissions:** it is a major gripe that the mitigating effect of CO_2 sequestration via grassland grazed by cattle is not currently captured in the NI inventories on measuring agricultural emissions. In this study, it emerged that as a proportion of gross emissions from suckler beef, is significant (circa 13% to 40%). More robust methodologies to reflect the UK (NI) situation rather than using generic global figures are needed. Grazing livestock emissions need to be measured more accurately and NI institutes can play a leading role. This would provide a solid basis to effectively manage and to mitigate future GHG emissions from suckler beef and sheep. That said, this should not be an excuse for inaction at the farm-level. There are steps which can be taken now to significantly reduce emissions, irrespective of the methodology used.

FINAL WORD

A major effort is needed to address the challenges that the NI suckler beef and sheep sector faces. Otherwise, the industry will downsize significantly in the long-run. The proposed policy framework represents a meaningful step in the direction that the industry needs to travel bearing in mind what has gone before, future consumer and societal demands as well as farmers' needs and agriculture's role in the wider economy. If the industry can prove that it is moving in the right direction, there is a greater prospect of continuing to receive support from the mid-2020's onwards. Adopting a wait-and-see approach will not work in the long-run. If the farming industry does not tackle key issues such as emissions head-on, then consumers will ultimately make decisions for them.

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1. INTRODUCTION

1.1 BACKGROUND AND SCOPE

There has been a significant decline in suckler cow numbers in recent years on Northern Irish (NI) farms, with declining profitability being a key contributor to this trend. Calf registrations to suckler cows recorded a notable decline during 2019 and continued decreases in suckler cow numbers, down 1.1% on 2018, were recorded in DAERA's December 2019 census[1]. Sheep numbers are also down by 1% on the previous year and there has been significant variability over the past decade. These trends, coupled with poor profitability performance at farm level as well as the challenges arising from Brexit, mean that the suckler beef and sheep industry is facing significant headwinds.

As the beef and sheep sectors make a major contribution to the NI economy, particularly in rural areas and its producers provide a range of public goods relating to the environment, biodiversity and landscape preservation, it is important to assess what support measures should be deployed to assist the NI beef and sheep sectors to be sustainably productive in the long-term.

Therefore, the LMC commissioned The Andersons Centre to further explore options for supporting the NI suckler beef and sheep sectors specifically to ensure a sustainable and viable industry is maintained as the UK transitions to a post-CAP agricultural policy environment. Accordingly, this report is focused primarily on these sectors and not the wider NI agricultural industry. That said, several of the ideas put forward in this report could be applied more widely and suggestions in that regard are made at appropriate junctures in the Chapters below. This study also examines the contribution of the suckler beef and sheep industry to the Northern Irish economy, which is vital to both the social and cultural capital of rural regions, particularly as they are often located in marginal or economically disadvantaged areas.

1.2 AIMS AND OBJECTIVES

The overall aim of this study is to identify the policy framework and associated measures that will deliver a sustainably competitive Northern Irish suckler beef and sheep sector that provides a fair income to productive farmers, enables processors to be internationally competitive whilst delivering public goods, particularly environmental and societal outcomes, which are valued by Northern Irish society and contribute to a vibrant economy.

Accordingly, this study explored several options for supporting the suckler beef and sheep sectors in NI to ensure that a sustainable and viable industry is maintained. It addressed the following objectives;

1. Identify the reasons for the recent decline in suckler cow numbers and variability in the scale of sheep production in NI.
2. Conduct a review of the impact of historical and current agricultural policies in beef and sheep producing countries on suckler cow and breeding sheep numbers, the environment and society.
3. Provide an evidence-based analysis of the impact of the existing suckler beef and sheep industry on the NI; a) economy b) environment c) society.
4. Undertake a review of the net benefit of beef and lamb production as a public good.

[1] See: https://www.daera-ni.gov.uk/publications/agricultural-census-northern-ireland-2019

5. Propose a range of options for support measures that will demonstrate the potential economic, environmental, and social outcomes (benefits) that can be delivered by a viable suckler beef and sheep industry.

1.3 GEOGRAPHIC DEFINITIONS

Throughout this report, there are numerous geographical terms used sometimes interchangeably. It is therefore important to define these terms at the outset:

- **United Kingdom (UK):** includes England, Scotland, Wales and Northern Ireland.
- **Great Britain (GB):** consists of England, Scotland and Wales; sometimes referred to as Britain.
- **Republic of Ireland (IRL):** sometimes referred to as Ireland or the Irish Republic and is included within the EU-27 (see below).
- **The European Union (EU):** as of 31st January 2020, it consists of 27 Member States. There are times in this report when the EU will be referred to when it had 28 Member States (i.e. when the UK was part of the EU). In this report, the EU is also referred to as the EU-27.
- **EU-26:** EU Member States excluding Ireland as well as the UK. Sometimes referred to as Continental EU Member States.
- **Non-EU:** in this study it is taken to refer to countries outside of the EU and the UK; periodically referred to as Rest of World (ROW).

1.4 REPORT STRUCTURE

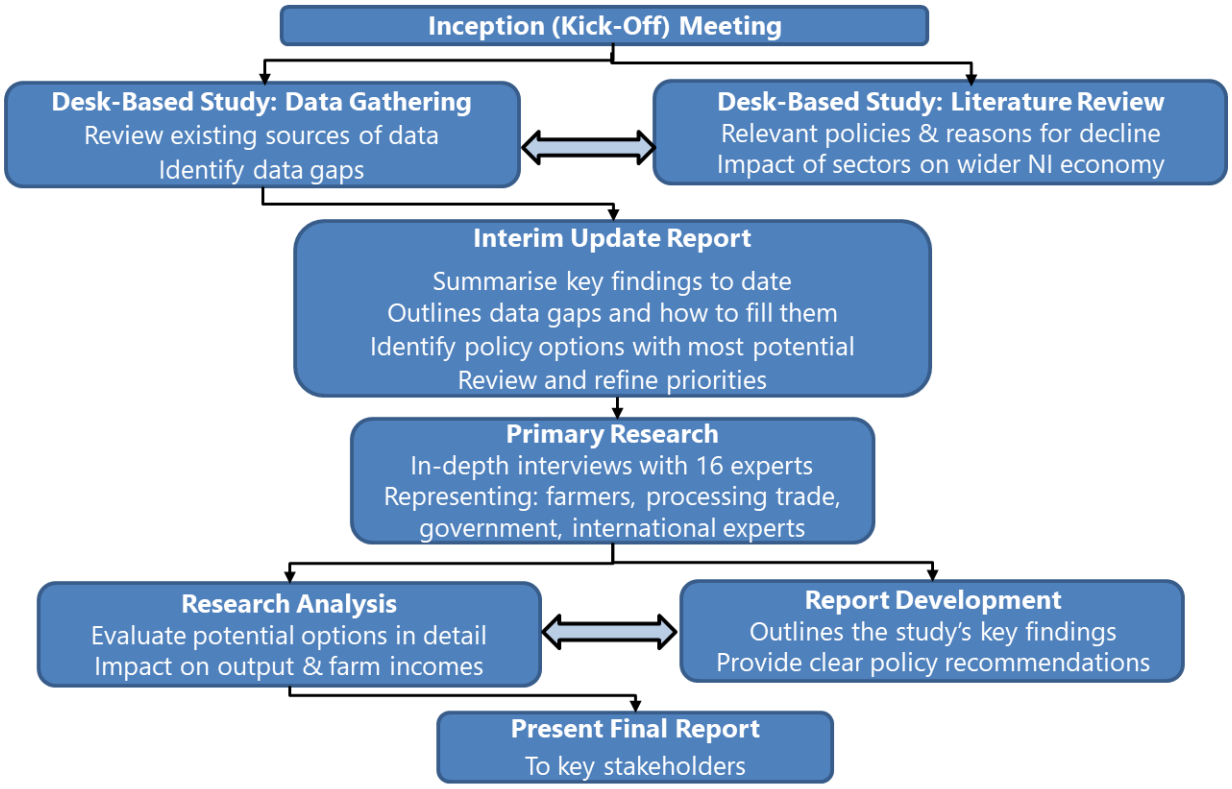
The structure of this report is as follows:

- **Methodology** (Chapter 2): details the methodological steps and research techniques, datasets and information sources that were used to fulfil the study's aims and objectives.
- **Economic Impact of the NI Beef and Sheep Sector** (Chapter 3): outlines the size of the NI suckler beef and sheep sector in the context of the wider agricultural sector both locally and across the UK. It also assesses the sector's contribution to NI employment.
- **Reasons for Decline and Performance Variability** (Chapter 4): examines the key reasons for the sector's struggles, particularly since the 1990s.
- **Review of NI Agricultural Policies and Reform Initiatives (**Chapter 5): is included to address objective 2 of this study but also to evaluate what has worked / not worked in the past. The review goes back to pre-1973 and also examines reform initiatives over the past decade or so.
- **Review of Policy Initiatives Elsewhere** (Chapter 6): again, addresses objective 2 and seeks to identify key lessons from elsewhere which NI could learn from. It looks at policies and selected strategic initiatives in the rest of the UK, the EU and some key non-EU countries.
- **Analysis of Future Policy Options** (Chapter 7): commences with an examination of DAERA's 2018 consultation. It then proposes desired outcomes that the sector should seek to achieve in the years ahead arising from research undertaken in this study. In that context, it assesses potential policy tools which could be deployed.
- **Future Policy Proposals** (Chapter 8): details the policy mechanisms that The Andersons Centre believes would achieve the desired outcomes bearing in mind wider economic, societal and environmental challenges. Whilst suckler beef and sheep are the main focus, the framework put forward has the potential to be applied to NI agriculture more generally.
- **Concluding Remarks** (Chapter 9): summarises the key conclusions and recommendations arising from this study. It also considers how future policy could be linked with other mechanisms to support the suckler beef and sheep sector.

2. METHODOLOGY

This Chapter outlines the key methodological steps deployed during this study which are summarised in Figure 2-1. Each step is subsequently outlined in further detail.

Figure 2-1 – Summary of Proposed Methodological Steps



Source: The Andersons Centre

2.1 METHODOLOGICAL STEPS

1 **Inception (Kick-Off) Meeting**: took place early on in the study to clarify in-detail the project's priorities, timings and existing data and other resources which could help the research. This meeting enabled the various stakeholders involved to become familiar with each other and to clarify the research priorities for this project. It facilitated a further explanation, where needed, on the research objectives and key topics of particular concern to participants. It also provided an opportunity for stakeholders to give feedback on the methodological approach as well as identifying any potential knowledge gaps where additional was required.

2 **Desk-based study:** consisted of two strands, summarised below;

a. **Literature review:** of existing research assessing the impact of various support systems that could be potentially applicable to the NI suckler beef and sheep sectors. This wide-ranging review focused not just on the UK, but also looked further afield to policy approaches in the European Union (including the Republic of Ireland (IRL)) as well as non-EU countries including Australia, Canada, Norway and Switzerland. Previous studies, where available, on the impact of the (suckler) beef and sheep meat sectors on

the Northern Irish economy were also examined. Where appropriate, existing studies on the impact of the beef and sheepmeat sectors in other locations (e.g. GB and Ireland) also formed part of this review.

The literature review also involved examining existing studies that attempt to value the provision of public goods associated with the agricultural sector in the UK, Northern Ireland and Ireland. This exercise included identifying and analysing key datasets which estimated how much the provision of public goods were worth to UK society.

b. **Data gathering:** as part of the preparations for, and outputs from, the Inception Meeting, numerous data sources of relevance to this study were identified. Some of these data sources were under the auspices of the LMC, but a wide variety of others were also identified and deployed during this study. The datasets consulted included;

   i. LMC data: including price reporting and slaughterings, market reports data, calf registrations and other data which the LMC had permission to make available for this project.

   ii. **DAERA:** was a vital source of information throughout this study particularly for information relating to top-level statistics on the performance of NI suckler beef and sheep farms (via the Farm Business Survey) and other information sources relating to the size and output from the NI beef and sheep sectors and their contributions to the NI economy. Livestock populations data arising from the Agricultural Census also formed a core part of the analysis.

   iii. **UK Governmental Departments and Agencies:** including Defra, the Scottish Government, the Office for National Statistics (ONS), the Department for International Trade and the Department for Digital, Culture, Media and Sport. Data from other agencies such as the AHDB were also consulted.

   iv. **Republic of Ireland sources:** included Teagasc, Department for Agriculture, Food and the Marine (DAFM), Bord Bia (the Irish Food Board) and research undertaken by Irish Universities.

   v. **Other international sources:** encompassed information from the European Union Institutions (EU Commission and EU Parliamentary studies), WTO data (particularly relating to agricultural policy) as well as information from the likes of the OECD (particularly in terms of economic performance). Arising from the literature review, datasets from numerous other Government agencies in other countries such as the US, Canada, Australia, Norway and Switzerland were also integrated into the research analysis.

The inputs from these sources were used to establish baseline data for Northern Ireland relating to the size and performance of the NI suckler beef and sheep sectors (no. of suckler cows, annual lamb crop, sheep numbers etc.). In some instances, output estimates were based on a three-year average, sometimes 2016 to 2018 and other times 2017 to 2019, depending on the data available at the time of writing. These are signposted as appropriate in the Chapters below.

As part of this exercise estimates on employment statistics and the contribution of the suckler beef and sheep sectors to the wider NI economy were also examined.

3 **Interim Report Update**: was provided to the Steering Group on the 24th of January 2020. This summarised the key findings from the literature review as well as some preliminary findings from the primary research (see next step). During this session, several potential policy mechanisms were discussed in the context of the desired outcomes that an agricultural policy for the NI suckler beef and sheep sector should achieve. This permitted the identification of policies which were deemed to be most appropriate for the sector which were subsequently analysed in further detail in the second half of the study. Based on the feedback received, slight refinements were made to the methodological approach in terms of the stakeholders to be consulted and the policy mechanisms to be examined. This meeting also guided the remainder of the primary research and subsequent analysis and report write-up.

4 **Primary Research:** the purpose of this step was to collect evidence from industry experts to help to determine which policies would be most appropriate for the NI suckler beef and sheep sectors. It also helped to address any data gaps from the desk-based research which remained outstanding (e.g. obtaining further insight on the actual impact of carbon sequestration on NI grassland). The feedback received helped to narrow-down the number of policy options to be examined in detail during the Research Analysis stage. All data collected during the primary research conformed to GDPR requirements and a Participant Consent Form was shared with each interviewee and their agreement was sought before proceeding with the interview. The sub-steps within this step included;

a. **List of potential interviewees:** were provided to the project Steering Group at the earliest possible juncture after the Inception Meeting. It included a diverse range of experts from across NI, GB, Ireland and Europe encompassing industry, academia, government bodies and other public agencies.

b. **Discussion guide development:** a draft document was compiled containing the key discussions points covered in the interviews to address the study's objectives. This gave scope to probe areas of particular interest arising from the desk-based study. It permitted more wide-ranging discussions with participants to cover areas of relevance which were picked up previously in the desk research.

c. Industry and stakeholder interviews: were carried out via a combination of telephone and in-person interviews. The interviews themselves consisted of in-depth discussions (mostly of 60 minutes' duration) with 15 industry experts, which covered not just Northern Ireland but suckler beef and sheep sectors elsewhere.

d. Supplementary input from experts: where deemed appropriate, industry experts, were asked to supply supplementary information to complement their interview input. Such information focused on specialist topics (e.g. sequestration or structural change in the industry) which was used to inform the analysis undertaken.

5 **Research Analysis:** was undertaken in conjunction with the report development stage. Using measures such as gross output[2] in addition to DAERA's Farm Business Data[3] and Farm Incomes in Northern Ireland[4] publications as well as LMC pricing datasets to establish performance baselines, this stage used economic modelling to ascertain the potential impacts of the selected policy measures on the NI suckler beef and sheep sector. Andersons' Northern Irish beef and sheep model farm (Andersons' NI Meadow Farm Model) was also used to demonstrate specific impacts of the proposed policy mechanisms on a 'typical' NI farm.

During this stage, projections were also provided on the value (benefit) of public goods arising from suckler beef and sheep sector activities (see 7.3.2 for more detail). Impacts on the wider economy were also analysed. For instance, the role of the beef and sheep sector in creating direct and indirect employment in the NI economy via the employment multiplier.

6 **Report Development:** the draft report built upon the Interim Update findings to include the key findings from the primary research. As opposed to summarising the primary research feedback in a single Chapter, the input received is interspersed throughout Chapters 4 to 8 below. This stage involved summarising the findings from the complete programme of research, which was used as a basis for the proposed policy framework (Chapter 8) as well as conclusions and recommendations (Chapter 9). In addition to the core focus of this study to review and evaluate the agricultural policy tools that could be deployed, the report also examined in detail the reasons for the decline in suckler cow numbers in Northern Ireland in recent years and the variability of sheep production (Chapter 4). It also documented the contribution of the beef and sheep sectors to the wider NI economy (Chapter 3).

The draft report was subsequently peer-reviewed by Professor Alan Matthews, an internationally-renowned agricultural policy expert. Feedback from this peer review was then incorporated into the report, before undergoing an internal proof-read and is submitted to the Project Steering Group.

7 **Report Presentation and Finalisation:** on 21st February, Andersons presented the study's findings to the Project Steering Group and other invited stakeholders. This session consisted of a comprehensive overview of the research findings followed by a Q&A session on the report's conclusions and recommendations. Where appropriate, feedback from this presentation was then incorporated into the main report. The final report was then submitted to the Project Steering Group.

[2] https://www.daera-ni.gov.uk/publications/ni-agricultural-incomes-2018

[3] https://www.daera-ni.gov.uk/sites/default/files/publications/daera/Farm%20Business%20Data%202018.pdf

[4] https://www.daera-ni.gov.uk/sites/default/files/publications/daera/Farm%20Incomes%20in%20Northern%20Ireland%202017-18%20Final.pdf

3. ECONOMIC IMPACT OF THE NI SUCKLER BEEF AND SHEEP SECTOR

3.1 NORTHERN IRISH AGRICULTURE IN A UK CONTEXT

Before assessing the reasons for the decline and performance variability within the NI agri-food sector, it is firstly necessary to briefly look at Northern Ireland beef and sheep farming in the context of wider UK agriculture.

At a UK level, agriculture contributed 0.6% to the Gross Value Added (GVA) in 2018. It is estimated to employ just over 1.5% of the workforce, based on Defra data[1]. As beef and sheepmeat forms a subset of the agriculture sector, it implies that its importance in the context of the wider economy is quite small. However, farming does not sit in isolation; it forms an integral part of the wider agri-food supply chain. When other sectors such as food manufacturing, retailing, catering and wholesaling are included, its contribution to GVA rises to approximately 7%. Over the past 20 years, there has been a general decline in the percentage of the UK economy comprised by the agri-food sector. But during the last decade it has been relatively stable in the range between 6% and 7%.

There are regional differences in the contribution agriculture makes to the economy. Table 3-1 below splits the UK figures out into its constituent Nations. It reveals that agriculture is much more important in Northern Ireland than in other parts of the UK and accounts for over 6% of employment. This does not include downstream sectors such as food processing which also make major contributions, especially in terms of beef and sheepmeat. This is examined in more detail below.

***Table 3-1*: Agriculture's Contribution to Regional GVA and Employment, 2018 (unless stated)**

Performance Indicator	England	Wales	Scotland	N. Ireland	UK
Share of Gross Value Added	0.5%	0.9%	1.1%	1.8%	0.6%
Share of Employment	1.17%	3.66%	2.57%	6.06%	1.53%

Source: StatsWales[2], ONS, DAERA and Defra

3.2 NI BEEF AND SHEEPMEAT SECTOR'S CONTRIBUTION TO EMPLOYMENT

According to a 2018 DAERA survey[3] (see Table *3-2*), 24,328 people are directly employed in NI agri-food processing, of which 5,657 are employed in beef & sheep meat and an additional 107 in animal by-products which is heavily influenced by beef & sheep. Previous estimates show that the industry works with around 30,000 farmers and indirectly contributes to another 43,000 jobs[4]. Aggregating these figures together, it would mean that the Northern Irish agri-food industry is connected to around 95,000 jobs, which equates to around 11% of the total employment in Northern Ireland[5]. The clear majority of these jobs are situated in rural areas.

In addition to direct employment, the beef and sheep processing sector's contribution to NI employment is much larger. This is captured by the multiplier effect estimated by the ONS to be 2.97[6] (Type I). So, each job created by the beef and sheep sector equates to 2.97 jobs in the supply chain (upstream and downstream) within the wider NI economy. Applying this estimate to the beef and sheep meat processing and animal by-products figures means that around 17,119 jobs arise from beef and

sheepmeat processing activities in Northern Ireland. This equates to 2% of the total employment in Northern Ireland[5].

Table 3-2: *Overview of Labour by Origin in Selected NI Agri-Food Processing Industries (2017)*

Sector	Total Employees	UK/IE		EU-26		Non-EU	
		No.	%	No.	%	No.	%
Animal by-products	**107**	98	91.6%	9	8.4%	0	0.00%
Bakeries	**4,416**	2,598	58.8%	1,761	39.9%	57	1.30%
Beef & Sheep meat	**5,657**	2,762	48.8%	2,691	47.6%	204	3.60%
Drinks	**1,421**	1,317	92.7%	94	6.6%	10	0.70%
Eggs	**400**	292	73.0%	107	26.8%	1	0.30%
Fish	**653**	495	75.8%	158	24.2%	0	0.00%
Fruit & Vegetables	**2,607**	1,242	47.6%	1,337	51.3%	28	1.10%
Milk & Milk products	**1,808**	1,609	89.0%	185	10.2%	14	0.80%
Pig meat	**1,665**	813	48.8%	850	51.1%	2	0.10%
Poultry meat	**5,594**	2,486	44.4%	2,575	46.0%	533	9.50%
Total	**24,328**	**13,712**	**56.4%**	**9,767**	**40.1%**	**850**	**3.50%**

Source: DAERA

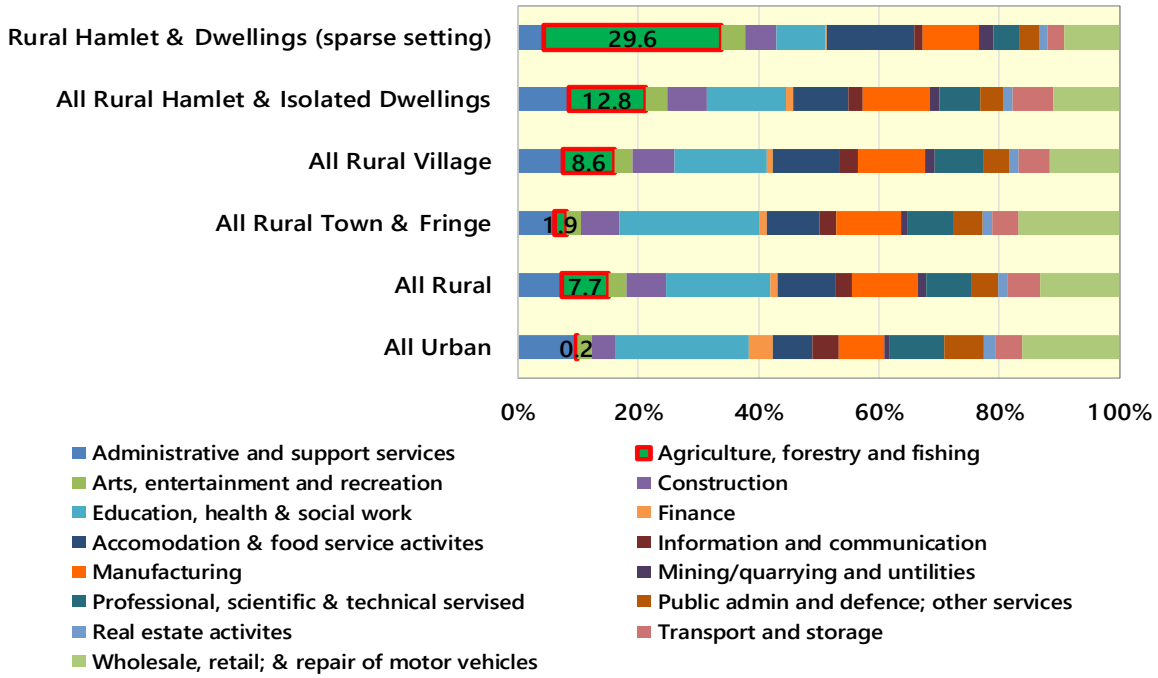
Note: sub-totals may not equal to totals due to rounding. % denotes percentage of row total (i.e. total employees)

In 2018, there were 14,438 farms with beef cows; 9,756 with breeding ewes. According to DAERA's statistical review of Northern Irish agriculture[7], there were just over 19,800 cattle and sheep farms in Northern Ireland in 2018, nearly three-quarters of which were designated as LFA. Cattle and sheep farms represent nearly 80% of total number of farms in NI (24,895). Whilst many of these will be part-time, the sector still plays a significant role in the NI economy. Although farming also has its own multiplier effect (1.68)[6], much of this will be associated with employment in the beef and sheepmeat processing sector which is already discussed above.

This contribution becomes even more pronounced when looking at employment in the rural economy. Figure 3-1 illustrates the ongoing importance of farming to the rural economy in England. Given that agriculture is even more important to the NI economy, it is arguable that farming would be even more prominent in terms of its contribution to employment in sparse settings and rural villages. It should also be noted that much of the economic activity in other rural sectors will be linked to the agricultural industry, whether that is downstream (e.g. employment in food processing) or upstream (e.g. supply of agricultural equipment and veterinary services).

[5] Based on total employment of 876,000 derived from NI Labour Force Survey, February 2020. See: https://www.nisra.gov.uk/publications/labour-force-survey-time-series-data-february-2020

Figure 3-1: Percentage of People Employed by Sectors and Rural-Urban Classification – 2015/16



Source: Defra

3.3 SIZE AND PERFORMANCE IN CONTEXT OF NI ECONOMY

It is not just in terms of employment that the contribution of the beef cattle and sheep sector is significant, it also makes a major contribution to NI's economic output in monetary terms. DAERA's estimated in December 2019[8] that the gross turnover of the NI beef and sheepmeat processing sector was just over £1.39 billion. However, this figure includes some double-counting because within the beef processing sector for example, Northern Irish companies will sell to each other and such sales would be counted twice using a gross-turnover methodology. A 2017 study conducted by The Andersons Centre on behalf of the LMC[9] suggests that the output of the NI beef and sheepmeat processing sector was £1.1. billion in 2016. This still represents a major contribution to the NI rural economy.

At the farm level, DAERA data suggests that the beef cattle and sheep sector combined account for just over 25% of NI's gross agricultural output in 2018 as illustrated in Table 3-3. However, finished cattle and calves (£467.3m) dominate this and represents nearly 22% of output in its own right. Apart from the milk sector (£679.9m) which represents almost 32% of gross output, the beef cattle sector is the next largest NI industry. Of course, the dairy industry is a major contributor to finished cattle and calves output. Looking at beef sired calf registrations in 2018 (345,398 births), almost 35% of these were from a dairy dam. This illustrates the extent to which the dairy sector is influencing NI beef production. Some perceive it to be a competitive threat to the suckler sector as it has grown significantly since 2014 when beef sired calves born to a dairy dam represented just over 27% of total beef calf registrations.

Table 3-3: NI Farm-Level Output by Sub-Sector (2018)

Sub-sector	Output (£m)	%
Finished cattle and calves	*467.3*	*21.9%*
Finished sheep and lambs	*78.3*	*3.7%*
Finished pigs	158.8	7.4%
Finished poultry	280.8	13.2%
Eggs	107.1	5.0%
Milk & milk products	679.9	31.9%
Livestock products (incl. minor products)	**1,785.2**	**83.7%**
Field crops	66.2	3.1%
Horticultural products	107.4	5.0%
Capital formation (breeding livestock)	79.2	3.7%
Other activities (e.g. contracting)	95.9	4.5%
Gross output	**42,201**	

Source: DAERA

As alluded to in Section 3.1, gross value added (GVA) is the key indicator of the contribution of a sub-sector to a wider sector or the economy generally. Whilst agriculture accounted for 1.8% of total GVA in Northern Ireland during 2018 (see Table *3-4*), it is important to note that it makes a significant contribution to other sectors. These include food & beverages which represent more than 5% of GVA. It also supports the wider food services and retail sectors, which taken together with other ancillary industries, account for 2.5% and 13.8% of GVA respectively. Therefore, when associated industries are considered, agriculture plays a critical role in Northern Ireland's economy.

Within this, the NI beef and sheepmeat sector is a significant contributor. Based on 2017 estimates, beef and sheepmeat processing (£172.1m) together with animal by-products (£10.9m) accounted for 20% of the 2017 GVA for agri-food processing sector. Aside from poultry meat (£201.2m) beef and sheepmeat is the biggest contributor to NI agri-food GVA, significantly surpassing milk & milk products (£116.9m).

Table 3-4: NI Gross Value Added (2018) – Selected Sectors

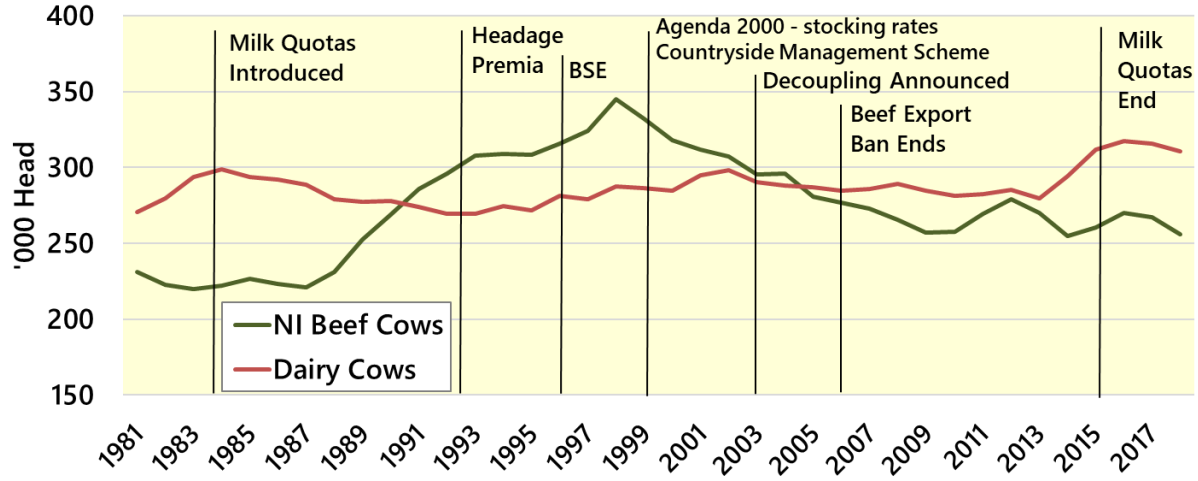
Sector	GVA (£m)	%
Agriculture, Forestry and Fishing	770	1.8%
Food, Beverages & Tobacco Manufacturing	2,186	5.2%
Accommodation and food services	1,046	2.5%
Wholesale & retail trade (incl. vehicles repair)	5,806	13.8%
Total – All Industries	**42,201**	

Sources: NISRA / ONS

4. REASONS FOR DECLINE AND PERFORMANCE VARIABILITY

In the last 47 years, the CAP has exerted a major influence on Northern Irish farming, particularly the suckler beef and sheep sector. However, there have been numerous other events which have shaped the sector as depicted in Figure 4-1 below for the beef sector. This chart posits NI beef and dairy cow populations in the context of key events which have taken place since 1981.

Figure 4-1: Northern Irish Beef Herd Trends – 1980 to 2018



Source: DAERA

Although the changing of market price support (including intervention) to direct payments in 1993 had a major influence on prices, beef cow numbers peaked at the end of the 1990s as the headage-based payments prompted farmers to go for volume. Since then, there has been a significant decline in output and whilst policies (particularly decoupling) have been influential, other factors have also been at play.

These are considered in further detail in the Sections below for the NI suckler beef and sheep sector generally, combining insights from both desk-based and primary research. Sections 4.1 to 4.5 focus primarily on suckler beef but additional comments on sheep are included as appropriate.

4.1 POOR PROFITABILITY

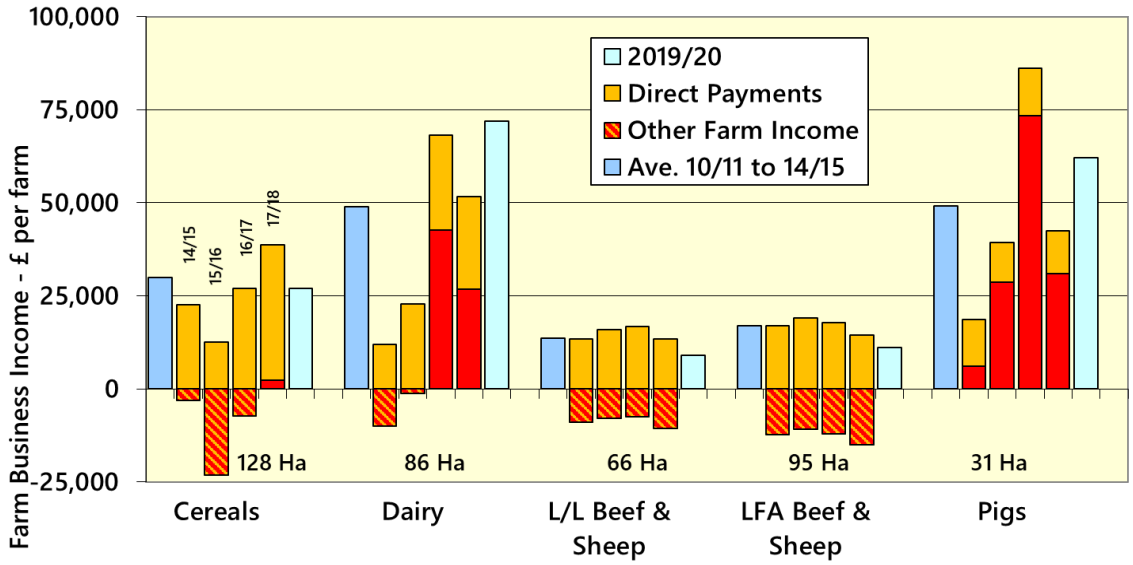
The core driver of competitive performance in any industry is the extent to which it is profitable or not. Numerous studies reviewed in Section 5.2 highlight that suckler beef and sheep farms have struggled in terms of profitability for many years. This reason was also frequently cited in the primary research as the major reason underlying the sector's decline.

Looking at the past decade, Figure 4-2 gives a breakdown of profitability by sector in Northern Ireland and shows the extent to which beef and sheep farming has under-performed. The figures are farm-level profits, representing the averages for part and full-time farms (any business with over half a Standard Labour Requirement (SLR) (1 SLR = 1,900 Hrs/yr)). The measure is Farm Business Income (FBI). The average farm size for each category is shown (and relates to the 2017/18 year). An average is firstly given for the five years 2010/11 to 2014/15. The data for the years thereafter has been split into the contribution from two profit centres i.e. direct payments and other farm income (including income from

agriculture). It shows how important direct payments are to the profitability of NI farming. The final set of columns are Andersons' estimates for 2019/20 sector incomes (the year just ending).

Without direct payments, beef and sheep farming would be unprofitable in Northern Ireland and this trend extends back over a long period. Whilst other sectors have experienced cyclical challenges, most notably dairying, the overall recent performance has been much more positive.

Figure 4-2: NI Farm Business Income 2010/2011 to 2019/20

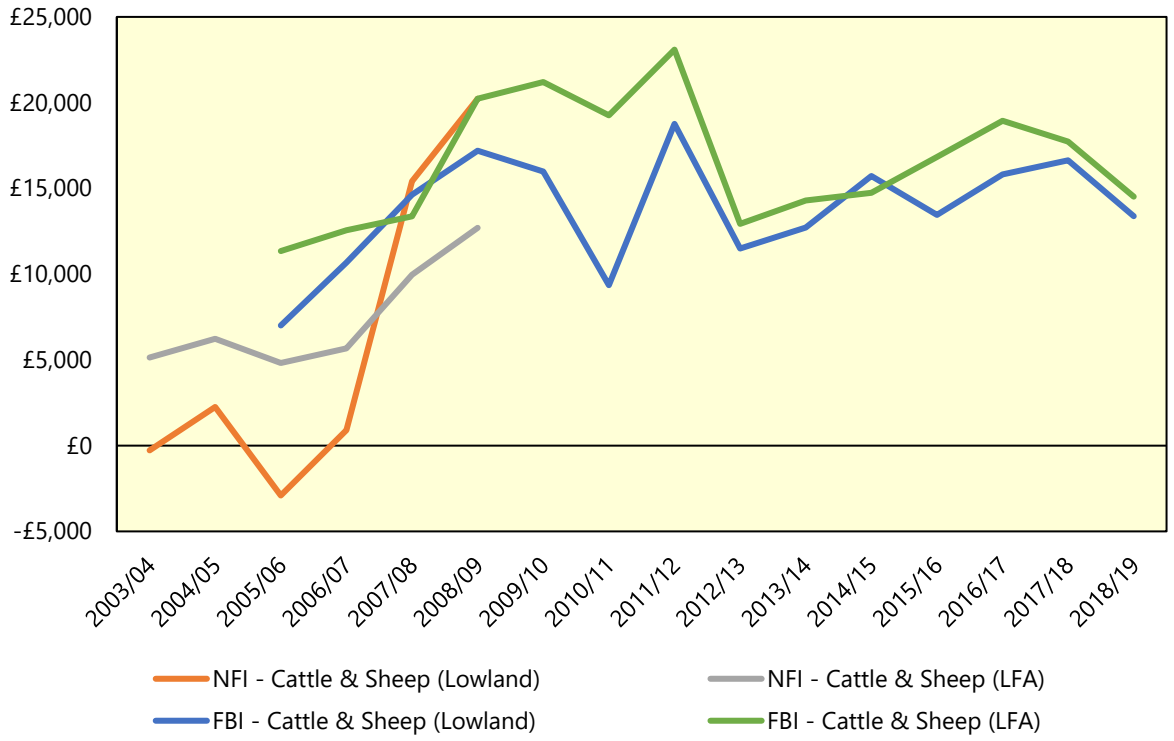


Sources: DAERA Farm Business Survey and The Andersons Centre

Looking back further to 2003/04, Figure 4-3 shows farm income trends for cattle and sheep farms using both Net Farm Income (NFI) and Farm Business Income (FBI) measures. NFI was the old measure of farm income used to 2006/07. It represents the return to the farmer and spouse for their manual and managerial labour and tenant-type capital invested in the farm business and also deducts an imputed rent from owner-occupied land. FBI on the other hand represents the return to all unpaid labour, not just the farmer and spouse and it treats the tenure of farms as it is: tenants as tenants, owner occupiers as owner occupiers and those with both types of tenure as mixed[10].

Using these measures, the data show the NI cattle and sheep farmers struggled during the 2000s as the industry struggled to overcome the effects of BSE and was left reeling in the aftermath of the foot-and-mouth outbreak of 2001. Sterling was also strong during this period which made exports to the EU less competitive and lowered support payments to NI agriculture which are initially denominated in Euro and converted to Sterling each year. Without direct payments, many of these businesses have become unviable and were barely able to stay afloat even with support. It was little surprise therefore that the numbers of beef cows and sheep were declining sharply during this period.

Figure 4-3: Cattle and Sheep Farm Income Trends in Northern Ireland 2003/04 to 2018/19



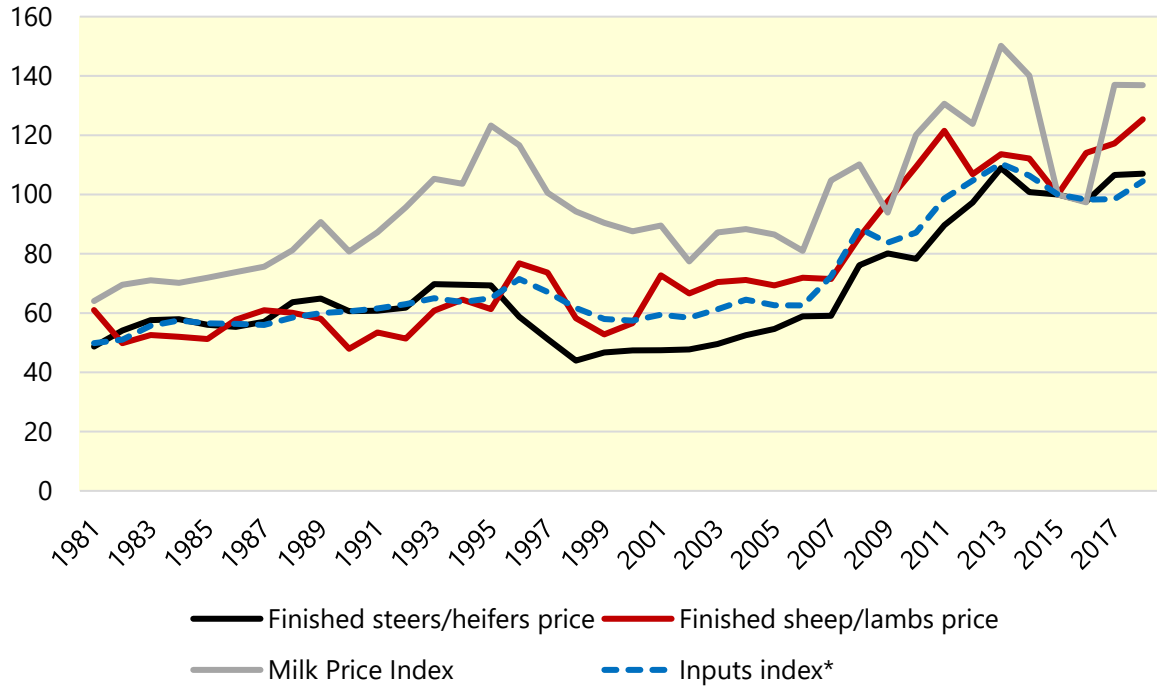
Source: DAERA

FBIs in cattle and sheep enterprises whilst lower than other sectors have been much more stable. As Figure 4-4 illustrates, based on DAERA price index data, the rise in prices for cattle and sheep have been less pronounced and less volatile than milk price, particularly during the past decade. That said, input costs increases surpassed the cattle price index from 1996 and stayed ahead until 2013. Whilst cattle prices moved ahead of input costs during 2016/17, since 2018 the input cost index has once again moved ahead of cattle prices. This has contributed to the squeezes in farm incomes as discussed above.

The decline in FBI during 2012/13 coincided with a significant decline in steer prices which arose as a result of the horsemeat crisis (as depicted in Figure 4-5). There was a slight blip between 2014/15 and 2015/16 for lowland cattle and sheep farms and this was mainly linked to decreases in direct payments brought about by a relatively strong Sterling[11].

Since 1996, sheep prices have also risen more than cattle prices. Again, this is evident in Figure 4-4 which is index-based. It is also evident in Figure 4-5 which is based on actual prices since 2009 with the 12-month rolling average for lambs consistently higher than beef over most of that period.

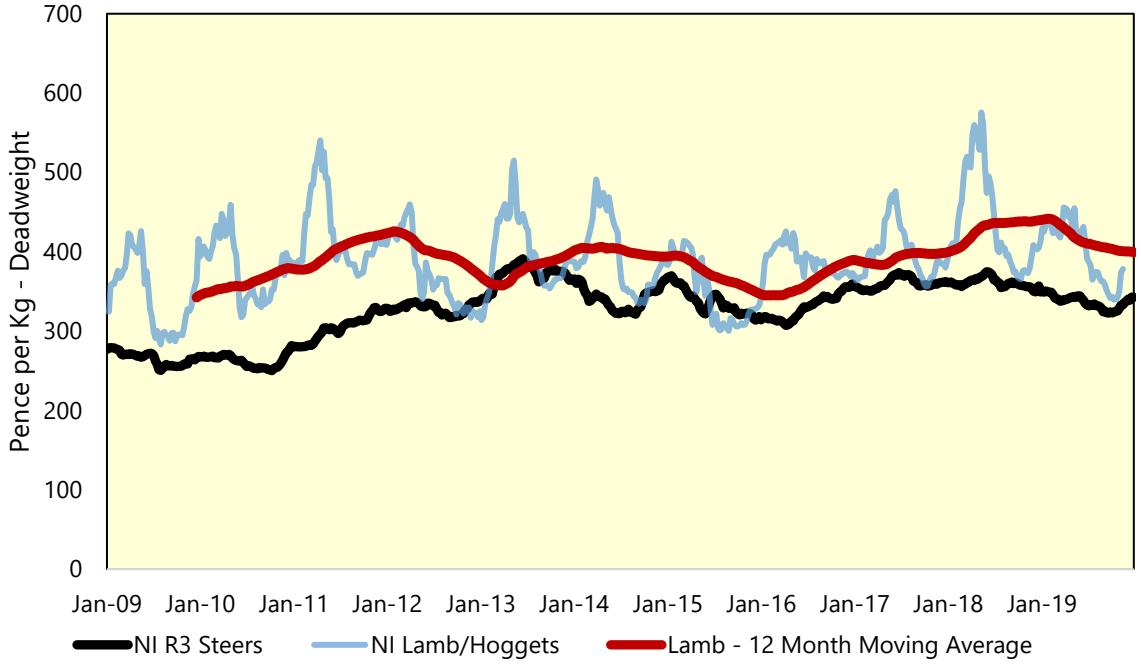
Figure 4-4: Index of NI Cattle, Sheep and Milk Prices Since 1981 (2015 = 100)



Source: DAERA

* Does not cover all inputs. It comprises feedstuffs, seeds, fertilisers and lime, and marketing expenses.

Figure 4-5: Beef and Lamb Prices in Northern Ireland Since 2009



Source: LMC and The Andersons Centre

4.1.1 The Rise of Dairy-Bred Beef

As alluded to above, the relative attractiveness of dairying has meant that suckler farming has become less attractive. The primary research feedback has also indicated that there has been a significant growth in the sales of robotic milking systems in recent years. Anecdotal evidence suggests that a significant proportion of these sales are to suckler farmers. Guided robotic milking systems are seen as particularly attractive and are perceived to be relatively straightforward for a new entrant with little experience of dairying to manage. This presents an added challenge to the suckler sector and the growth of dairy beef is seen by many to be a major threat to the suckler sector. This is partly because dairy-beef production is more closely associated with price trends and the competitive position of milk production, where NI is quite well-positioned and prices have been relatively good recently. Therefore, irrespective of supply-demand price signals in beef, output from dairy-beef has been increasing, thus exerting added pressure on suckler beef. According to LMC calf registrations data, approximately 36% of beef calf registrations in 2019 were from a dairy dam. This illustrates that dairy-beef now accounts for a substantial proportion of NI prime output. In the Republic of Ireland, dairy-bred beef accounts for nearly half of that country's beef output[12]. In Northern Ireland, the importance of dairy-bred beef would be similar, when culled dairy cows are taken into account.

4.1.2 Competition from Abroad

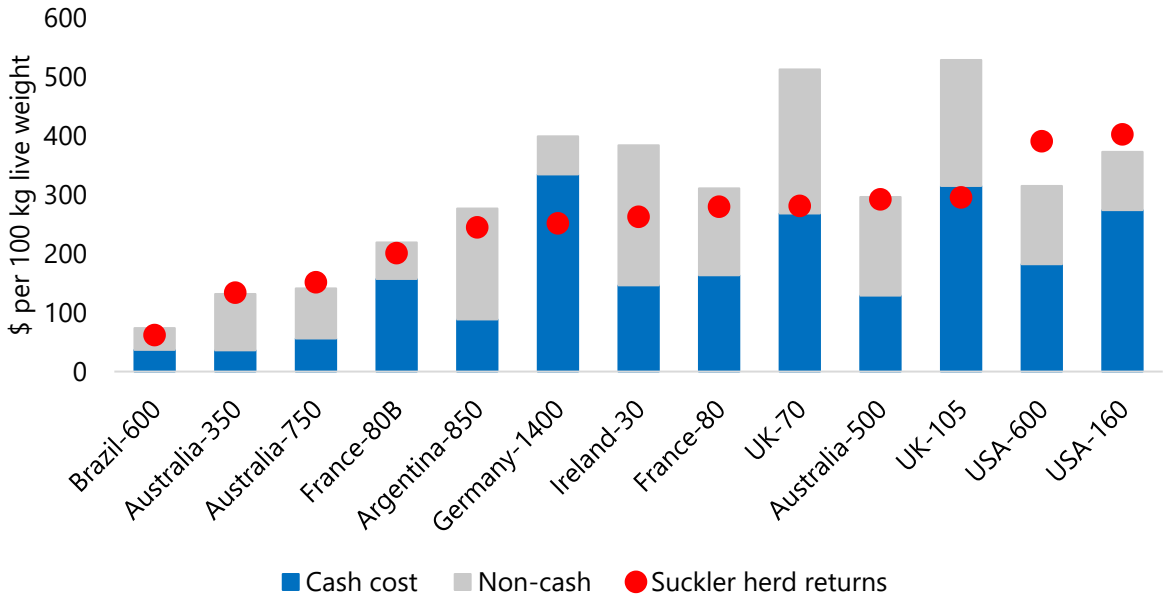
It has been well-documented that the UK beef market has been coming under pressure from imports from overseas producers, particularly Latin America. Under the EU regulatory framework to date, their influence was curtailed due to quota limits on the volumes that could be imported as well as the standards employed by the EU, which many overseas producers struggle to conform to. That said, Northern Irish beef competes with non-EU material on lower value cuts and offal in overseas markets (e.g. in Asia). The lower prices in these markets has a notable impact on the total value which can be derived from each carcase produced in NI, thus dragging down the prices which farmers receive. This, in turn, can exert a negative influence on output.

Figure 4-6 provides an international comparison of the cost of production for beef based on results provided via the Agri-benchmark international comparison network and reported in the AHDB Stocktake report 2016 . The data shown are for 2015 and compare the suckler herd returns (weaned calves, culled cows) on the basis of cash costs (including feed & forage, veterinary & medicine etc.) and non-cash costs (including family labour, imputed owner-occupied land costs and depreciation). The numbers after each country indicate the amount of cows put to the bull each year on each reference farm which aim to be "typical" of the production systems and profitability in each country. It must be emphasised that the CAP payments received by EU countries each year are ***not included*** in the returns figures.

Whilst the data do not include a Northern Irish farm for comparison, two UK herds are included. The results show that the UK is the highest cost producer and whilst Sterling was strong in 2015 (thus making exchange rates unfavourable), the UK's production cost base is significantly higher than key global competitors such as Brazil, Argentina, Australia and the USA, particularly in terms of non-cash costs. Notably, the UK's cost base is significantly higher than that of the Republic of Ireland (Ireland) despite both UK farms having a larger herd size and comparable returns. In recent years, nearly 70% of all the imports of beef into the UK were from the Republic of Ireland. Therefore, the production costs of the UK vis-à-vis Ireland is particularly important.

Northern Ireland is arguably the most exposed part of the UK when it comes to competition from Ireland. This is also reflected in prices in NI being generally lower than in GB, as depicted in Figure 4-7 which shows price trends from January 2015 to October 2019. In future, production cost competitiveness versus Ireland is likely to become even more crucial. This will be particularly so if the level of support in the UK differs significantly from that of the EU CAP. The NI/IRL Protocol will also mean that Northern Ireland will be more closely aligned to EU price trends than any other part of the UK.

Figure 4-6: Suckler Herd Cost Comparison - Selected Countries (US$/100kg live weight)

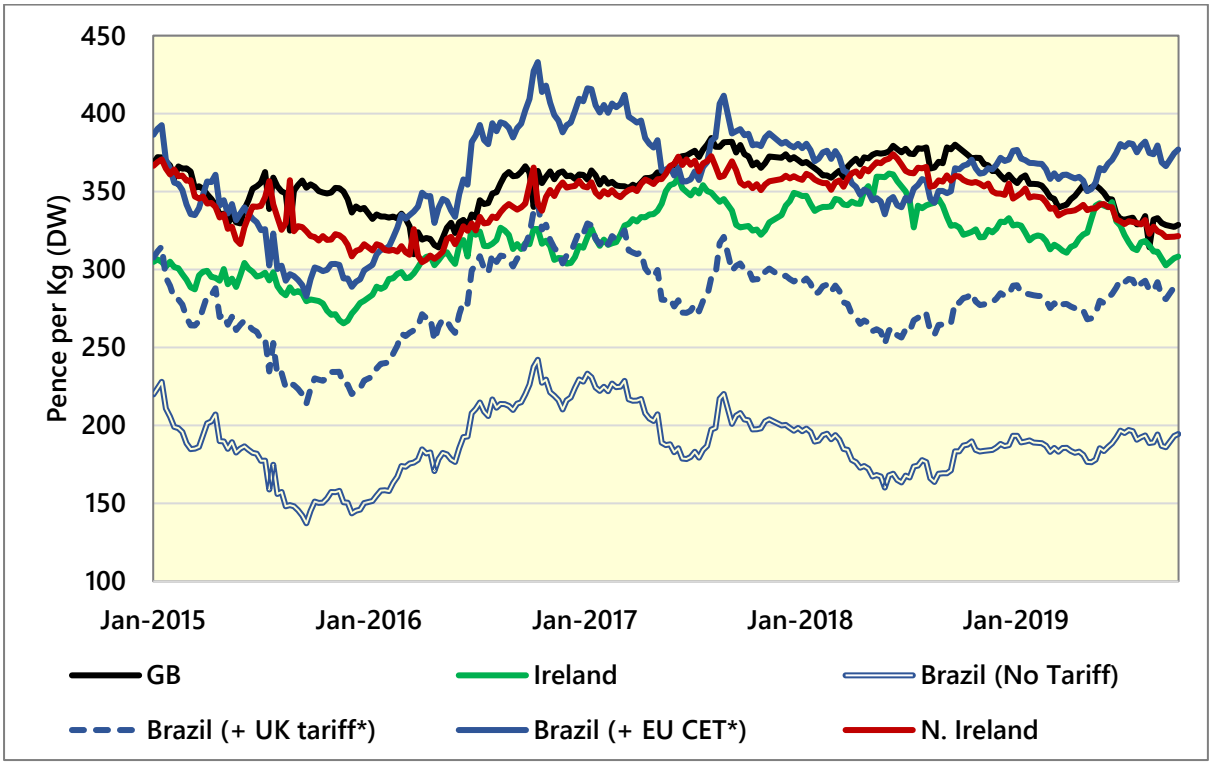


Sources: Agri-benchmark and AHDB

* Compiled in order of suckler herd returns

Note: numbers after each country/reference farm denote the number of cows put to the bull each year.

Figure 4-7: International Comparison of Steer (R3) Deadweight Prices – 2015 to 2019



Sources: Bord Bia / LMC / The Andersons Centre

Note: * Tariffs on Brazilian imports: Based on carcase beef (UK 6.8% + €0.93/kg) (EU CET 12.8% +€1.768/kg)

4.2 POLICY IMPACTS

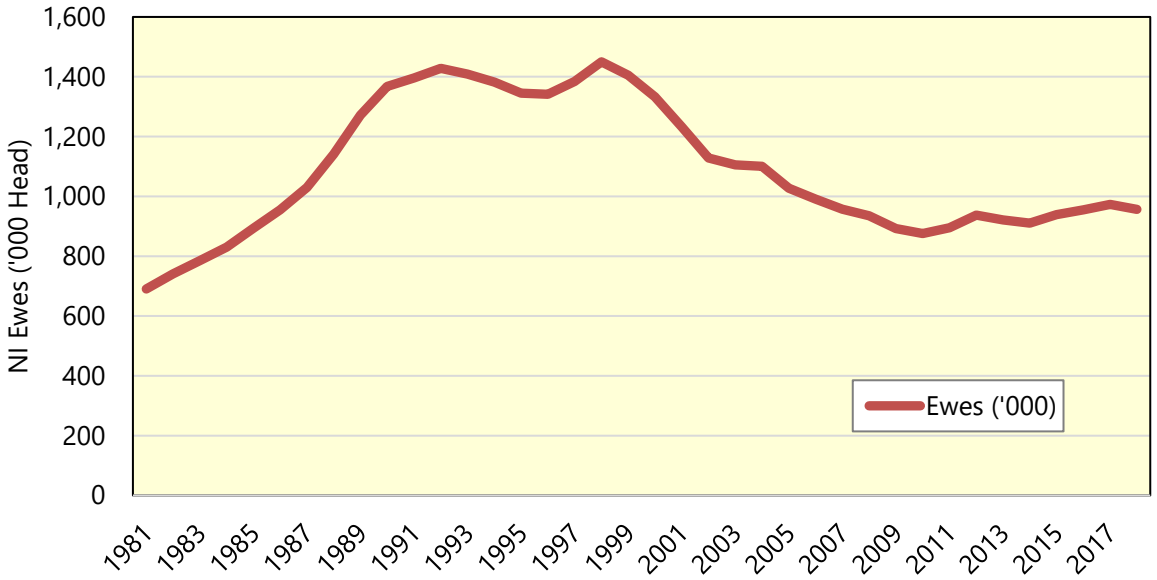
As shown in Figure 4-1 above for suckler beef cows, numbers in Northern Ireland continued to rise until the mid-1990s, thus illustrating that the largescale removal of market price support since 1992 did not give rise to a decline. On the contrary, the CAP policies exercised during the 1990s (headage payments) resulted in increased production as farmers went for quantity and not quality. The result was a decline in profitability as prices lowered due to increased production and less competitive farmers continued to be active. This also contributed to an increased range in performance between the top and poorer performing farms.

The Agenda 2000 reforms and the introduction in stocking rates were thought to have some impact on numbers. However, it was the introduction of decoupling in the mid-2000's which most industry experts believe is the most influential reason as to why numbers declined since the late-1990s and have remained low since. This issue is explored in more detail in Chapter 5 which examines how NI agricultural policy has evolved in the past 50 years. However, policy issues are not the only reason why the sector has been in decline. Other factors are at play which are discussed below.

Policy has also been a major driver of sheep population trends. As Figure 4-8 depicts, ewe population ewe numbers grew steadily from the early 1980s as the EU's support scheme for sheep, encompassing headage payments, became fully operational. Increased demand from the French market in particular was a major driver of output growth. Ewe numbers peaked in the late 1990s as demand for lamb increased in the aftermath of the BSE crisis.

However thereafter, ewe numbers declined considerably until 2010. Again, stocking rates limits introduced in conjunction with the Agenda 2000 reforms and the onset of decoupling (from 2005 onwards) were especially influential in lowering ewe numbers.

Figure 4-8: NI Ewe Population Trends 1981 - 2018



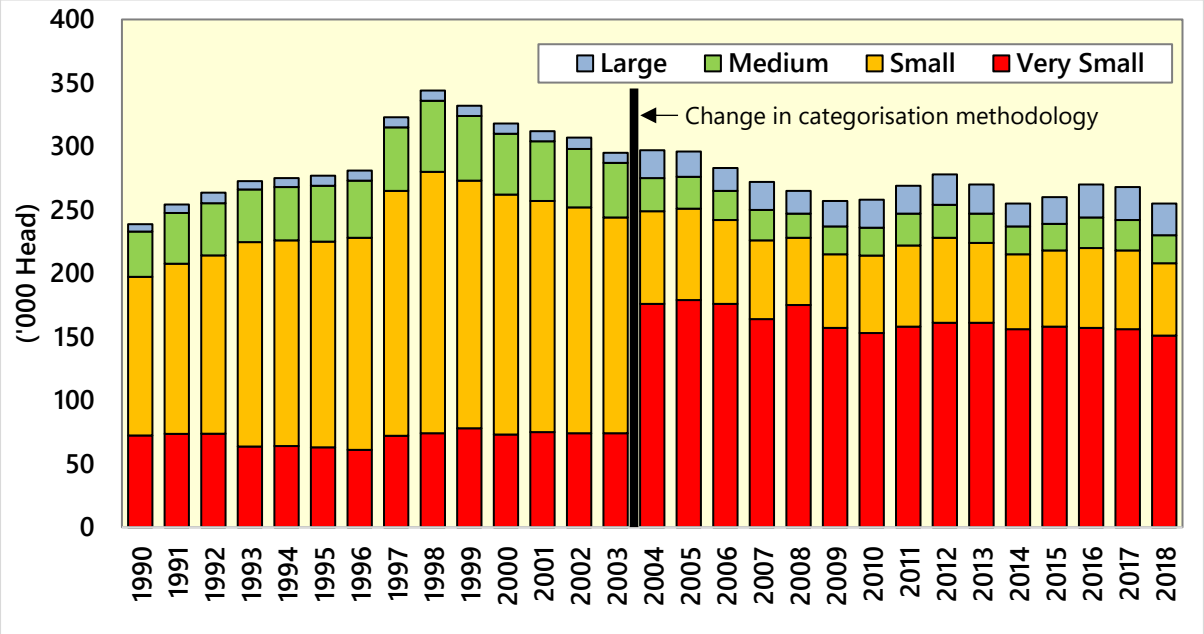
Sources: DAERA / LMC

4.3 STRUCTURAL CHALLENGES

As Figure 4-9 clearly illustrates, most cattle and sheep farms in Northern Ireland are either small or very small and together these two categories account for over 80% of beef cows in the region. Added to this, and as depicted in Figure 4-10, these units also tend to be run by older farmers. Indeed, DAERA data suggests that an NI farmer's average age is 59 years[13]. Although it is arguable that there are examples of some very proactive and business-focused elderly farmers, such farms have a lower propensity to innovate and be productive. Over time, this can also contribute to a stagnation or a diminution in the numbers of livestock kept on such farms, which the primary research suggests has been happening since the introduction of Decoupling (2005). The data presented in Figure 4-9 appear to substantiate this.

It is also noteworthy that whilst 79% of farmers aged 65 or over operate on very small farms, 77% of farmers under 40 also operate on very small farms. This indicates that many younger farmers do not have opportunities to expand and there is a strong need for an intergenerational transfer of land to take place (i.e. greater land mobility is required). That said, many of the over 65 farmers will have a son or daughter as a successor but may not yet be in a position to transfer over the land.

Figure 4-9: Beef Cow Populations Segmented by Farm Size



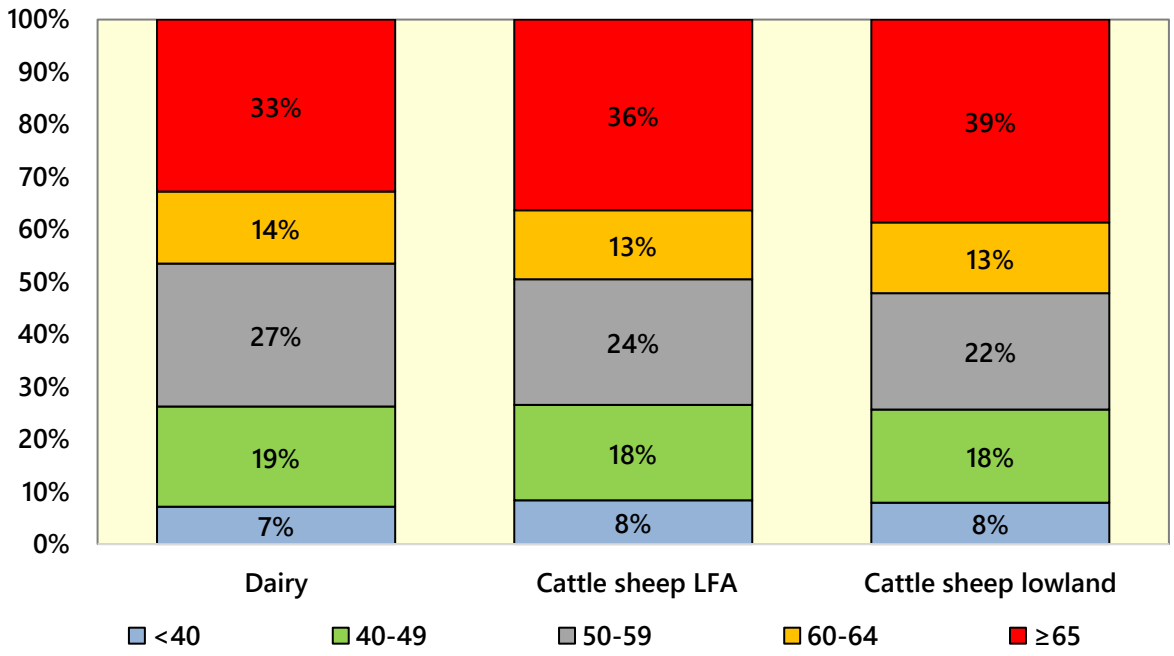
Source: DAERA

Note: Very Small denotes <1 SLR; Small (1-<2); Medium (2-<3), Large (3-<5), Very Large (≥5).

The perception is that farmers in dairying, poultry or pig units tend to be younger and arguably more proactive when it comes to growth. Figure 4-10 suggests that for dairying the proportion of farmers aged 65 or over (33%) is lower than in the beef and sheep sectors. That said, dairying also appears to be struggling to attract young farmers.

Looking at the sheep sector, despite lamb prices being relatively favourable since the mid-1990s in comparison with beef (see Figure 4-8 above), the primary research evidence from this study suggests that many farmers perceive a significant 'hassle factor' with sheep as they can be quite labour intensive at certain periods of the year. As farmers get older, some of them prefer to have a few cattle and hence ewe populations continued to decline since the 2000's despite performing relatively well price-wise.

Figure 4-10: Breakdown of NI Grazing Livestock Farms by Age



Source: DAERA

Table 4-1: Northern Ireland Farm Structure by Business Size and Age (2016)

Age Category	Total No. of Farms	% Very Small	% Small	% Med/Large	% All
Under 25	249	1%	1%	2%	1%
25-34	1,091	5%	5%	6%	5%
35-44	2,820	12%	15%	17%	13%
45-54	5,285	23%	29%	27%	24%
55-64	5,357	24%	26%	27%	24%
65 & over	7,249	36%	24%	21%	33%
Total	**22,051**	**100%**	**100%**	**100%**	**100%**

Source: DAERA, EU Farm Structures Survey

In comparison with 2000[14], the percentage of farmers in Northern Ireland aged 65 or over has risen from 24% to 36% in 2018. This signifies that the age profile of farmers is getting older and has coincided with a stagnation of suckler cow and sheep populations.

4.4 BSE Crisis

The 1996 BSE crisis represented a major disaster for the UK beef industry as consumption declined significantly and export bans were placed on UK produce as reported by a Parliamentary Enquiry published in March 1998[15]. Between 1995 and 1996, UK beef consumption fell by 18% with a further 6% decline taking place the following year before domestic demand stabilised. At the same time, the

absence of an export market (which equated to nearly 30% of domestic production) coupled with poor demand meant NI prices plummeted and fell by 26% between 1995 and 1998, 5 percentage points more than the average UK decline (-21%). These declines are also illustrated in Figure 4-4. The problems were exacerbated by the strengthening of Sterling in 1997 which decreased the levels of direct payments (which were denominated in European Currency Units (ECU), a precursor to the Euro) and made imports more competitive on the British market[16]. Furthermore, beef over 30 months was deemed ineligible for human consumption which also affected farmers' incomes.

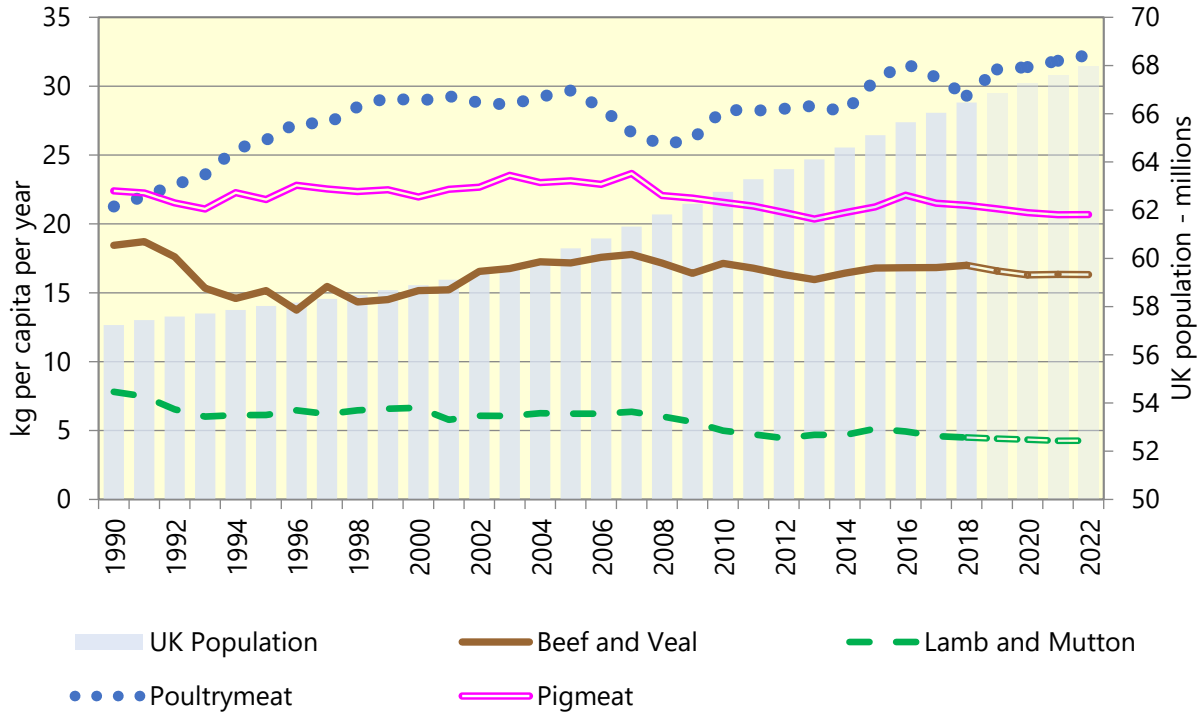
A 2000 Parliamentary Enquiry[16] noted that Northern Ireland was more severely affected by the BSE crisis and ensuing export ban than other parts of the UK as 56% by volume of NI beef was exported outside of the UK prior to the ban. It also noted findings from a report into the economic impact of the BSE crisis by DTZ Pieda Consulting which concluded that the effects in Northern Ireland were worse than the rest of the UK and that specialist beef producers were particularly badly hit. This study also noted some positive substitution effects (i.e. farmers switching from beef production to other livestock species) and this is likely to have contributed to the growth in sheep numbers during this time. This was also aided by strong lamb prices during this period.

The export ban on beef (apart from a few strict derogations) stayed in place until 2006 when the EU Commission[17] announced that it was lifting the ban imposed on the UK. Understandably, this was greeted positively at the time in Northern Ireland but did not redress the decline in beef cow numbers experienced during the 2000s.

4.5 DECLINING CONSUMPTION

As depicted in Figure *4-11*, per capita beef consumption today in the UK is lower than in the mid-1990's. At a UK level, the BSE crisis has been influential and although a recovery took place from 1998 to 2007, per capita has trended lower since the onset of the financial crisis. This is significant for Northern Ireland as the UK accounts for ~80% of output. In contrast, poultry meat consumption has risen as it is perceived as a relatively cheap protein source and also meets consumers' demand for convenience and its perceived healthy status. Red meat is seen as less compatible with modern lifestyles, and has witnessed declines in consumption. The lamb sector has experienced a more pronounced decline and this segment has struggled with high prices and has been less successful in addressing convenience. In the years ahead, the red meat per capita consumption is forecast to remain broadly stagnant whilst poultry is projected to increase further. Sluggish domestic demand is seen by many as a key reason for the continued decline in suckler beef cow and sheep numbers and this trend has been exacerbated by more recent dietary trends and consumer concerns around emissions which are discussed below.

Figure 4-11: UK Meat Consumption per Capita 1990 to 2022



Sources: Defra / ONS / Andersons

Rise of Alternative Diets

In recent years, there has been a trend towards alternative diets which encompass vegetarianism (does not consume meat or fish), veganism (does not consume any animal products) and 'flexitarianism' (defined primarily vegetarian but occasionally eats meat and fish)[18]. The availability of statistics on this topic is somewhat limited but in 2017 the Food Standards Agency (FSA)[19] conducted a study on diets in England, Wales and Northern Ireland. It found that vegetarians accounted for 3% of respondents whilst 1% considered themselves as vegan.

However, more recent evidence suggests that veganism is becoming more popular. A 2019 Kantar study[20] provided estimated breakdowns of the UK adult population based on dietary characteristics. These breakdowns are extrapolated to the 2018 UK population[21] as shown in *Table 4-2* below. It estimates that 2.6% of the UK population (1.7m) identify as vegan with vegetarians & pescatarians together accounting for 5% (3.2m) and flexitarians (6.2m) representing 9% of the population. Arguably, it is the rise of flexitarianism and the fact that many consumers tend to have additional meat-free days each week, which is having more of an influence than veganism.

Meat eaters (79% (52.4m)) are still the largest dietary grouping but the results show the extent to which alternative diets have risen, especially amongst the young as one-third of vegans are millennials. Notably, the Kantar article also noted that when an average person's food diary is consulted, under 1% of the population is vegan based on what people are actually consuming. This suggests that there is a discrepancy between what people say and what people do but should be nonetheless concerning from a meat industry perspective.

Added to this, there are also a range of plant-based alternatives to beef burgers and other similar products emerging. Whilst these may not year have had a significant quantitative impact on the UK market, the segment is growing rapidly and could constitute a major threat in the future.

These trends are also feeding into the declining per capita consumption figures discussed above and represents a notable erosion of meat demand in the UK market which ultimately exerts pressures on Northern Irish suckler beef cow and sheep populations. Mitigating the impact of this trend represents one of the major challenges for the industry as plant-based meal occasions have grown by 37% in the last four years and flexitarianism is becoming increasingly mainstream.

Table 4-2: UK Population Segmented by Diet – Based on Self-Defined Responses

Dietary Type	Estimated No. of Consumers	% of Population
Meat Eater	52.4	79%
Flexitarian (or Semi-Vegetarian)	6.2	9%
Pescatarian	1.4	2%
Vegetarian	1.8	3%
Vegan	1.7	3%
Other	3.0	4%
Total	**66.4**	

Sources: Kantar World Panel, ONS, The Andersons Centre.

Note: based on food-diary studies of actual purchases (<1%) of the UK population is vegan.

4.6 CONCLUDING REMARKS

Although prices have improved for suckler beef and sheepmeat in the past decade, its relative performance has been sluggish when assessed across several factors, most notably profitability (versus milk which has contributed to the growth of dairy-beef). Consumer choices at a UK level have been heavily influential particularly in terms of prices and consumption (versus poultry), the impact of major crises (particularly BSE) as well as the rise of alternative diets which are linked to consumer perceptions around health, convenience and increasingly, the environment. Furthermore, structural issues including smaller farm sizes and age (cattle and sheep farmers tend to be older) also contribute to the sector's challenges.

Although beef cow and sheep numbers have stabilised somewhat in the last decade, there is significant concern amongst many in the industry that with Brexit, trade friction could become a major issue, particularly with GB which is by far the most crucial market. Trade with continental EU markets is also a concern. Even with the Northern Ireland / Ireland Protocol in place, shipments to the Continent could become affected by delays on the Dover-Calais route in particular. This could contribute to a further decline in sales, and livestock numbers in turn, over the longer-term.

It is against this backdrop that policy-makers must formulate future policy and identify a road-map towards the future competitiveness and viability of the NI suckler beef and sheep sector.

5. REVIEW OF NI AGRICULTURAL POLICIES AND REFORM INITIATIVES

This Chapter reviews the major policies which have influenced the NI suckler beef and sheep sector over the past 50 years and considers the extent to which these have driven the trends in suckler cow and sheep numbers. Accordingly, it includes policies which were in place before the UK entered into the European Economic Community (EEC) as it was then called in 1973.

5.1 NORTHERN IRELAND AGRICULTURAL POLICIES

5.1.1 Before EEC Accession (pre-1973)

Before the UK joined the EEC (and the CAP) in 1973, UK agricultural policy, including that of Northern Ireland, was dominated by a deficiency payments system[22]. Farmers received minimum guaranteed prices for their produce. If market prices were below the target price set (usually annually), the Government would make up the difference, thus enabling farmers to receive a guaranteed minimum price, whilst consumers were able to avail of lower food prices at the point of purchase. If market prices were above the target price, then no payments would be made.

From a Northern Irish perspective, the system appeared to work quite well and helped to drive significant increases in both cattle and sheep production since World War 2[23]. As target prices under the deficiency payments' scheme were devolved in 1954, with Northern Ireland receiving somewhat lower prices than producers in GB as well as incurring additional costs to import feedstuffs for example, additional grants were made available to Northern Irish agriculture to mitigate these disadvantages[22]. These grants were spent on initiatives to support growth in beef production and the marketing of agricultural produce. This government support also gave active encouragement to invest capital to promote the modernisation of farming in Northern Ireland (e.g. support to construct farm buildings) also assisted increased output and productivity.

Both primary and desk-based research undertaken in this study suggest that the deficiency payments and associated support schemes worked well in Northern Ireland from a farm output and prices viewpoint. However, viewed from today and the reality of the WTO obligations on limitations to agricultural support which are deemed to be trade distorting (this includes deficiency payments), then the scope to introduce such payments is limited to approximately 5% of agricultural output[24], if the support is non-product specific. If the support is product-specific, then such support is limited to 5% of the value of output for that commodity (product). Given the extent to which beef and sheep farming in Northern Ireland would be unprofitable if it were not for CAP support, it is not viable for future agricultural support in Northern Ireland to be based on deficiency payments alone. It would also give rise to concerns if farmers received guaranteed prices applied in a broad-brush manner so that there would be little incentive to produce higher quality output or consider wider environmental and societal issues. Furthermore, as evidenced by the significant production increases since WW2, it could incentivise additional production which would create additional price issues.

Therefore, whilst there might be scope for some price support in marginal circumstances (as long as they are under WTO limits), this support mechanism should not be considered as a viable "core pillar" of Northern Irish agricultural policy post-Brexit.

5.1.2 Post EEC Accession

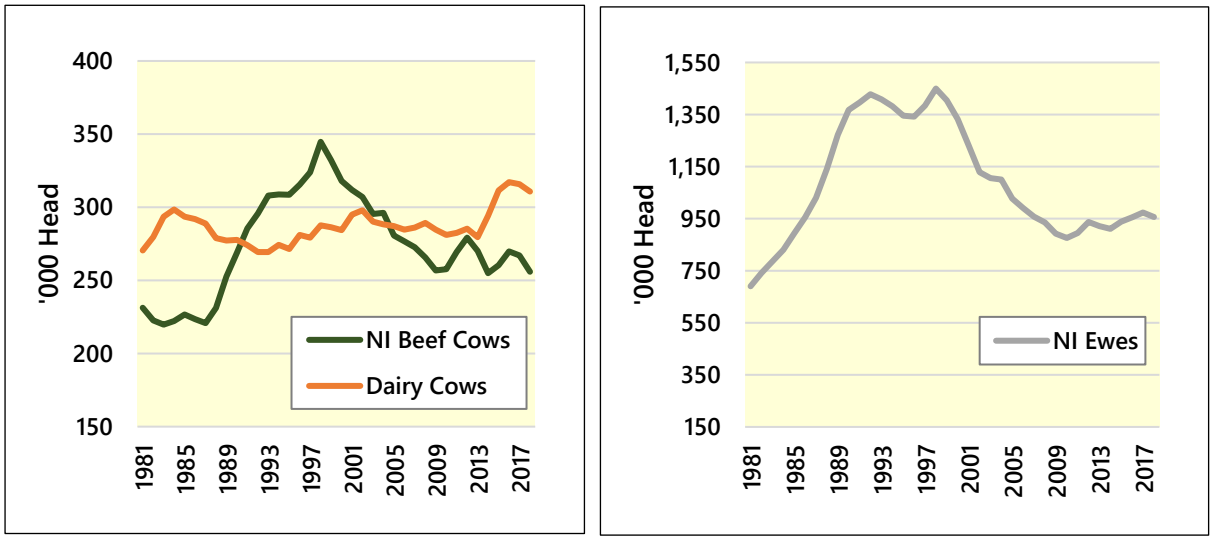
Prior to joining the EEC, beef cattle and sheep prices that farmers received in Northern Ireland were significantly higher than in other EEC Member States, especially Ireland. This was because of the favourable support within the internal UK market, which was not available in the Republic of Ireland[23]. With EEC membership, there was a convergence in terms of support under the CAP and market prices meaning that incomes in Ireland rose whilst Northern Irish farm incomes struggled initially as agriculture adapted to the CAP environment.

Market Intervention

From the time that the UK joined the EEC until the MacSharry reforms of 1992, the CAP was based on a system of market and price support. If agricultural prices fell below a certain point, European authorities intervened to buy-up surplus quantities of foodstuffs at the intervention price level, thus introducing a price floor in the marketplace.

After an adjustment to the CAP when beef cow numbers declined, Northern Irish cattle and sheep prices continued to receive price support. This contributed to an increase in beef cow numbers in Northern Ireland from the late 1980s onwards, especially as dairy production became subject to milk quota restrictions. Sheep numbers also increased as shown in Figure 5-1. With the introduction of the EEC sheep and goatmeat regime in 1980[25], which included the introduction of headage payments for a time as a common European basic price was established, sheep numbers increased significantly and were further buoyed by increased access to export markets such as France.

Figure 5-1 – NI Beef Cow, Dairy Cow and Breeding Ewe Populations 1981 – 2018 ('000 Head)



Source: DAERA

MacSharry Reforms

By the 1980s, it was clear that the CAP needed reform as significant food surpluses started to emerge and the financial burden became unsustainable. These reforms commenced with the introduction of milk quotas in 1984. The MacSharry reforms of 1992 represented a major turning point reflecting a move towards a freer agricultural market. This was partly due to pressure exerted by GATT members (a

precursor to the WTO) to reform the trade distorting support mechanisms of the EC as it was known by then. It was also influenced by European societal concerns around animal welfare and the environment.

The seminal MacSharry reforms introduced the following major changes;

- **Direct payments:** introduced to compensate for the reduction in market intervention prices closer to world market levels[26]. This resulted in sharp declines in beef cattle and sheep prices as support was no longer rolled-up into the prices that farmers received. Instead, livestock farmers received support via headage payments ("cheques in the post"). Direct payments became known as Pillar I of the CAP. Their intention was to give price a greater role in determining production levels. However, it transpired that the headage-based payments helped to contribute to an increase in cattle numbers as illustrated in Figure 5-1 above. It also led to issues concerning quality of production, cited a number of times in the primary research.
- **Rural development:** funds became available to assist with spending in rural areas. This would eventually become Pillar II of the CAP (under the Agenda 2000 reforms).

At the time, the MacSharry reforms were considered controversial and caused some angst amongst farmers because prices received were significantly lower than previously and the process of applying for direct payments led to an increase in bureaucracy. As it turned out, these reforms coincided with a significant increase in beef cow numbers in Northern Ireland (see Figure 5-1) as the headage-based payments prompted farmers to increase volumes.

For breeding ewes meanwhile, the numbers fluctuated with a decline from 1993 to 1996. The EU support system for sheepmeat continued to operate a "deficiency payment" type of support system, via the "Sheep Annual Premium" (SAP) following the MacSharry reforms. However, after 1993, the rate of SAP was calculated on the basis of the EU average market price, instead of the Member State or region's average which was the case prior to 1993. For an exporting region like Northern Ireland where the variation in market price is often greater than at EU level, the SAP payment did not fully compensate for any price drops which took place. Accordingly, sheep farming was not as attractive for a time after 1993 and some farmers were likely to have switched over to suckler cow production to take advantage of the more generous premiums available. Following the BSE crisis, ewe numbers recovered in the late 1990s (see Section 4.4 below).

Agenda 2000 and Introduction of Single Farm Payments (2003)

These reforms continued the direct payments model and brought together agri-environment schemes and Less Favoured Areas (LFAs) with other rural development measures to formalise the 2nd pillar of CAP (Rural Development Policy).

In Northern Ireland, Agenda 2000 coincided with the introduction of stocking rates for cattle and sheep as well as the commencement of the Countryside Management Scheme (CMS) (agri-environment). It was at around this time that beef cow and sheep numbers started to decline significantly as stocking rates and the CMS placed restrictions on the numbers of livestock which could be kept on farms. However, payments such as the headage-based Suckler Cow Premium and sheep payment still had linkages to production.

In 2003, the EU Commission sought to decouple the direct payments that farmers received from production and introduced the Single Farm payment. This also helped to re-categorise the direct

payment support given by the EU under WTO categorisations from "Blue Box" (linked to animal numbers but production limiting) to "Green Box" (not linked to production and therefore not trade distorting)[27]. The intention of this move was also to encourage farmers to align production more closely with market needs (i.e. remove the need to keep animals just for the sake of claiming a subsidy). That said, a limited number of payments remained coupled to production. Some Member States decided to continue with these and coupled payments remained a feature of the Scottish support framework[28] (see Section 6.1.4 for more information).

The Single Farm Payments also introduced the concept of "cross compliance" whereby in order to qualify for support, farmers were required to keep their land in Good Agricultural and Environmental Condition (GAEC) and respect EU laws on biodiversity, animal welfare and water quality[26].

A further "Health Check" took place in 2008 which placed further limits on coupled production, abolished set aside and increased the transfer of resources from Pillar I to Pillar II (known as modulation). However, the main thrust of Single Farm Payments remained. During this time, beef cow and sheep numbers continued to decline in Northern Ireland as decoupled payments reduced the need to keep as many livestock (see Section 4.2 above for additional commentary).

CAP Reforms (2014-2020) and Introduction of the Basic Payment

The main elements of CAP reform package for 2014-2020 were agreed in June 2013 with a transition taking place in 2014 and full implementation from 2015[29]. This agreement sought to give Member States and their regions (including Northern Ireland) greater flexibility in implementing CAP provisions as well as the tailoring of policy to particular agricultural needs and approaches. As a result, there have been significant differences in how the CAP reform has been implemented within the UK (Northern Ireland versus England) and some major differences between Member States (e.g. Northern Ireland versus Ireland). From a Northern Ireland beef and sheep farming perspective, the key elements of this CAP reform are outlined below with respect to Pillars I and II.

Pillar I:

In early 2015, DAERA (DARD) summarised the key decisions on the implementation of the Pillar I aspects of CAP Reform which included[30]

- **Basic Payment Scheme (BPS):** replaced the Single Farm Payment which included an updated basis for calculating entitlements for payment and a minimum claim size of 3ha to be eligible for a claim.
- **Regional Reserve:** 3% reduction in the Direct Payments scheme budget which could be used to finance other schemes (e.g. Young Farmers – see below).
- **Greening:** farmers participating in the BPS have to adhere to three greening measures namely, crop diversification, permanent grassland retention and the provision of Ecological Focus Areas (EFAs). Its purpose is to produce beneficial outcomes for the climate and the environment. 30% of the direct payments allocation is devoted to Greening payments.
    - **NI EFA Scheme:** is designed to improve biodiversity on farms and to provide habitats for species in decline or at risk of extinction on holdings with more than 15 hectares of arable land[31].

- **Young Farmers' Scheme:** provides a top-up basic payment and is based on 25% of the regional direct payments per hectare (averaging at about €84 per hectare) with a limit of up to 90 hectares per farm. It is financed by a 2% ceiling on the Direct Payments budget.
- **Capping of Direct Payments:** in NI, the maximum BPS that any claimant could receive is €150,000 (but Greening and Young Farmers' Scheme payments are not subject to capping).
- **Convergence of Payments:** as per hectare payments under the old Single Farm Payment scheme varied by farm, a decision was taken to move towards converged payments in a series of annual steps, starting in 2015 with a view to reaching a flat rate by 2021. These provisions were dependent on potential changes arising from the 2019-20 policy reform, originally intended to be under the auspices of the CAP, but Brexit has caused delays to this timeframe.
- **Voluntary Coupled Support:** was potentially available as an option to Northern Ireland (i.e. providing a payment directly linked to the volume of output of a specific agricultural product). This option was not activated in Northern Ireland but the option was to be kept under review in the light of potential market developments post-2015. *It turns out that this payment was never activated.*
- **Areas of Natural Constraints (ANC):** this was an optional additional payment under Pillar I (financed by up to 5% of the Regional Reserve) to farmers claiming the BPS to compensate for the costs and income foregone arising from biophysical constraints arising from agricultural production. This scheme was not taken-up originally but was opened in 2017 but closed again in 2018. When the scheme was in place it attracted between 8,000 and 9,000 claimants annually[32], the vast majority of which had beef and sheep enterprises.

Pillar II

This Rural Development Pillar also ran from 2014 to 2020 and the following were the key schemes from a suckler beef and sheep perspective;

- **Environmental Farming Scheme (EFS):** a five-year agreement with participants delivering a range of environmental measures[33].
    - a higher level, primarily for environmentally designated sites and other priority habitats
    - a wider level to deliver benefits across the countryside, outside of environmentally designated areas
    - a group level to support cooperative action by farmers in specific areas such as a river catchment.
- **Agri-Food Cooperation Scheme (AFCS):** aiming to reduce fragmentation and improve competitiveness and sustainability within the agri-food sector by facilitating groups (primary producer-led) to improve market intelligence and knowledge transfer, improve food products and promote tourism.
- **Business Development Groups:** use of a group approach to improve the technical efficiency of farm businesses and will also offer participants the opportunity to gain a level 3 qualification.
- **Farm Business Improvement Scheme (FBIS):** includes a package of measures to support sustainable growth and competitiveness in the agriculture sector. Its key component is a capital investment scheme (Capital Scheme) offering a grant rate of up to 40% for eligible projects.
- **Farm Family Key Skills (FFKS):** uses short courses and workshops to help farm families adapt to the changing needs of the industry by increasing the levels of knowledge and skills needed to assist with their business decision making[34].

Other schemes such as the LEADER programme for rural businesses were also available but tended to focus on non-agricultural entities.

Overall, despite 'decoupling' agricultural support which was intended to make farmers more market oriented, most farmers have used BPS payments to cross-subsidise loss-making farming operations. Arguably, the suckler beef and sheep sector's performance has even deteriorated further since 2005.

5.2 NORTHERN IRELAND POLICY REFORM AND STRATEGIC INITIATIVES

Over the past decade or so, there have been numerous reports examining how the sluggish performance of the NI suckler beef and sheep industries could be improved. The recommendations of a selection of key studies in relation to suckler beef and sheep are outlined below. The next section comments on these findings and the extent to which their recommendations have brought about change as well as what needs to be done next.

5.2.1 Northern Ireland Red Meat Industry Task Force (2006-07)

This body was established by the LMC to tackle identified issues in the red meat industry with its remit to "develop a strategic plan to guide the industry's development over the forthcoming decade" and "determine how a profitable and sustainable industry can be achieved "[35]. The resulting report concluded that the industry at that time was unviable as it was making a loss of £200 million, with the Single Farm Payment covering the losses. However, it could become viable if producers and government work side-by-side. It saw no economic viability for the suckler-origin beef or the hill-sheep model and argued against subsidising these sectors (but did mention that an upland-lowland model of grassland sheep production may be attainable). It claimed that production was the main area where losses occur but also noted scope for improved processing efficiency. It argued that Northern Ireland is hindered by its farm structure where farming holdings are considerably smaller than in GB. The task-force also called for greater support in helping farmers to develop business skills to allow for future expansion and to aid those seeking to diversify.

According to a Cattle Site article[36] published at the time of the Task Force's findings, it was believed that for suckler-origin beef, without a dramatic increase in average farm-gate price to just under £3.20/kg, there would be no prospect of creating an economically viable model of production for even the most efficient producer of suckler-origin beef (top-10%). As it turns out and as illustrated by Figure *4-5*, prices increased significantly from 2012 onwards and currently stand at around £3.40/kg[37]. Primary research conducted in this study also suggests that since then NI processors have successfully increased their share of the GB retail packing market which some claim have assisted processors to offer somewhat better prices to NI producers.

5.2.2 Going For Growth (2012-2013)

This strategic initiative put forward by the Agri-Food Strategy Board set-up under the auspices of the Departments of Enterprise, Trade and Investment (DETI) and Agriculture and Rural Development (DARD) developed a strategic vision and action plan for the industry to 2020[38]. The study was compiled at a time when the general NI economy was struggling following the 2008 financial crisis, but the agri-food sector was much more upbeat following a period of higher commodity prices globally. For the industry generally, it sought a 60% increase in turnover to £7 billion and a 15% increase in employment to 115,000 (note that this includes additional jobs in the wider economy (multiplier effect).

Within beef & sheep it targeted a turnover of £1.6 billion (versus £1 billion in 2011) and employment of 5,000 (34% growth). It noted the structural difficulties facing the sector where 50% of beef cows were found on herds containing fewer than 30 animals. It noted the success of the long established Farm Quality Assurance Scheme (FQAS) in supporting access for NI beef and lamb to premium UK and EU markets as well as strong traceability. It also highlighted the risk of severe decline in suckler beef and sheep without CAP support. Whilst the availability of grassland was a natural advantage which would enable the sector to foster a clean, green and sustainable image to support a premium market positioning. It also gave recognition of such systems in supporting marginal land types. Its key findings and recommendations relating to the beef and sheep sector included;

- **Growth of dairy-origin beef:** as a source of material and called for greater collaboration between dairy and beef producers in relation to calf rearing, heifer rearing and beef finishing.
- **Better supply-chain linkages and communication of market signals:** to influence quality and take advantage of opportunities. It argued that processors must review the pricing matrix to ensure that price differentials are sufficient to incentivise the supply chain to deliver greater conformity to customer requirements. It called for the supply-chain to deliver greater economies of scale, improve communication, technical input and efficiencies through a higher number of larger scale beef finishing units working in partnership with processors.
- **Productivity improvement opportunities:** particularly in genetics and called for enhanced competitiveness via greater technical efficiency and economies of scale in the supply-chain. Here it called for more emphasis on Estimated Breeding Value (EBV) in stock selection and consideration of the mandatory registration of sires. Linked with this, it suggested that industry and Government must develop an action plan to double the number of beef and sheep farms actively engaged in physical and financial performance recording over the next five years.
- **Support:** to the red meat sector to be maximised by securing a meaningful level of coupled support in the current CAP review negotiations;
- **Protected Geographical Indicator status for beef and lamb:** should be explored, possibly on an all-island basis;
- **New Grants:** introduction of a Land & Buildings Improvement Scheme, compatible with Single Farm Payments to repair/ replace or install new field drainage systems or buildings damaged through weather.
- **Animal health and welfare:** Government and industry must work together to support a range of measures, including an industry action plan to target a 15% reduction in livestock mortality, an agreed strategy to deliver a significant reduction (and ultimate eradication) of bovine TB and achievement of Brucellosis-free status;
- **Accessing new markets:** Government and industry must work together to speed up the implementation of the TSE roadmap to improve access to new markets especially third world countries.

Ultimately, it called for a drive to building sustainable and profitable business models focused on delivering market needs as the key to success for the sector. The initiative has had some impact on the ground. The introduction of the Farm Business Improvement Grant partly arose as the result of the Board's recommendations. The accessing of new markets has also improved and the growth of dairy-origin beef has taken place. Turnover and employment have improved significantly across the sector, although there are likely to have been many market-related factors driving this. Notably, the availability of migrant labour in processing has been influential in increasing output.

5.2.3 NI Assembly – Overview of the beef sector/suckler cow industry in NI (2016)[39]

This study highlighted the structural problems facing Northern Irish farming generally with 77% of units (19,078 farms) categorised as "very small" (i.e. accounting for less than 1 Standard Labour Requirement (SLR) where 1 SLR = 1,900 hrs/year). Within this, cattle and sheep farms within the LFA and lowland regions accounted for a 90% share (17,268 units). Linked with this cattle and sheep farms tended to have the lowest Farm Business Incomes, but volatility was lower than in the dairy sector. Many of these farms are managed on a part-time basis either in combination with part-time employment or after the normal retirement age[40]. Without support payments, these farms would have generated significant losses. It questioned the future viability of such enterprises without other off-farm supplementation of income.

The report also examined cattle and sheep population trends which showed increases in 2015 and noted that 36% of the steers and heifers marketed in 2014 were from the dairy herd, thus illustrating the importance of the dairy sector as a feedstock. The study noted that whilst numbers of beef cows declined since 1998, the trend was arrested in 2011. It cited farmers' perceptions around a potential change in the reference year for the new CAP rules as being a potential contributor to this temporary increase.

It identified a highly complex supply-chain with at least five production systems in operation locally whilst the processing and retailing sectors were also highly complex, having potentially numerous sources for beef products that they process and sell. *This arguably contributes to a complex value proposition, making traceability more difficult and contributes to a "commodity trader" culture across the sector where relationships tend to be more adversarial (win-lose) versus the more win-win approach seen in poultry for instance.*

5.2.4 Delivering Our Future, Valuing Our Soils: A Sustainable Agriculture Land Management Strategy for NI (2017)[41]

This study arose out the findings from the Going for Growth initiative covered above which called for the land-based agricultural sector to deliver *"resilient sustainability, diminished uncertainty, through enhanced farm profits, better engagement with young people, a reducing environmental footprint, and an increased output*" which drives economic growth in NI similar to what the poultry sector has achieved. It is based on the work of a DAERA Expert Group tasked with developing a strategy for achieving economic, environmental and social sustainability in Northern Ireland.

Its initial findings identified several land management issues to be addressed. These include;

- **Grass utilisation:** significantly below optimal levels
- **Soil analysis:** only up-to-date on 10% of farmland
- **Soil pH levels:** sub-optimal in 64% of soils.
- **Conacre rentals:** accounts for 30% of agricultural land which inhibits long-term security, planning and productivity.
- **Water quality:** 63% of NI water bodies not meeting EU Water Framework Directive requirements despite improvements in nitrogen and phosphorous efficiency on farms.
- **GHG emissions from agriculture:** account for 28% of NI's total emissions.
- **Biodiversity decline:** in farmland species of plants and animals. Only 1 of NI's 49 European Priority Habitats was at favourable status.

The report called for improving the health of NI's soils to be a central focus and called for a culture of behavioural change to empower farmers through measuring and managing the performance of their land. It sought for farmers to recognise that wins for the environment could also become wins for the financial performance of their farms. It suggested a move away from regulation and penalties which gave rise to a fear amongst farmers and a move towards giving greater guidance and advise to farmers so that they can better understand what needs to be done to manage for environmental sustainability, with regulation and enforcement only taken where needed. It also called for better grassland utilisation with a target of increasing dry matter by one tonne per hectare and improving grass and silage quality by 5% to 8%.

It outlined a series of actions which could be undertaken with the first step being to build a detailed baseline of current productive and environmental performance. It also detailed eight characteristics of what sustainable land management would look like in Northern Ireland, ranging from sustainable profits per hectare to the strategic planting of trees around intensive livestock to prevent ammonia drift. However, it also acknowledged that not all of these would be applicable to each farm, but that every farm could implement some key measures.

To successfully implement its strategy, it called for policy makers and the food chain, not just the farming community to work together to implement the actions and to build trust. It also called for a credible science-based sustainability brand for NI food to be established and for environmentally positive farming to become a profit centre, not just a cost centre.

The strategy claims that there would be something for everybody including better profitability, productivity and land access for farmers; greater scope for differentiation of NI food for processors; a more efficient and environmentally sustainable farming sector for policy makers and greater quality assurance for consumers.

This initiative is amongst the most wide-ranging and detailed in terms of delivering both a productive and sustainable land-based agricultural sector. It is very strong in stressing that productive farming and environmental sustainability are not mutually exclusive but instead can be mutually reinforcing, and better grassland utilisation is a key example of this. It usefully points towards giving farmers greater flexibility in how they go about improving performance by prioritising a few key performance indicators (KPIs) which are deemed to be most appropriate for a given farm. Importantly, it acknowledges that better sustainability performance needs to be translated into a tangible competitive advantage in terms of branding and consumer perception. If anything, this has become even more important since the study was published.

5.2.5 Lay of the Land, Report of the Northern Ireland Inquiry (Sept 2019)[42]

This study was initiated by the Food, Farming & the Countryside Commission and focused on how farming could *"mitigate and adapt to climate change and restore biodiversity; how to improve the public's health and wellbeing in all communities; and how to build on and develop Northern Ireland's distinctive pattern of farming to play its full part in responding to these challenges, also supporting and revitalising rural communities."*

Its report highlighted the challenge that NI faces in terms of producing quality food whilst addressing environmental issues such as climate change, biodiversity, protection of habitats and water quality. It noted rising GHG emissions and ammonia-related challenges but mentioned that farmers should not be solely blamed for these issues and policy-makers should recognise that NI's climate favours grass-

based production systems. As with other reports, it highlighted structural differences in NI agriculture versus the rest of the UK and farmers' dependency on CAP support. The importance of agriculture in rural life (not just the economy) were also noted. As with other studies, it acknowledged the importance of the Going for Growth strategy and that strong progress has been made in implementing many of the recommendations and achieving the targets set, but claimed that the strategy was too industry dominated and was somewhat unconnected to wider environmental and social policy.

The study put forward ten suggested outcomes for the food and farming system as part of its aspirations for a flourishing rural economy and a sustainable and accessible countryside. These were[42];

1. *The efforts and investments made by farmers are rewarded through appropriate farm incomes and all those working in the agriculture and food industries earn a decent living.*
2. *We farm in a way that conserves our soils, eliminates pollution, restores biodiversity and reduces carbon emissions.*
3. *When public money is spent it is done in a way that contributes to the common good.*
4. *Food of high quality is produced and its value is recognised through the price it achieves.*
5. *The food available to people is nutritious and diverse and forms a healthy diet affordable by all.*
6. *Resilience is built through a shift towards satisfying local food demand from local produce.*
7. *Relationships are built between producers and consumers of our food.*
8. *A culture of good food and its social value is nurtured and celebrated.*
9. *Young people understand and appreciate the relationships between farming, food, environment and health.*
10. *The countryside is accessible to all and the people are able to reconnect with nature.*

Its recommendations for action are based on building trust, learning from experiences elsewhere, working with academic institutions and across community structures to create a 'systems leadership' across society as well as calling for public engagement which focuses on those whose voices go unheard.

Some of the key themes cited chime well with the desired outcomes and recommendations of other studies. Perhaps importantly, it incorporates the societal views of stakeholders that are not always closely connected with the farming sector. It shows that the public good outputs associated with good farming practices are valued across Northern Irish society. Whilst the document does not include specific policy targets for the sector, it still merits consideration when formulating agricultural policy.

5.2.6 Other Strategic Initiatives in Northern Ireland

In addition to the policy reviews above, other strategic initiatives have taken place in Northern Ireland which have relevance to policy-making in the suckler beef and sheep sector. These have tended to focus on specific aspects of production. For example, the Beef from Grass initiative[43] seeks to develop a blueprint for increasing grass production beyond 12t DM/ha on a beef farm with maximum utilisation (currently the best NI farms are achieving 10 t DM/ha) whilst on average only 4.1 t DM/ha is utilised on beef and sheep farms. *This finding alone shows the scope for significant improvement in driving efficiencies within the beef and sheep sector.*

There are also a series of farm-based initiatives underway in Northern Ireland with a notable one being the BETTER Farm Beef Challenge NI[44] which is a joint venture between the Irish Farmers Journal (IFJ), Anglo Beef Processors (ABP) and College of Agriculture Food and Rural Enterprise (CAFRE). The project has been underway since 2011 and claims to have been very successful in demonstrating how

improvements in suckler cow and beef finishing management can lead to improved profitability (particularly gross margin) on all of the participating farms. Its key principles are cited[45] as;

- **Breeding / fertility**: productivity is vital for suckler herd viability. Review breeding performance. Focus on culling, calving spread, calving rates and calving intervals to develop a breeding programme for your farm.
- **Herd health**: establish a herd health plan and focus on management practices (e.g. shed ventilations, dosing regimes) have a positive impact on herd health calving.
- **Grassland management**: more focus on grass to achieve high levels of liveweight gain, giving a competitive edge over EU counterparts who rely on costly feedlot systems.
- **Cost control**: benchmarking to identify cost savings and to assess level of farm output relative to costs.
- **Increasing output per hectare**: achieving a high level of physical and financial output per hectare is critical to achieving an adequate margin over production costs.

5.3 NI POLICY AND STRATEGY REVIEWS – CONCLUDING REMARKS

As shown above, numerous reviews have been undertaken in the last decade or so and several key themes keep recurring. The need for a step-change in terms of productivity is seen as critical if the suckler beef and sheep sector is to survive, let alone thrive, as a major sector in the long-term. The environment has also emerged as an urgent priority which the farming industry must pay attention to if it is to continue to receive taxpayers' support. Several proposed initiatives (e.g. soil sampling, better grassland management, genomics etc.) have the potential to deliver on both of these challenges. Such actions have been cited on several occasions by review bodies. There are numerous additional actions proposed by the respected Sustainable Agriculture Land Management Strategy report which also need to be implemented as soon as possible.

It is evident that action needs to be the priority now because otherwise conducting reviews becomes a waste of time. With Northern Ireland and the rest of the UK sitting outside of the CAP, which has traditionally being strongly supported by EU Member States, previous levels of support will not be guaranteed over the long-term. The farming sector will need to compete for funding with other funding priorities (e.g. the NHS and social care and education). It must show that it can deliver value for money, not just in the food and farming industry's eyes but from a taxpayers' perspective. If the industry does not grasp this and commit to tackling the challenges it faces head-on, the support it is continuing to receive will become increasingly unjustifiable in the public's eyes.

6. EVALUATION OF POLICY INITIATIVES ELSEWHERE

When considering future policy for the NI suckler beef and sheep sector, it is important that this is not examined in isolation. This Chapter briefly reviews the agricultural policies and selected strategic initiatives underway elsewhere which might provide useful insights for Northern Ireland. Given the time constraints of this study, it should not be seen as an exhaustive review, but instead is intended to give a flavour of what is happening elsewhere to manage the challenges faced by the beef and sheep sector. Firstly, agricultural policies elsewhere in the UK are assessed before attention switches towards policies in the EU. Key international initiatives are firstly examined followed by UK-based programmes. And non-EU countries. The Chapter concludes with some key lessons that could be applied in an NI context.

6.1 REST OF UK

As the policies at play in Northern Ireland under the CAP have been reviewed in detail in the previous Chapter and the key principles of which were also applicable to other parts of the UK, the focus of this section is on policy and strategic initiatives which have not featured in Northern Ireland. It therefore examines selected policies in other UK nations which are deemed to be of close relevance to NI suckler beef and sheep. Firstly though, an overview of UK cattle herd trends is provided

6.1.1 UK Herd Size Trends

In the UK, it is not easy to disaggregate the contribution of the beef sector from the rest of agriculture or the agri-food industry. At the farm level many businesses are mixed, particularly with cattle and sheep. Similarly, businesses further along the food chain are often 'red meat' businesses (beef and lamb). Suppliers sell to all farming sectors and do not specifically categorise their sales to beef farmers.

Despite this, the following section provides some more detailed statistics on the contribution of the beef industry to the UK.

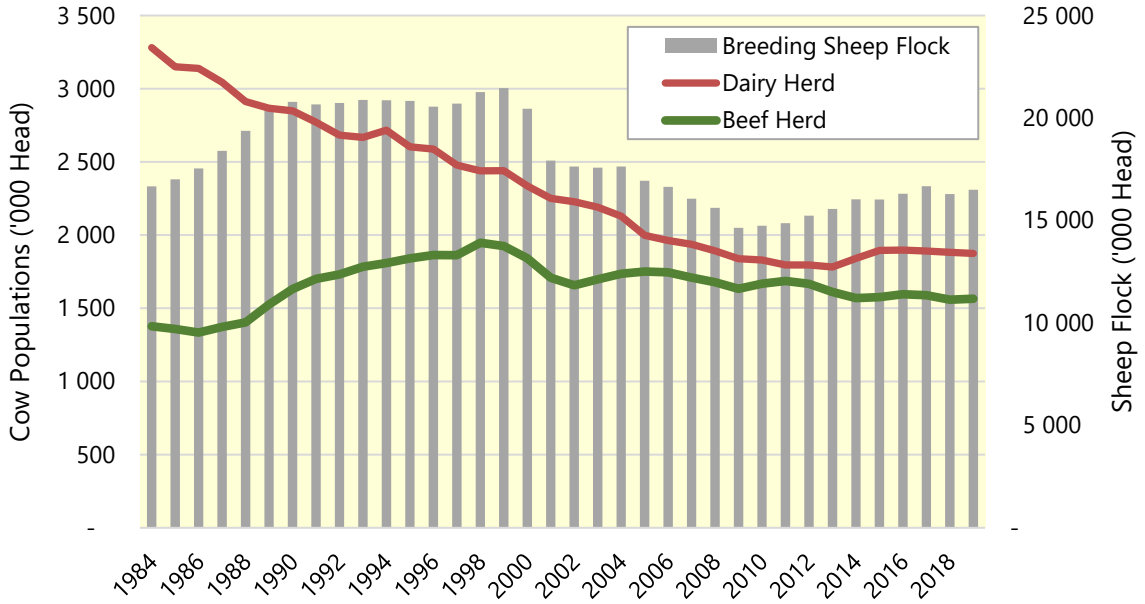
Figure 6-1 below shows how the size of the beef breeding herd and sheep flock has changed since 1984. Also shown is the dairy herd. It must be remembered that, as with NI, a large proportion of beef supply across the UK as a whole is sourced from the dairy industry. This includes cull dairy cows, and also the progeny of dairy cows that are not being used for replacements in the milking herd. Around 55-60% of the beef currently produced in the UK is ultimately derived from the dairy herd[46]. Since 1984, the dairy herd has nearly halved (reducing by 43%), yet the output from milk has only decreased by 4.5%, thus exhibiting a substantial increase in yield per cow[47]. Whilst the UK beef herd grew from 1980 to the mid-1990s, it has fallen significantly since and now stands at 1.56 million, of which Northern Ireland accounts for a 16.4% share. The factors influencing this are broadly similar to those outlined in Chapter 4 for Northern Ireland.

Sheep flocks have also experienced a significant decline since their 1999 peak when the breeding flock reached almost 21.5 million. Today it stands at approximately 16.5 million, with Northern Ireland representing 5.8% of this.

Figure 6-2 shows the distribution of the beef breeding herd across the UK. As can be clearly seen, there is a marked bias towards beef production occurring in the north and west of the British Isles, and is most prevalent in Northern Ireland. This is unsurprising. The higher rainfall in these areas is conducive to

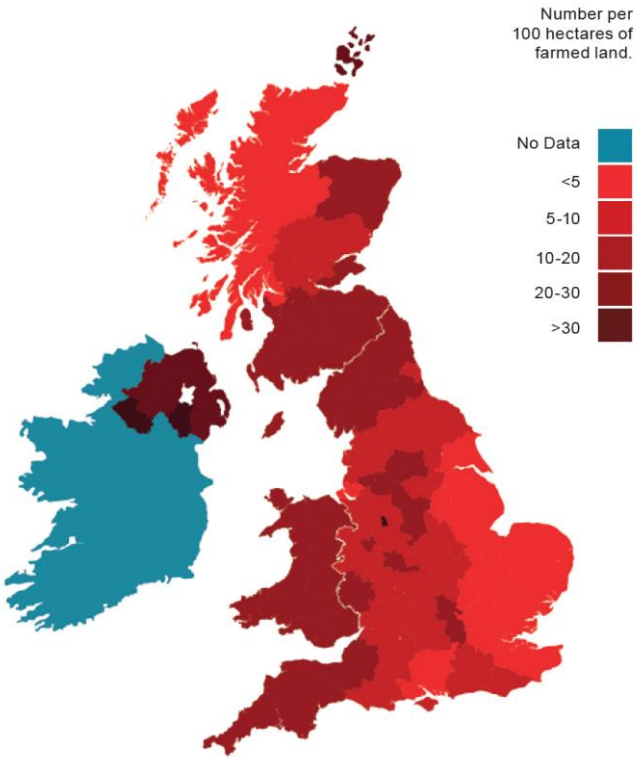
good grass growth. Also, soil types and typography is less favourable for arable production, thus making grassland farming more attractive by comparison

Figure 6-1: UK Cattle Herds – 1984 to 2019



Source: Defra

Figure 6-2: Distribution of Beef Breeding Cows, 2013



Source: AHDB Beef and Lamb

Defra statistics[48] for 2019 show that permanent and temporary grassland (7.27 million Ha) accounts for around 39% of the UK's agricultural land area (18.85 million Ha). When rough grazing (3.96 million ha) is also included, grassland represents two-thirds of the UK's agricultural land area. Given this importance and the fact that livestock farming is the most efficient means to convert grass into protein, it is imperative that future agricultural policy considers this substantial contribution to farming, food and the countryside landscape.

6.1.2 England

Aside from the main elements of the CAP, policy initiatives focusing specifically on the suckler beef and sheep sector have been minimal in England. This reflects the view within Defra and the Treasury over the years to allow market forces to shape output and performance. That said, in recent years and with the onset of Brexit, a few key initiatives are noteworthy from a policy-making perspective.

AHDB Beef and Lamb Strategy

As the main levy-body in UK farming, the AHDB is a major stakeholder in terms of beef and lamb industry development. Its beef & lamb strategy for the 2017 to 2020 period (Inspiring Success)[49] identified four key thematic areas which resonate with policy recommendations elsewhere;

- **Productivity:** focusing on improved efficiency, increased use of estimated breeding values (EBVs), improved animal health and welfare while reducing costs.
- **Thought-leadership:** increased quality of industry intelligence to support a more profitable supply chain and develop more impactful and agile communications plan for levy payers.
- **Customer focus:** promote nutritional and environmental benefits, develop and protect international trade markets including halal as well as development and promotion of beef and lamb products.
- **Competitiveness:** increase number of animals meeting specifications, increase eating quality and to engage levy payers with production costs.

Whilst not in the top-level document, the strategy included quantified targets such as "increase the number of cattle and sheep hitting market specification to 58% by 2020"[50]. It also sought a 5% increase in farm profitability (per hectare) over a four-year period based on Farmbench data.

In comparison with other strategies, it is arguable that the AHDB had less focus on the environment with this document, although this is likely to change in the future, as sustainability has since become a key theme for the organisation.

Agriculture Bill

The long-awaited Agriculture Bill[51] was originally introduced into Parliament in September 2018 and provided top-level insights on the future direction of agricultural policy. It is still in the process of passing through Parliament but is anticipated to become law in the near future. Although parts of the Bill are UK wide, the major focus is on agricultural policy in England post Brexit, as it was published in the aftermath of Defra's Health and Harmony consultation[52]. Key elements include;

- **Basic Payment – Phase-Out, Capping and Capitalisation:** whilst the BPS is to remain in place for 2020, it is envisaged that from 2021 onwards, there will be a seven year 'agricultural

transition' period to 2027. Therefore, from 2021 all farmers will see some reduction in their payments. However, those who receive the highest payments will see bigger reductions initially. *Table 6-1* sets out the reductions for 2021 and the bands work like Income Tax.

Table 6-1: Overview of Proposed Deductions to English BPS Payments in 2021

Performance Indicator	Up to £30k	£30k-£50k	£50k-£150k	Over £150k
% BPS	-5%	-10%	-20%	-25%
Size threshold (Ha)	<135	135 – 225	225 – 675	>675

From 2022 to 2027, BPS payments will continue to be phased out (the yearly reductions are not yet known), and by 2028 there will not be any area aid in England. The money saved will be put towards piloting new schemes including the Environmental Land Management Scheme (see below).

One significant development is that payments made during the agricultural transition can be 'delinked' from the 'requirement to farm land'. This idea was put forward in the consultation and although the details are not yet available, it offers the prospect of a lump-sum or guaranteed future stream of income. Amounts would be calculated according to the money received in a base year. Such delinked payments could be used by some as a way of leaving the industry, a retirement fund; or to fund investment in farming businesses. As such it is aimed at helping new entrants into the sector and giving farmers the flexibility to plan for the future. If there is no requirement to farm land it seems logical that Greening and Cross-compliance would also be delinked from payment.

The details on de-linking are currently sparse. This is true generally of the Bill which runs to a relatively concise 60 pages[53]. Much of it concerns giving Ministers broad powers to undertake certain activities, without specifying in detail how such things are to work. For example, the deductions for 2021 BPS outlined above do not actually appear in the text, but come from the accompanying Policy Statements by Defra[54] (which are not legally binding). The detail of schemes and rules will be filled-in with secondary legislation – over a period of months if not years.

- **Environmental Land Management (ELM) Scheme:** will replace the current support system and its central tenet will be the payment of "public money for public goods" such as;
    - better air and water quality
    - improved soil health
    - higher animal welfare standards
    - measures to reduce flooding

  The detailed design of the ELM scheme is being worked on (Defra is devoting a lot of personnel to it). The top-level objectives of the scheme have been set, and it is these that will drive the detailed design and rules. Many of the objectives are familiar from previous agri-environment schemes, but new (or more highly prioritised) elements such as climate change, air quality and hazard protection have come more to the fore. The 'Natural Capital' approach was planned to underpin the ELM scheme. This attempts to value all the parts of the natural world that provides goods or services to people (this is not always simple or easy). The value of these natural assets can then be tracked over time. The idea is that they will be improved (the value will rise), and the custodians of the assets (including farmers) will be paid to achieve this. Although elegant in principle, translating this to a workable scheme has not been easy, and a traditional approach where a menu of payments and options are offer to land managers seems the likely outcome.

The intention remains that the scheme be fully up and running for 2025 with pilots taking place in the years before.

Until the new scheme is fully rolled out, the current Countryside Stewardship scheme will remain open until 2024, although it is expected to be simplified and the number of agreements offered each year will be dependent on the development of the new ELMS. It may also be possible to extend HLS agreements which are due to end between 2019 and 2024.

- **ELM Design:** as more than a year has passed since the original Agriculture Bill was published, further details have emerged on its design. The latest plans for ELM is a three part scheme;
    - **Farmer / Forester Scheme:** the first tier will perhaps look a lot like the previous Entry Level under the Environmental Stewardship (ES) Scheme. It is intended to provide a broad (and shallow) offer so that almost all farms have a scheme that is relatively easy to get into and thus replaces (some) of their BPS income. It is likely to have a menu of land management options and the clear desire of Defra is that the administration would all be carried out online. The scheme will focus on reducing the 'negative externalities' produced by land management, particularly around air, soil, and water pollution. It is likely to be a temporary scheme as the plan is to raise the regulatory baseline to a polluter pays system over time.
    - **Environmental Enhancement Scheme:** the next level will require more intensive management from farmers. It is likely that a whole-farm plan will have to be drawn up (possibly by accredited advisors). The focus will be on rewarding farmers for positive externalities such as biodiversity, flood management, carbon storage, landscape heritage etc. This will be the 'core' of ELMS over the long-term and can be seen as a turbo-charged CS or ES scheme.
    - **Landscape Scale Scheme:** the final element looks to make 'landscape-scale' changes by getting groups of landowners to work together. Tests of elements of ELM are underway and pilots will start in 2022. There are concerns around the complexity of the scheme.
- **Other Issues:** The Bill also includes investment in research and development with 'transitional support' available from 2021 to improve the sector's ability to improve productivity, manage risk and deliver public goods. The Bill also sets out that the government will 'strengthen transparency' within the supply chain to enable farmers to get a better deal. Again, no detail is given on what these policies might look like in practice.
    - **Productivity:** there is a wide package of productivity support promised. There will be capital grants that look very much like the current Countryside Productivity Scheme – both the small and large grants elements are set to continue, with new rounds opening in 2021. There will be support for initiatives in Research and Development, particularly projects that get research out onto farm. The skills and knowledge of the farming sector will also be a focus, with plans for a professional body for agriculture and more benchmarking of performance.
    - **Animal health and welfare:** has a strong focus. Firstly, there is a promise to maintain and enhance the current high regulatory baseline. Any increase in legal standards would take into account the effect of this on international competitiveness. There would be support to get the market (consumers) to pay more for high-welfare products – for example, by clarifying labelling terms and standards. Lastly, there may be public

money for animal welfare in certain circumstances. There is little detail yet on what these initiatives might look like in practice.

The Agriculture Bill obviously marks a major step on the Brexit road-map for farming. It still has to complete its passage through Parliament, but is considered less contentious than many other Bills currently before Parliament so is likely to emerge unscathed. Many key operational points of the new support regime will only become clear when the secondary legislation puts some flesh on the bare bones contained in the Bill. It is evident that Defra has big plans now that it is free to set English farm policy. Although it will not all happen overnight, there is still a large shopping list of initiatives. There will be a question of whether Defra (and the wider Government) has the capacity to deliver them all, and deliver them well.

Whilst the ELM scheme is focused heavily on delivering outcomes, the key challenge is that these are difficult to quantify and are frequently difficult to control at the farm-level. Accordingly, there has been a shift in focus towards "outputs" which have a more direct linkage with actions at the farm-level. Some believe that this focus could regress back further towards payments based on actions given the difficulty in measuring outputs such as the rise in sky lark populations for instance. *Despite this, the ambition of payments based on results should not be discounted and an effort should be made towards identifying a few key performance indicators (results) which will have a major influence on the outcomes achieved. However, these should focus primarily on what is controllable at farm-level.*

6.1.3 Wales

As with elsewhere in the UK, Wales was also governed by the CAP rules. Whilst there has been some information released by the Welsh Government, the direction of future policy requires further clarification. In this section, a couple of specific Welsh initiatives which have relevance for suckler beef and sheep policy are examined.

HCC – Strategic Vision

In 2015, Hybu Cig Cymru – Meat Promotion Wales (HCC)[55] developed its 2020 Vision, a strategic action plan for the Welsh red-meat industry. This document is also relevant in the context of formulating future policy. Its high level vision was for "*a profitable, efficient, sustainable and innovative Welsh red meat industry which benefits the people of Wales, which is resilient to political and environmental change, and is capable of responding competitively to ever changing market trends*". The plan drew upon input from all major industry stakeholders including the Welsh Government and was framed within the context of the Wales Animal Health and Welfare Framework and the Food Standard Agency's Strategic Plan 2015-2020. By 2020, it aspired to;

- Increase sales revenue of Welsh red-meat by 34%
- Improve on-farm output by at least 7%
- Contribute to a 114% increase in the wider Welsh food and farming sector turnover.

The plan also included specific targets relating to the proportion of prime cattle and lambs meeting marketing standards' requirements. As the 2017/118 annual report document[56] attests, these targets were regularly monitored to benchmark performance. The 2017/18 annual report acknowledges that there have been several challenges which have impeded progress towards the 2020 targets, some of which are to be addressed by the HCC's "Vision 2025"[57] initiative which outlines nine priorities;

1. Positioning red meat from Wales as a premium product.
2. Developing EU trade opportunities for Welsh red meat.
3. Optimising domestic (GB) consumption of red meat from Wales.
4. Seeking new consumers for Welsh red meat in established global markets.
5. Securing a greater percentage of Welsh red meat exports outside the EU.
6. Developing a competitive Welsh red meat industry.
7. Reducing the impact of Welsh red meat production and processing on the climate, the environment and waste.
8. Contingency planning in terms of future trade, production and processing post-Brexit.
9. Effective communication throughout the industry to ensure unity of purpose.

It is obvious from these priorities that addressing Welsh lamb's exposure to Brexit and the potential of impeded access to EU markets is a major concern. The strategy acknowledges Wales' position as a high cost producer, thereby necessitating the need for a premium positioning whilst also extracting as much as possible from lower value cuts. Its aim of better balancing UK demand with domestic supply for a greater proportion of the year should be monitored closely by NI policy-makers as it faces similar challenges.

Young Entrants' Support Scheme (YESS)

The Young Entrants Support Scheme was available under the Welsh Rural Development Programme 2007-2013. The scheme provided grant assistance to aid young farmers who possessed the skills to set up as head of a holding for the first time. To be eligible the applicant must have been under 40 years old and set-up as head of the holding for the first time within the previous 12 months. Other eligible criteria included:

- being able to demonstrate that the holding was viable or will be within five years.
- the applicant having appropriate agricultural qualifications or practical experience; being a member of a Quality Assurance scheme.
- the applicant having completed a skills gap assessment (via Farming Connect) and having completed a one day Farm Advisory Service within 6 months of receipt of aid payment.

Applicants were required to submit a Business Development Plan, including details of all the capital investment which the grant would support and a Personal Development Plan indicating how competence requirements would be met if necessary. A grant of up to 50% of agreed eligible expenditure up to a maximum grant of £15,000 was made in setting up as Head of Holding for the first time. The grant was not available for investment in the purchase of land, livestock, Single Farm Payment Entitlements and/or farm machinery to be used for contracting activities. In addition, four days per year mentoring services was also available. An additional maximum of £1,000 was available to those who took up this service.

It must be noted though, the YESS was never 'fully' available during the WRDP 2014-2020. A 'trimmed' down version was open for applications in the 2018/19 and 2019/20 financial years. A total of £6m was made available for a maximum of 150 young farmers (£40,000 each) over the two years.

Welsh Agricultural Policy Plans

The Welsh Government has engaged in a series of consultations on future farm policy. The latest one ended on 30th October 2019. This has resulted in a proposed programme called the 'Sustainable

Farming Scheme' which will pay a 'Sustainable Farming Payment' (SFP). This is intended to be a meaningful and stable income stream with multi-year contracts with fixed payment rates (not constrained by income-foregone). Like England, it will pay for public goods (i.e. 'outcomes not rewarded by market') and it is envisaged that it will pay for new and existing sustainable practices.

Although the idea is that this will be potentially available to all farms in Wales, it will be different from the BPS as it will not be paid 'as of right' – land managers will have to provide some 'public goods' in order to be able to access it. The provision of food is not a public good as there is a functioning market for food. Glastir (Wales's agri-environment scheme) will be rolled into the new scheme which will be designed over the next few years to commence in 2024. There has been a clear desire under recent Welsh administrations to try and improve the competitiveness of agriculture. Business support programmes will run alongside the SFP.

Overall, Wales appears to be going down a similar route to England although it will be 2022 before Direct Support (BPS) will begin to be phased out and it is unclear how long the Welsh agricultural transition will last for.

6.1.4 Scotland

Where Scotland differs significantly is that it chose to deploy coupled payments to farmers, an overview of which is given below.

Scottish Suckler Beef Support Scheme (SSBSS)

The aim of the SSBSS is to maintain beef suckler herds at a level that 'sustains the commercial beef industry in Scotland'. This coupled support was initially provided through the Scottish Beef Calf Scheme (SBCS) under the SPS. The present, Scottish Suckler Beef Support Scheme was introduced in 2015 as part of the Basic Payment Scheme (BPS). Under the BPS Member States were able to 'recouple' a proportion of the total amount of money available for direct payments (the National Ceiling), England and Wales did not introduce coupled support but Scotland continued with its. The SSBSS is approximately 8.5% of Scotland's National Ceiling.

The SSBSS gives direct support to specialist beef producers by paying an annual premium on male or female calves with at least three quarters beef genetics. Under the CAP, it has had an annual budget of €38 million for Scottish mainland claims and €6.6 million for claims from the Scottish islands. This has equated to approximately €100 per calf on the mainland and €160 per calf on the Scottish islands. Actual payments depend on the number of eligible animals claimed each scheme year and have been converted to Sterling using the exchange rate in force at the time. Following the UK's exit from the EU, this will now be a domestic scheme.

The previous Scottish Beef Calf Schemes (2005-11 and 2011-2014) were similar to the SSBSS however payment rates were different. The first 10 calves were paid at a higher rate. In the scheme running from 2005 to 2011, the first 10 calves were paid at double the basic rate. In the scheme running from 2011 to 2014, the first 10 calves were paid at three times the basic rate. The basic rate was approximately £45 - £50 per calf, depending on the numbers claimed and the exchange rate prevailing at the time.

To date there has not been any reports assessing the impact of the SSBSS, however there has been an evaluation of the previous Scottish Beef Calf Scheme – A Special Study for The Scottish Government's Rural & Environmental Research and Analysis Directorate – 'Evaluating the Scottish Beef Calf Scheme'[58], this was published in June 2008, key conclusions include:

- The Scottish Beef Calf Scheme (SBCS) failed to reverse the downward trends in cattle numbers in Scotland and has had a minimal impact on helping producers to retain cattle against the background impact of decoupling. This is principally because the SBCS is neither sufficiently targeted at fragile areas, nor does it provide an adequate incentive to influence production decisions.
- Removal of the SBCS would result in gross margins falling by 20% and 50%. However, ultimately net margins indicate long term viability is questionable. The study found, where fixed costs are high, losses on an average size herd ranged from £22,000 to around £25,000. The SBCS, only offered around £3,000. Given that the SBCS does not offer enough support for farm businesses to cover their fixed costs it is unlikely on its own to be effective in retaining beef cattle in the long run.
- The SBCS only contributes to around 5% of overall public subsidies to producers in peripheral areas. The Less Favoured Area Support Scheme (LFASS) and the Single Farm Payment (SFP) are by far the largest. In addition, the non-targeted approach blurs the objective of maintaining beef production in the peripheral areas. (It should also be noted that whilst there were plans at one point to replace the LFASS scheme with an Areas of Natural Constraints (ANC) scheme, it now looks like that Scotland will continue with LFASS for the foreseeable future).
- The study found calf numbers had declined over the period 2004 to 2006, but other policy changes, such as the introduction of the Single Farm Payment were introduced at the same time, decoupling support from production. Suckler cow numbers and replacement heifers both fell from 2004. The peripheral areas of the North West showed the greatest declines.
- Most cattle farms in the peripheral of Scotland also have a sheep enterprise. (At the time sheep payments were fully decoupled). The study found, both enterprises had fallen, although sheep numbers appeared to have fallen at a greater rate. In the North West of Scotland, the fall in sheep numbers had been quite 'stark' with a rise in the cattle to sheep ratio. Nevertheless, the study found this was a long term trend and difficult to attribute much of a change in these trends directly to the introduction of the SBCS.
- The biggest decline in calf and suckler cow numbers has been in the North West of Scotland, even so the study found the largest number of recipients of support under the SBCS were located in this area, but the majority of funds have been directed towards the North East and South West. The high nature value areas of the North West are the most fragile and would have derived the greatest benefit from the SBCS. However, this region only received 16% of the £19m allocated through the SBCS.
- The study found over the period for 2005, at most the SBCS would have helped retain some 12,000 cows across Scotland.

Scotland – Beef 2020 Report

Although not a policy document per se, but more of a strategic plan for the sector, the Beef 2020 Report[59] was compiled in 2014/15 and has some relevance to policy. It was a Scottish Government initiative bringing together key stakeholders from across the beef supply-chain to formulate a strategic vision for Scotland's beef sector which is: *"A confident market driven grass-based cattle industry using leading edge technologies capable of delivering profitably to the home and world market high provenance, quality beef from sustainable production systems."*

To realise this vision, it saw production efficiency and market development as being essential. It also pointed out the environmental benefits that could be realised through better productivity and less waste

whilst reducing Scottish beef's carbon footprint. It identified a series of actions and what these meant at each supply-chain stage:

1. **Farm level:**
    - Developing a deadweight payment system that more accurately rewards the yield and value of the carcase.
    - Improved animal performance via better information delivered through;
        - a full cattle EID system;
        - an integrated accessible database covering livestock traceability, farm assurance status, non-financial information collected at various points in the animals' life; including breeding information related to genetics and physical performance, carcase weight, grade and health status as well as downgrades.
        - greater use of peer group benchmarking and knowledge exchange.
    - Industry wide actions to improve animal health and wellbeing by tackling key diseases and parasites (e.g. Johne's & liver fluke) along with increased use of health plans.
    - Actions to improve access to land and capital for new entrants to beef cattle farming.
2. **Processing:**
    - Actions to support and encourage capital investment in new technologies that reduce or eliminate waste;
    - Working with Scottish Government and the European Commission to reclassify by product so as to reduce waste and increase value from the wider fifth quarter
3. **Farm-level and processing combined:**
    - Working together to better communicate and understand the supply, demand and price drivers of the medium term market future;
    - Working together to improve supply chain cooperation in respect of supply, product specifications, pricing basis and product development so as to manage risk in the supply chain;
    - Accessing as wide a range of domestic and international markets as possible with commensurate in-market support structures;
    - Accessing an education, training and advisory/consultancy structure that provides opportunities to develop and improve knowledge and skills relevant to each part of the supply chain;
    - Accessing world leading research and development tailored to the conditions of the Scottish environment and farming systems.

The Scottish plan set several quantifiable targets (e.g. improving productivity (measured as the ratio between beef calf scheme eligible calves and beef females over two years old with offspring) from 87% in 2012 to 94% by 2020. It also cited building trust within the supply-chain as one of the key pre-requisites to deliver the vision.

Whilst the Scottish plan contains laudable elements, its beef industry (as with the UK generally) has been beset by competitive pressures in recent years which have hampered its progress. That said, it is a useful reference point and its focus on setting farm-level targets on productivity and the environment as well as for the farming and processing sectors to work together is noteworthy.

6.2 EU-27 POLICIES

As Northern Ireland and the rest of the UK have been operating under the CAP for the past 47 years, this section does not seek to provide an in-depth review of the CAP in each Member State. Instead, it looks at a few key recent studies which have examined the functioning of the CAP across the EU and which suggest priorities for the years ahead. That said, additional information is provided in Section 6.2.2 on Ireland given its proximity to, and influence on, the beef and sheep sector in Northern Ireland.

In 2018, the EU Commission published its legislative proposals on future CAP reform[60] covering the 2021 to 2027 period. It aimed to make the CAP more responsive to the key challenges of climate change and generational renewal whilst helping to support farmers for a sustainable and competitive agricultural sector. It also proposed a 5% reduction in budget in nominal terms to take account of the UK's withdrawal from the EU. Its nine objectives were to;

1. **Ensure a fair income to farmers:** through targeting of support to smaller and medium-sized farms as well as encouraging the entry of young farmers. This included reducing payments above €60,000 and to cap payments at €100,000.
2. **Increase competitiveness:** drive sustainable productivity to meet challenges of higher demand in a resource-constrained world.
3. **Rebalance the power in the food chain:** improve farmers' position through strengthening cooperation, improving market transparency and addressing unfair trading practices.
4. **Climate change action**: bolster agriculture's contribution to climate change mitigation and the uptake of renewable energy.
5. **Environmental care:** sustainable development of natural resources including water, soil and air.
6. **Preserve landscapes and biodiversity:** enhance ecosystem services and preserve habitats and landscapes
7. **Support generational renewal:** modernise agriculture, attract young people and improve their business development.
8. **Vibrant rural areas:** promote employment, growth, social inclusion and local development.
9. **Protect food and health quality:** meet societal demands on food and health, including safe, nutritious and sustainable food, reducing food waste, as well as animal welfare. Fighting anti-microbial resistance was also highlighted.

In achieving the above, there was also an overarching ambition to simplify the CAP[61], particularly concerning its administration costs. This included embracing technology and big data as a means to simplify the claims process (e.g. pre-filled application forms and payment claims) and deploying satellite technology to help with monitoring farms. *For some, whilst the ambition to simplify the CAP was laudable, many felt that the introduction of National Strategic Plans which would inevitably bring greater diversity across the EU, would make this ambition unattainable.*

From a Northern Ireland perspective, many of the objectives set-out in the Commission proposals chime closely with the themes set out in the DAERA consultation as well as the feedback received during the primary research in this study. Productivity (competitiveness) featured strongly in the Commission's proposals as did environmental sustainability. Themes around providing a fair income to farmers and rebalancing power in the supply-chain were also reflected in the DAERA consultation documents as were the underlying themes of generational (and structural) renewal, vibrant rural economies and the promotion of quality. With Brexit, there is also the additional possibility that Northern Ireland might have

to stay in closer alignment with the EU CAP depending on how the provisions of the NI/IRL Protocol are interpreted and the extent to which any level playing-field provisions apply to agricultural policy.

6.2.1 European Green Deal

In December 2019, the newly installed von der Leyen Commission released its proposals on a European Green Deal[62] which is set to become the flagship policy initiative designed to make Europe the first carbon-neutral continent by 2050. Given that the UK has a similar ambition[63], it is perhaps unsurprising that despite Brexit, it is keeping open the option of having some form of association with the Green Deal. Going beyond just the GHG emissions aspects of sustainability to include biodiversity, natural resources' utilisation, promoting the circular economy and reducing pollution, this policy will have a significant impact on agriculture and associated policy, particularly as these actions are expected to contribute 40% of the CAP budget to climate objectives.[64].

This includes the development of a new Farm to Fork Strategy to develop a fairer, healthier and more environmentally-friendly food system. Here, there will be a drive to do much more with less, particularly as agriculture is currently perceived as having a major negative impact on biodiversity and natural resources depletion. There are also ambitions to make agriculture a "zero-pollution" industry by reducing water, air and noise pollution from food production and farming as part of a new Biodiversity Strategy for 2030[64]. From a trade perspective, there are also proposals to design and introduce a border carbon tax which could eventually result in agriculture being included within an Emissions Trading Scheme. It is also likely to mean that the sustainable development chapters of trade agreements will become more prominent.

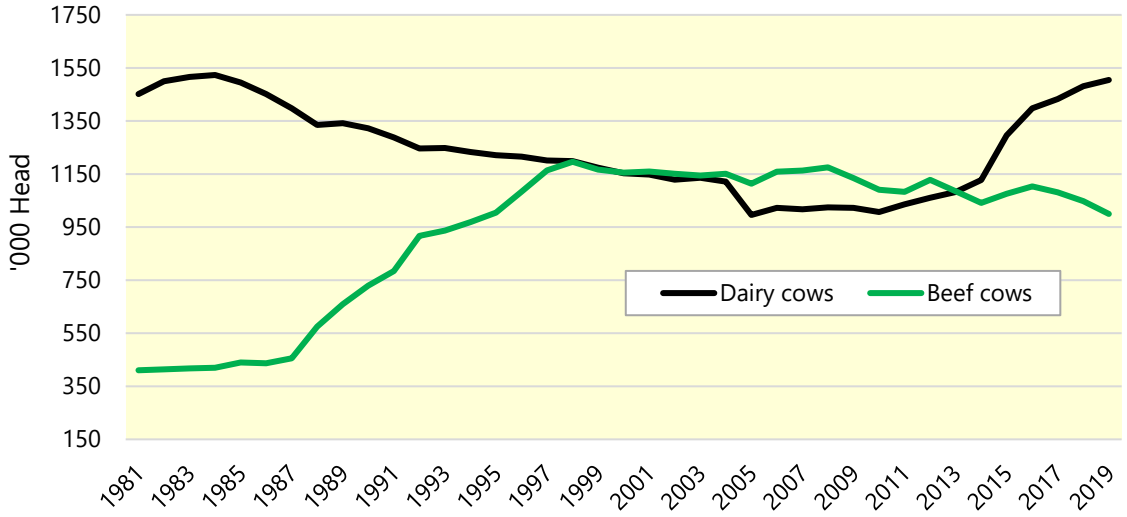
Future EU agricultural policy will have to be cognisant of the ambitions put forward in the European Green Deal. Depending on the extent to which the UK is involved in future European initiatives around net-zero emissions, this could have a significant influence on the formulation of NI agricultural policy.

6.2.2 Ireland

Herd Size Trends – Ireland

Figure 6-3 below how the size of the beef breeding and dairy herds have evolved since 1981. A large proportion of Ireland's beef supply is sourced from the dairy industry[12]. This includes cull dairy cows, and also the progeny of dairy cows that are not being used for replacements in the milking herd. Across Europe, Teagasc[65] estimates that around two-thirds of the animals raised for beef originate from the dairy sector, whilst for the UK around 55-60% of the beef currently produced is ultimately derived from the dairy herd[66]. In Ireland, Teagasc suggests that the CAP support payments introduced in the 1990s helped the suckler sector to exceed the dairy herd but the removal of dairy quotas has seen a significant dairy expansion whilst suckler cow numbers have declined towards to just under 1 million head. CSO data also reveal a 13% increase in total cattle numbers from 5.9 million in 2010 to nearly 6.7 million in 2017 which is likely to be linked to the growth targets listed in Ireland's Food Harvest 2020 strategy[67]. The majority of this has come about as a result of the expansion of the dairy herd with the removal of milk quotas in 2015. This has led to a strong growth in dairy-bred beef production which has created significant problems for the suckler sector as evidenced by recent protests.

Figure 6-3: Ireland Cattle Herds – 1981 to 2019



Source: CSO

As Northern Ireland shares a soft border with Ireland (IRL) and the substantial volume of trading taking place between the two jurisdictions, policy initiatives being applied in one jurisdiction will have a major influence on the other. In that context, it is worth examining in detail the support mechanisms that Ireland deploys and how these compare with Northern Ireland.

Ireland – Policy Mechanisms

- **Beef Environmental Efficiency Programme (BEEP)[68]:** this pilot scheme was introduced in January 2019. The €20 million budget has been used to incentivise farmers to weigh suckler cows and unweaned calves. The payment of up to €40 per calf is made for successful submissions of data. These were paid out in December for 2019. The purpose of the pilot was to improve data on herd performance in order to make better decisions on-farm. This scheme has since been extended for 2020.
- **BEEP Plus:** this is an add-on scheme to BEEP with €10 million to support farmers who vaccinate or meal feed suckler calves and another €10 million for farmers who weigh their dairy calves. Qualifying farmers receive €20 per calf.
- **Beef Emergency Aid Measure (BEAM)[69]:** this was designed as a once-off temporary scheme in response to a fall in market prices in 2019. Accordingly, it has been used as exceptional adjustment aid to support Irish beef farmers who commit to reduce the production of bovine livestock manure nitrogen on their holding by 5%. Applicants must be in an environmental scheme or Bord Bia Beef and Lamb Quality Assurance Scheme (SBLAS). The payment rate is €100 per finished animal (maximum of 100 of such animals) and/or a payment of €40 for each suckler cow up to a maximum of 40 per eligible herd.
- **Beef Data and Genomics Programme (BDGP)[70]:** was introduced to improve genetics in suckler herds which will improve the quality and efficiency of the suckler herd resulting in the reduction of greenhouse gas intensity in Irish beef production. The scheme requires farmers to complete a series of actions relating to accelerating genomics improvement and reducing their carbon footprint over a six-year term and in return they receive payments each year. Whilst doing this, it seeks to provide farmers with opportunities to boost the efficiency of their farming operations. Farmers will receive an annual payment on the basis of an eligible forage area and €142.50 per hectare will be paid for the first 6.66 hectares and €120 per hectare thereafter. The

eligible hectares on which an applicant is entitled to claim will be equal to the number of calved cows on his/her holding in 2014 (known as reference animals) divided by a standard stocking rate of 1.5.

- **Sheep Welfare Scheme[71]:** its purpose is to improve animal health and welfare in the sheep sector, ensuring that farmers provide higher standards than required. It includes improved; lameness control, mineral supplementation for ewes post-mating and lambs post-weaning, scanning pregnant ewes, meal feeding lambs post-weaning, parasite control, and flystrike control. Farmers are paid €10 per breeding eligible ewe. Farmers must comply with Cross Compliance requirements and the standards for Good Agricultural and Environmental Condition of land, otherwise they will incur penalties.
- **Green, Low-Carbon, Agri-Environment Scheme (GLAS)[72]:** is part of the RDP 2014-2020. It was introduced to preserve meadows and pasture land, and habitats retaining carbon in the soil of margins. It seeks to promote low-carbon practices that are beneficial to the environment, water quality and climate change mitigation. Payments are made on a wide variety of actions. Some are deemed to be "core" e.g. nutrient management planning, whilst others are categorised as "priority" (e.g. keeping rare breeds), "secondary" (e.g. low emission slurry spreading) or "general" (e.g. low input permanent pasture). These actions attract varying payment rates. For example, low input permanent pasture has a payment of €30 per hectare whilst the planting of catch crops has a payment of €155 per hectare attached[73].
- **TAMS II[74]:** is co-funded by the Irish National Exchequer and the European Union under Ireland's Rural Development Programme 2014–2020 (RDP). There is €395 million available over the lifetime of the programme (2015 to 2020). There is an investment ceiling of €80,000 per holding and young farmers are entitled to a 60% grant rate whilst 40% is available to all other applicants. It comprises of six schemes aimed to modernise agriculture. Its overall purpose is to aid farmers by granting money to improve and/ or build farm buildings or to buy equipment that will help the farm business. This includes low emission slurry spreading equipment, animal housing and welfare, feed nutrient storage and animal handling equipment[75].

Taken as a whole and in addition to the standard BPS payments, this suite of support schemes constitutes a significant amount of additional support to Irish beef farmers and goes further than what is available elsewhere. Table 6-2 compares the "typical" levels of support available to NI suckler beef and sheep farmers in comparison to their peers in the Republic of Ireland. Although the support received under the BPS and other forms of direct support is larger in NI, when all of the additional schemes in the Irish Republic are taken into consideration, it shows that NI farmers receive less support.

Table 6-2: Comparison of Support for Cattle & Sheep Farms in N. Ireland and Irish Republic

Northern Ireland	Payment (£)	Ireland	Payment (€)	Payment (£)*
Based on Lowland Cattle and Sheep Farms from DAERA Farm Incomes in NI 2017/18[76]		*Based on Teagasc National Farm Survey (2018) – Cattle Rearing Farms (All Farms)*[77]		
BPS	£345/Ha	BPS	€243/Ha	£217/Ha
EFS	£9/Ha	GLAS	€64/Ha	£57/Ha
Other Support	£8/Ha	Other Support^	€74/Ha	£66/Ha
Sub-Total	**£362/Ha**	**Sub-Total**	**€381/Ha**	**£340/Ha**
		Additional Supports		
		BEEP	€40 (£36) per calf	
		BEEP Plus	€20 (£18) per calf	
		Sheep Welfare	€10 (£9) per ewe	
		BDGP	€120 (£107) - €142 (£127)/Ha	
		BEAM	€100 (£89) /finished animal (max. 100) €40 (£36) /suckler cow (max. 40)	

Sources: DAERA and Teagasc

* Based on an exchange rate of €1 = £0.89281[78] which is the 2018 BPS conversion rate used by DAERA.

^ Includes Disadvantaged Area Scheme (DAS) which is Ireland's Areas of Natural Constraints (ANC) scheme[79].

Ireland – Strategic Initiatives

Whilst Ireland is under the remit of the CAP, as alluded to above, there have been a series of strategic initiatives to develop Ireland's agri-food sector which are of relevance to formulating suckler beef and sheep policy in Northern Ireland. In 2010, Food Harvest 2020 was developed, followed by Food Wise 2025 and recently the Agri Food 2030[80] consultation took place.

The Food Harvest 2020 strategy[81] provided a strategic vision for the Irish agri-food sector and in many ways provided a template which has been built upon in subsequent initiatives. In gathering its evidence, the document provided projections on what commodity markets and the policy environment would look like in 2020. It also identified the key factors which would drive competitiveness in the years ahead.

That said, several of the targets (e.g. increasing primary output value in the agriculture, fisheries and forestry sector by €1.5 billion) were expressed in monetary terms only and were achieved by default when agricultural prices rose in recent years). For beef, the key target was to grow the value of output by 20% in the decade to 2020. There were other less concise targets around improving market returns, GHG emissions, improving its premium product status (based on grass-fed systems) and enhanced viability across the supply-chain. A similar 20% output value growth target was also set for the sheepmeat industry with the supply-chain moving to a more collaborative approach to improve quality.

Food Wise 2025[82] built on Food Harvest 2020 by setting a vision of primary producers and agri-food businesses at the heart of vibrant rural and coastal communities across Ireland. The strategy focused on five cross-cutting themes – environmental sustainability, human capital, competitiveness, market development and innovation. There was an overall target to increase gross value added of Irish agri-

food by 70% versus the 2012 baseline and to generate 23,000 additional jobs up to 2025. There was also a greater focus on tailoring Irish produce to meet consumers' different life-stage requirements. Targets for the beef and sheep sectors were more varied than just output increases. For example, there was a recommendation to increase farmer participation in Ireland's Beef and Lamb Quality Assurance Scheme (BLQAS) to 90% by 2025. There was also a greater emphasis on bio-security to develop more preventative and early-warning systems for identifying diseases and the like. There was also a SWOT analysis undertaken for each sector and Figure 6-4 gives an example for the beef sector which is of relevance when considering future suckler beef and sheep policy in Northern Ireland.

Figure 6-4: SWOT Analysis for the Irish Beef Sector

Strengths	Weaknesses
• Grass reared, welfare friendly production system • Specialist suckler beef production • Cattle and beef traceability systems • Credible and sustainable quality assurance scheme • High penetration of high-end retail outlets across the EU • Strong reputation in traditional markets • Capacity and capability to meet demand	• Land transfer, mobility and structural issues • Low profitability at farm level and dependence on direct payments • Skill gaps at all levels of the supply chain • National cost competitiveness, especially utilities and labour • Lack of scale across the sector combined with demographic factors • Dependency on the UK market while the reputation of Irish beef is less well known in new and developing markets
Opportunities	**Threats**
• Global growth in protein demand • Developing a brand image for Irish beef based on superior attributes to secure additional markets and price premiums • Building Ireland's reputation for beef production in new markets (USA, Africa and Asian markets, particularly China) which can absorb any increased production • Use of genomics, breeding indices and sexed semen to improve beef quality output from the dairy herd and technical efficiencies in the suckler herd • Potential markets for niche high grade products • Fifth quarter and meat by-products	• Impact of animal disease incidents • Food safety incidents • Health image of beef products • Raw material supply changes linked to dairy expansion • Failure to adopt carbon efficient practices • Potential negative impacts of trade deals (e.g. EU-Mercosur) • Future CAP reform

Source: Food Wise 2025

The recently undertaken Agri Food 2030 strategy consultation[80] noted that whilst the themes of Food Wise 2025 remain relevant, there are areas that require greater focus, particularly sustainability, whether environmental, economic or social. Within this, it was highlighted that changing societal norms and expectations needed consideration so that farming can continue to be supported by the public in its activities. *This trend is equally applicable, perhaps even more so, to Northern Ireland as part of the UK*. The consultation was launched in Autumn 2019 and the strategy is expected to be published in mid-2020.

In Ireland's case, dairy industry growth has had a role in reducing beef prices which have resulted in farmer protests, so the unintended consequences of growth in one sector and its impacts on another need careful consideration in a Northern Irish context.

6.2.3 Austria

Arising from discussions over the course of this study, Austria was mentioned as a country which is perceived to receive significant support via the CAP. According to the EU Commission[83], 110,250 farm businesses received nearly €700 million in direct payment support in 2014, almost two-thirds of which received a payment of under €5,000. Organic farming is particularly prominent accounting for 20% of the agricultural area. 70% of the agricultural land is 'less-favoured' whilst 60% of Austria's territory is alpine land. Key elements of support include;

- **Direct Payments:** As elsewhere in the EU, the CAP system of direct payments apply although 30% of this envelope is directed towards "Greening" payments (on a per hectare basis). The BPS scheme has been moving towards a converged flat rate per hectare and
- **Coupled Support:** 2.1% for the direct payments envelope is focused on coupled support targeted at beef, veal, sheep and goat enterprises in mountain areas.
- **Small Farmers' Scheme:** is a flat rate simplified support system for the smallest claimants (maximum of €1,250/farmer) and seeks to reduce the administrative burden as well as lessen the cross compliance requirements and exempts these farmers from greening rules.
- **Young Farmers:** 25% aid supplement for first 5 years. This is in addition to already existing installation grants. During 2007-2013, more than 8,800 young farmers were installed.
- **Producer Organisations:** play a significant role particularly given importance of organic sector.
- **Rural Development:** projected spend of €557 million per year over the 2014 to 2020 period, which is an increase on the 2007-2013 spend. It focuses on three key elements[83];
    - Preserving ecosystems (particularly alpine) and an efficient use of natural resources (nearly 80% of the agricultural area under management contracts). Planned agri-environmental programmes also focus on enhancing organic farming, improving soil and water health and promoting biodiversity.
    - Improving competitiveness of the agricultural and forestry sector (20,000 farms targeted, 600 innovation projects and training for 600,000 people).
    - Creating conditions for the economic and social regeneration of rural areas (75 Local Action Groups covering 75% of the rural population creating 490 new jobs).

Overall, it would appear that a key contributory reason to why Austrian farming receives generous support is due to the prevalence of organic farming which represents over 63% of permanent grassland[84]. Therefore, the nature of Austrian farming is significantly different to that in NI. That said, efforts by Austrian policy-makers to simplify the administrative burden of compliance requirements for small farms merits some consideration in NI, but needs to be balanced against a productivity and environmental imperative.

6.2.4 Germany

In December 2019, WBAE, the Scientific and Advisory Board on Agricultural Policy, Food and Consumer Health Protection for the German Federal Government, published a report[85] on designing an effective agri-environment-climate policy as part of the post-2020 CAP. It called for a much more targeted and consistent policy measures and states that the CAP has not sufficiently reduced the environmental

pollution caused by agriculture. This is unsurprising given the increased focus on environmental matters in Germany. It gave a mixed review to the Commission's proposals on the future CAP claiming that its proposals on the environment and climate were unambitious and that there was too much of a focus on income support. It called for stringent criteria for the approval of National Strategic Plans, otherwise there would be a race to the bottom on environmental standards.

It made several recommendations on the national (German) design of a future CAP model and how it believed the CAP should function at a wider European level, including those listed below;

- **Clearly identify agri-environment-climate policy issues**: state the contribution the CAP should make to achieving national environmental and climate action plans.
- **Specify and gradually increase the minimum budget shares for agri-environment-climate protection**: spend at least 30% of Direct Payments budget and EAFRD funds on agri-environment-climate action objectives initially and increase this budget over ten years so that 100% of Pillar I funds are available for ambitious eco-schemes, agri-environment and climate measures under Pillar II (AECM II) or animal welfare measures. Within this several other measures were proposed to reallocate funds from Pillar I to Pillar II and for the complete removal of the basic premium (BPS) in ten years.
- **Establish specific budgets at EU Member State level for biodiversity and moor preservation:** establishment of specific EU budget shares for the Natura 2000 network and moor preservation (as a pilot project); and the implementation across the EU in the medium term of a specified minimum percentage of extensively farmed land at regional level for species and biotope protection.
- **Replace blanket cross-compliance of direct payments with "specific conditionality":** suggests minimising the conditionality requirements for individual farms in the CAP strategic plan and instead programme targeted, ambitious and well-funded eco-schemes and AECM II. Furthermore, it called for enshrining selected funding regulation standards in regulatory law to maintain land in a good agricultural and environmental condition (GAEC). It also called for individual beneficiaries to be obliged to receive advice or undergo farm sustainability checks.
- **Reinforce constitutional and target conditionality**: support the introduction of a sliding scale of conditionality; and the implementation of binding target conditionality across the EU as part of the CAP strategic plans.
- **Overhaul the CAP's performance framework:** calls for a closer alignment of the reported indicators and objectives as well as the simplification of reporting.
- **Design targeted and efficient eco-schemes:** in national strategic plans and include programme measures that are of interest nationwide and have been formulated for the relevant objectives. It also suggests designing and rewarding measures differently by location; and create targeted combination options. It also suggested excluding eco-scheme payments (Pillar I) from capping or degression.
- **Open up eco-schemes to animal welfare measures and develop animal welfare**: support the ability of member states to compensate for some of the costs incurred by increasing regulatory animal welfare standards considerably above the EU average .
- **Increase the focus of Pillar II agri-environment-climate measures on objectives:** by means of innovative incentive mechanisms which include developing programmes for results-based reward of environmental and climate performance.

Arguably, the WBAE proposals had much less of a productivity focus than elsewhere. That said, it is noteworthy that a results-based approach is favoured and the linking of reported indicators with key

objectives is also mirrored by policy reform proposals elsewhere. Furthermore, the replacement of cross-compliance with specific conditionality (enshrining standards into regulatory law) echoes calls in the primary research for a streamlined compliance model. It suggests that access to funding should be contingent on achieving minimum legal standards. The focus of the WBAE study on diverting funds from Pillar I to Pillar II might be no longer relevant to NI or UK agriculture post-Brexit but the concept of diverting more of the basic payment towards environmental considerations is common across both EU and UK agricultural reform.

6.3 NON-EU POLICIES AND APPROACHES

6.3.1 Norway

The OECD identifies Norway as one of the most heavily protected agricultural sectors globally[86] with agricultural support estimated to be in the region of 60% of gross farm receipts. The Norwegian Government has identified four main objectives for its agricultural policy[87]. These are: food security; maintaining farming activities throughout the entire country; increased value creation and sustainable agriculture. Just 2.7% of Norway's land area is devoted to agriculture which compares to 71% in the UK[88] (and 78% in Northern Ireland[89]).

Market price support is dominant and whilst payments based on output have declined in the last 30 years, they still account for an important share of support. According to the Norges Bondelag (a Norwegian farmers' union)[87] agricultural support in Norway consists of four key pillars;

1. **Border protection:** is claimed to be crucial given Norway's challenging topography, high-cost levels and choice to maintain a diversified farm structure. It is partly for this reason that agri-food sits outside of Norway's agreement with the EU to be part of the European Economic Area (i.e. CAP rules do not apply to Norway and there are only limited trade preferences for agri-food products); however, it must be noted that food and veterinary matters as well as organic farming regulations are covered in the EEA agreement.
2. **Legal framework:** there are a series of laws in place which ensure that farmers have rights to own and operate their farms which gives rise to a diversity in farm sizes across the country. These laws also ensure that farmland is used for food production and that the use and protection of agricultural farm land is enshrined in Norwegian Law (The Agricultural Land Law). There are also requirements for the farmers to live on and to operate the land that they own.
3. **Negotiations between state and farmers organisations:** take place annually between the two farmers' unions and the Norwegian Government to determine the product prices the farmers receive, the size of the budget transfers to the agricultural sector, and how these funds are distributed. When negotiations conclude an "agricultural agreement" goes before Parliament for approval
4. **Market regulation:** target prices set for range of commodities including meat and milk. The regulators (farmer owned cooperatives) keeps prices as close as possible to those negotiated in the agricultural agreement. The target prices function as maximum prices and if exceeded, Norway opens for export for the affected commodity. Market regulators are obliged to collect products from all farmers, thus keeping prices approximately equal to all and providing farmers with security.

Given the wide variation in topography and farm sizes across Norway, differentiating subsidy rates are used particularly for dairy and land payment rates are also differentiated by topography and by

agricultural production. There is also an additional strand of payments for sustaining cultural landscapes which are consistent throughout the country. For farming to be made profitable on both smaller and larger farms, subsidies paid per animal are highest for the first number of animals and then declines as herd numbers increase on each farm.

In many ways, the support provided to agriculture is one of the most generous globally and Norway is aided by having the ability to divert revenues from oil & gas production to other policies such as supporting agriculture. It is also quite unique in that farmers' unions help to set agricultural prices each year. This is tolerated at a WTO level as it is a de facto consequence of the way the Uruguay Round negotiations effectively grandfathered pre-existing levels of support (which were even higher in Norway than in the EU). That said, Norway also has obligations to reduce such market distorting support. Whilst there has been an increased focus in recent years on promoting innovation and entrepreneurship in Norwegian agriculture[90], its agricultural policies have a limited impact on innovation.

As outlined above, as a result of its WTO commitments, the EU has had to evolve its support from market price interventions, to coupled direct payments and onwards to decoupled payments. With the UK re-emerging as an independent WTO member, it is not envisaged that it will enjoy the same scope to support its agricultural sector as Norway. As Norway indicates, the UK will only be offered duty-free access to EU market if it accepts limits on its ability to provide support to avoid unfair competition with EU farmers. The EU's views on what these limits should be are spelled out in its draft proposal for the trade agreement. At the moment there is only a leaked version available, but it should be agreed by the Council and published once it is formally presented to the UK at the next negotiating meeting. Furthermore, it is unlikely that the UK Treasury would support such generous support to farming. Instead, it is more likely that the UK will have to adhere to broadly similar commitments on the level of support it provides to farming as per its obligations under WTO requirements as an EU Member State (roughly equating to 5% of agricultural output)[24]. Accordingly, whilst coupled support could feature as a relatively minor component of support.

It is noteworthy that agriculture is seen as part of Norway's national culture and some payments reflect this. Given farming's cultural importance throughout Northern Ireland, it could be argued that this is also a form of a public good and merits consideration when supporting the industry.

6.3.2 Switzerland

Like the EU, Switzerland has undertaken a series of agricultural reforms since the 1990s to move gradually from market price support towards direct payments (independent of production volumes) which aim to compensate farmers for the provision of public goods and ecological services[91]. That said, the OECD reports[92] that support in Switzerland remains relatively high. The future agricultural policy framework from 2022 onwards (AP22+) is currently in development[93]. Given the focus of Swiss agricultural policy on the provision of public goods as well as the fact that it sits outside the EU but is closely aligned with the Single Market, it merits further examination from an NI perspective.

The multifunctionality of agriculture in Switzerland was enshrined in its constitution following a 1996 referendum[94]. These multifunctional tasks focused on four key areas: ensuring food supplies, conserving natural resources, taking care of the landscape and encouraging decentralised settlement.

After 1999, general direct payments to farmers became contingent on good environmental practices (akin to cross-compliance in the EU) and is based on an integrated production principles' approach[92].

These principles covered areas such as animal welfare, ecological compensation areas (ECAs) which must have ≥7% of a farm's utilised agricultural area, as well as soil protection and nutrients usage. Additional payments ("ecological direct payments") were also available to farmers which went above and beyond the general direct payments. Participation in these schemes has been voluntary and were akin to agri-environmental schemes in the EU.

For a time, there were also animal husbandry payments which were headage-based, however, these were removed in the Swiss Agricultural Policy reform programme (2014-17) due to issues around intensification. During this reform, the terminology for ECAs was changed to "Areas reserved for promoting biodiversity" reflecting the emergence of biodiversity as a key policy theme for Switzerland. This policy also put forward six new thematic areas to help protect biodiversity and the landscape as well as the climate, air, water and soil. As a result of this reform, direct payments were categorised as follows[95];

- **Cultural landscape payments:** which aim to keep the cultural landscape open and secure. There is also a separate strand of payments to promote the quality of the landscape.
- **Security of supply payments:** aim to guarantee a reliable provision of foodstuffs to the Swiss population.
- **Biodiversity payments:** to ensure and promote the biodiversity of habitats and include payments for ecological compensation, biological quality and habitat linking.
- **Special production payments:** which aim to promote forms of production which are especially close to nature, to environment and to animal welfare.
- **Resource efficiency payments:** to promote a sustainable use of resources such as soil, water and air and to ensure the sustainable use of means of production. This includes pollution control procedures for slurry application and careful soil cultivation.
- **Transitional payments:** which aim to guarantee the socially acceptable development of agriculture. These payments were also used to compensate farmers for the loss of incomes arising from the removal of animal husbandry payments for example.

There is also a Resources Programme which is funded by the Swiss Government to promote innovation whilst helping to promote sustainability. Projects are financed for six years up to a maximum of 80% of costs. Projects which have been funded include themes such as greenhouse gases, antibiotics usage and the promotion of knowledge transfer beyond the local region is also a key consideration.

Whilst the latest AP22+ remains under development, the initial proposals put forward by the Swiss Government are viewed as controversial by some[95]. Key elements include;

- **Exploiting synergies between sustainability and the market:** focusing on higher value added products which are sustainable, in order to strengthen the market position of farmers.
- **Boosting productivity via technology and digitisation:** this includes the integration of new products such as insects into food and feed.
- **Reduction of ecological damage:** partly through reduced use of non-renewable resources.
- **Protecting water resources:** by reducing permissible yard fertiliser application rates and pesticides usage.

Relative to agricultural policies in other countries, the concept of paying farmers for the provision of public goods is well established in Switzerland. The Swiss approach of providing 'general' (basic) direct payments whilst giving the scope for farmers to voluntarily seek additional payments for the provision of ecological

services chimes well with the EU CAP whilst also sitting outside of the EU. This route could offer scope for Northern Ireland which will sit within the UK agricultural policy framework (focusing on public goods and natural capital) whilst potentially having to maintain a level playing-field with other EU Member States, especially Ireland.

The Swiss definition of public goods is wider than just environmental, it also includes themes such as culture, landscapes, security of supply and resource efficiency. Within this productivity is a key focus area and Swiss policy includes key targets that farmers need to meet to be eligible for payments. The inclusion of productivity and resource efficiency targets for Northern Ireland merits further consideration but such targets need to be kept as simple and concise as possible.

6.3.3 Australia

According to the OECD[96], Australia's support to agriculture is low in comparison with other OECD countries, with total support to agriculture representing 0.1% of GDP. This is split roughly evenly between direct support to producers (PSE) and general services support (GSSE).

In 2018, around 44% of the direct support to producers (PSE) was in the form of subsidies to input use, with a substantial proportion relating to upgrading on-farm water infrastructure to help reduce negative environmental externalities, and payments that seek to help producers deal better with droughts and other natural events through special loans at concessional interest rates. Much of the remaining producer support is directed towards risk and environmental management, with income tax averaging arrangements, farm management deposits and other environmental programmes accounting for 51% of the PSE.

Australia also has an extensive agricultural knowledge and innovation system. This accounts for about 60% of the GSSE spend with infrastructure development (28%) accounting for the majority of the remainder. R&D programmes are a major component of Australia's support to agriculture

Increasing Australian agriculture's resistance to drought is set to continue to be a major focus area. The OECD believes that ensuring farm economic viability in the face of drought and other resource constraints will be its greatest challenge. In 2018, its Government also concluded a review of Australian Standards for the Export of Livestock (ASEL) which recommended mandatory animal welfare outcomes and penalties when requirements on shipping live animals were not met on export voyages.

In terms of productivity, Australia's total factor productivity (TFP) increased by 2% per annum during 2006-15, outpacing the global average (1.5%). The uptake of innovative technologies and practices as well as continued structural adjustment played a key role. Here, R&D programmes are considered influential. Its Rural Development Colleges (RDCs) are the primary vehicle for supporting rural innovation and productivity growth. RDCs are co-financed by Government and industries. They help to set the strategic direction for primary industry R&D investment.

In terms of emissions, Australia runs a voluntary Carbon Farming Initiative[97] where farmers and landowners are able to earn credits by storing carbon or reducing GHGs on their land. Once registered under the CFI, the credits could be sold to those wishing to offset their emissions. *Across NI, there may be opportunities for farmers to engage in similar activities so that the overall emissions for the suckler beef sector are lowered considerably.*

The Australian equivalent of the AHDB is Meat & Livestock Australia (MLA). In 2010, it launched its strategic plan to 2015[98] which covered similar themes to other strategies in the region (e.g. Beef+Lamb NZ) and placed a strong emphasis on developing the capabilities of people within the industry. Arguably, the strategy lacked clear quantitative targets (e.g. improve employee retention rates within all sectors).

However, MLA has also been very active in promoting Australian meat at the consumer level. The Good Meat platform[99] provides important information about cattle, sheep and goat production in Australia, focusing primarily on animal welfare, protecting the environment and health and nutrition. It seeks to inform consumers about the efforts of Australian red meat producers to supply high-quality products whilst demonstrating best practice and continuous improvement. These efforts link closely with a popular 'Australian Beef. The Greatest' marketing campaigns which year-round promotional campaigns via multiple channels including TV, radio, print and social media to showcase the virtues of Australian beef and to provide ideas for quick and easy beef meals.

Both producers and supply-chain partners play a central role in promoting the key messages of these campaigns and seek to demonstrate how producers care passionately about careful land management and working with the climate to ensure efficient and sustainable food production. It illustrates how supply-chain partners to promote sustainability and farmers' role as custodians of the countryside whilst building a stronger connection with consumers.

The Cattle Council of Australia produced its beef industry strategic plan 2020[100] in September 2015. It is based on five key pillars which were;

- **Market growth and diversification:** grow markets and segments within mature markets where there is a capacity and a willingness to pay a premium for quality beef produce whilst creating an environment for commercial brands to flourish.
- **Value chain efficiency and integrity:** shift towards competing on the basis of responsive world-class value chain with robust systems and characterised by payment based on objective measures of product performance (quality).
- **Productivity and profitability:** increase on-farm profitability by accelerating the widespread use of proven technologies and best practices while improving the value-based signals for livestock produced fit for purpose (i.e. meeting customer specifications).
- **Community and consumer support:** maintain and improve public confidence and trust by continually adapting practices to meeting changing community (consumer) expectations and raise public awareness of what the beef industry is doing and achieving.
- **Industry leadership and collaboration:** enable and accelerate supply-chain collaboration by developing industry leaders, strategic relationships, skills and modern business models for industry representation and service bodies.

Although elements of these pillars concern strategic planning and not policy per se, it is noteworthy that productivity & profitability and community & consumer support are central. Marketing and promotion, animal welfare and optimising product quality and cost efficiency are top priorities. Several of the strategic targets are quantified including "generating an expected benefit of $389 million to industry net income by 2020 from marketing and promotional efforts in developing export markets". Each strategic theme includes details of activity areas, key performance indicators and stakeholder responsibility. For instance, to improve meat and livestock specification language to meet customer requirements, one of the KPIs are to improve Meat Standards Australia (MSA) graded carcases by 2 index points by 2020 and by 5 index points by 2030.

6.3.4 Canada

Since 2000, Canada has abandoned most of its agricultural support programmes and has focused primarily on business risk management (BRM) programmes as the primary mechanism for protecting farmers' incomes[101]. In 2008, all BRM programmes were subsumed into a broader agricultural agreement across Canada known as Growing Forward (GF) which focused on four key areas: competitiveness, innovation, environment and BRM. Under BRM, agricultural risk protection has traditionally been provided to farmers under four key programmes. These are summarised below and take account of updates in recent years.

1. **AgriInvest:** is a self-managed producer-government savings account designed to help farmers to manage small income declines and make investments to manage risk and improve market income[102]. Each year, individual farmers can deposit up to 100% of their allowable net sales into an AgriInvest account and would be matched by a governmental contribution equating to 1% of allowable net sales. Farmers' AgriInvest account grows as they make deposits, receive matching government contributions and earn interest. Farmers can withdraw funds from their AgriInvest account any time. Government contributions and interest payments are taxable, whereas farmers' own contributions are not.
2. **AgriStability:** is a margin-based, whole-farm voluntary programme that protects against larger income losses than under AgriInvest. Indemnities are based on the differences between realised gross ("program") margins in any year, and a reference historical margin. Generally, farmers receive an AgriStability payment when their program margin in the current year falls more than 30% below their applied reference margin[103]. AgriStability covers 70% of a farmer's decline that is beyond the 30%. Reference margins are generally based on a historical five-year average, with the highest and lowest margins omitted (Olympic average).
3. **AgriRecovery[104]:** provides relief to help producers deal with the income and production losses they experience when disasters occur. The focus is on extraordinary costs that producers must take on when recovering from natural disasters.
4. **AgriInsurance[105]:** provides producers with cost-shared insurance for natural hazards in order to minimize the financial implications of production and/or asset losses. It is aimed at crop production and therefore not directly relevant to livestock. Examples of possible eligible perils include drought, flood, wind, frost, excessive rain, heat, snow, uncontrolled disease, insect infestations and wildlife. Producers get a payment when they experience a production loss during the year.

The latest five-year programme is known as the Canadian Agricultural Partnership (hereafter referred to a Canadian AP to avoid confusion with the EU CAP)[106]. In addition to the programmes above, there are a range of other initiatives focusing on innovation, competitiveness, marketing, risk management, quality and science. These have not been focused on in detail in this review but further information is available via the Agriculture and Agri-Food Canada website[6].

Canadian agricultural policy is highly-oriented towards insurance, a concept that is quite deeply engrained into North American farming. The schemes outlined above allude to the importance of having historical

[6] See: https://www5.agr.gc.ca/eng/programs-and-services/?id=1362151577626

data available to base insurance payments on. Arguably, this is a challenge in Northern Ireland as the culture of insurance is not as well established. Furthermore, the process of setting up an insurance scheme can be quite complex without building up a historical base of comparative data to base premiums and claims on. The feedback received during the primary research phase of this study suggests that if insurance were to be viable in NI, it should be focused on price. Section 7.3.5 examines this in more detail.

The producer-government savings account concept merits further examination as a means to protect against small income losses year-to-year. However, given the extent to which the Northern Ireland suckler beef and sheep industry would be unprofitable if it were not for direct payments, additional support would be needed for farmers.

In addition to government policy, it is also notable that in 2014, Canada developed its National Beef Strategy[107]. This is an industry-led initiative featuring all major national and provincial beef sector organisations, including its animal feed and beef breeding associations. Its mission set-out to be the most trusted and competitive high-quality beef producer globally. The key pillars are;

- **Beef Demand:** increase carcase cut-out value by 15% by 2020.
- **Competitiveness:** reduce cost disadvantages compared to main competitors by 7% by 2020.
- **Productivity:** increase production efficiency by 15% by 2020.
- **Connectivity:** enhance synergies within industry and connect positively with consumers, the public, government, and partner industries.

The National Beef Strategy has been updated for the 2020 to 2024 period[108]. Whilst the four key pillars remain the same, the targets have evolved. For instance, under competitiveness, there is now a target to reduce labour shortage by 50% and under productivity to reduce calf death losses by 5% in each region whilst improving feed efficiency by 5% as well as national average hay yields by 2-10%. The original 2014 strategy also cited Canfax Research which claimed that a 30% increase in forage production can lead to a 15% production cost decrease at the cow-calf level.

The strength of the Canadian strategy is that many of its key performance indicators (KPIs) are quantified and highly farm-level focused. These targets have also been monitored regularly[109]. Arguably, there is less emphasis on the environment and sustainability, but it is a key theme under the Beef Demand pillar and it is targeting increased uptake of Canada's Certified Sustainable Beef Framework and emphasises the need for science-based information to inform effective public information and policy development.

From an NI suckler beef and sheep perspective, the Canadian National Beef Strategy contains useful insights on how actions could be quantified at the farm-level. All major stakeholders represented including the upstream beef breeding and animal feed sectors. As elsewhere, productivity and improving cost competitiveness is a major focus whilst there is also close alignment with other branches of governmental policy including labour as well as marketing and trade.

6.4 LESSONS FOR NORTHERN IRELAND

The analysis above shows that several of the key themes identified by previous strategic and policy reviews in Northern Ireland are also prevalent in other countries.

- **Productivity and profitability:** the need to achieve improved productivity as the key driver of farm profitability was identified on numerous occasions. There is an increasing focus on offering

support payments on the basis of improving productivity (e.g. Ireland). The environmental benefits of achieving better productivity were also emphasised on several occasions.

- **Knowledge transfer and innovation:** is seen as key to unlocking the productive potential of farmers and Australia particular appears to have had successes in this area based on its TFP improvement and the degree to which such programmes form a core part of its policy.
- **Strategic vision:** although frequently undertaken separately to policy formulation, having a clear idea of what the industry as a whole is seeking to achieve five or ten years into the future helps to set a unifying logic and direction for the industry. Policy needs to be driven by this.
- **Quantifying targets at farm-level:** arguably this is once again more associated with strategic planning but it is evident that policy-makers are increasingly seeking to be results-focused. Some evidence of this was identified in Switzerland. Both Canada and Australia are also pushing strongly on this from an industry perspective. If NI policy chooses this path, it is vital that the targets set are controllable at farm level and at the same time keep any bureaucratic burden on farmers to a minimum.
- **Environment and sustainability:** is arguably more prevalent in Europe than elsewhere but it is increasingly clear that addressing the GHG emissions challenge is seen as a priority in most countries. Australia's Carbon Farming Initiative is evidence of this and New Zealand has also set ambitious climate change targets for its farming sector. Managing nitrates and ammonia emissions have also climbed the agenda in several countries (especially within the EU).
- **Consumer and customer focus:** is especially evident in countries where support is lower. For instance, in Australia, all industry initiatives place customer needs and community (consumer) support at the heart of their strategic efforts. Arguably, in the past the EU CAP has led to some farmers downgrading the importance of the customer and consumers' need as market signals became muddied by price supports and the focus on subsidies. To survive long-term, the NI suckler beef and sheep sector needs to place the customer back to the heart of its activities as an industry, including policy-making. Here, providing the correct market signals to farmers is crucial and all stakeholders (including retailers, food service companies and processors) have a key role to play, not just Government.
- **Market growth and diversification:** is a priority in export focused economies (e.g. Australia). For NI, given the potential of cheaper imports finding their way into GB post-Brexit, it would be prudent to identify ways in which it can add value in the quality focused segments of the UK market whilst also seeking to develop similar opportunities elsewhere.
- **Coupled support needs correct targeting:** in the past, headage payments have led to a focus on quantity and not quality. In Ireland, the new headage-based payments that it has introduced are primarily efficiency and animal-welfare focused. In Northern Ireland, if coupled payments are to feature, any unintended consequences need to be considered before implementing such schemes. Furthermore, given the extent of the emissions challenge, it would appear prudent for this to feature as a condition of receiving a coupled payment.

Public goods: rewarding farmers for these benefits is most evident in Switzerland, Norway and within the EU. Although it will be the central focus of a future English (and Welsh) agricultural policy, payment mechanisms are still being established. For Northern Ireland, it might be worth firstly evaluating the value of public goods currently being provided by farmers and then to calibrate existing support mechanisms towards this. In practice, this would mean quantifying, where possible, existing public goods supplied by farming (e.g. carbon sequestration and cultural landscapes) and using this as a basis to justify existing support levels. All the while, recognising that work needs to be done on addressing other challenge which are undermining public goods provision.

7. ANALYSIS OF FUTURE POLICY OPTIONS

Whilst the focus of the previous chapters was very much on past and present policies in NI and elsewhere, the focus of this Chapter shifts towards the future and the policies needed to support a competitive and viable suckler beef and sheep industry which delivers for NI farmers, processors, other industry stakeholders, and wider Northern Irish society. It commences with a short overview of the 2018 DAERA consultation and associated feedback (Section 7.1) before outlining a five-year vision for the industry (Section 7.2) before evaluating some potential policy tools which could be used to achieve these long-term aspirations (Section 7.3).

7.1 FUTURE NI AGRICULTURAL POLICY

7.1.1 DAERA 2018 Consultation Proposals

In July 2018, DAERA launched a consultation on the future agricultural policy framework and support arrangements for Northern Ireland as part of preparations to leave the EU[110]. The Stakeholder Engagement document[111] accompanying this consultation set-out some key themes that DAERA was considering as a result of an initial consultation with stakeholders. It identified four key themes which are briefly summarised below;

1. **Increased productivity:** in international terms. Four policy instruments were identified;
    a. **Science and innovation:** aimed at improving productivity whilst bolstering environmental sustainability, animal health and welfare standards. It stated that much could be achieved both from existing resources and additional investment. A 'Productivity Grand Challenge' was proposed to encourage collaborations across disciplines, create a platform approach to science delivery, adopt longer-term horizon, whilst increasing the risk appetite of participants.
    b. **Agricultural education:** seen as a cornerstone of successful on-farm adoption of new knowledge and technology. Future policy interventions needed to have a strong education, training and knowledge exchange component. It proposed that from 2025 onwards, anyone taking over as head of a farm business would need to have a Level 3 qualification or above and this would be encouraged via a number of incentives including a reduced risk of inspections and membership of future quality schemes.
    c. **Knowledge exchange (CPD):** acknowledgement that attainment of Level 3 qualification alone is insufficient and that the continuing commitment was needed. A training credit scheme was proposed.
    d. **Investment and restructuring:** targeted investment aid to improve technology uptake and aligned with key policy objectives, notably environmental sustainability. Alternatives to grants were also suggested (e.g. loan guarantees) and there was a focus on promoting land mobility, generational renewal and longer-term land leases. The importance of fiscal/tax incentives were also highlighted but these would be dealt with when providing input to UK fiscal policy.
2. **Improved resilience:** against external shocks. Suggested instruments included;
    a. **Basic farm resilience support:** acknowledged that a balance was needed between providing a safety net and ensuring that farm businesses were efficient, productive and managing risk competitively. It mentioned that the CAP did not strike the appropriate balance, but acknowledged that an appropriate transition was needed from CAP Pillar I to

the new domestic framework. A progressive move from area payments to other policy interventions over a defined timeline was proposed. However, the option of retaining some funding within an area-based payment to provide an underlying and predictable revenue stream targeted at active farmers was also mooted.

Another option cited was targeting payments to take account of natural disadvantages such as poor soils or the payment could be used to drive some basic biosecurity, land management or productivity objectives by attaching appropriate conditions to the payment.

b. **Income protection / anti-cyclical measures:** to include insurance schemes, potentially involving the private sector, were suggested. The point was made that in order to be considered minimally trade distorting that they must be linked solely to agricultural income and not production or prices. A trigger point based on a 70% threshold based on historical incomes was suggested with the compensation payment capped at 70% of a farmer's income loss in the year concerned. The example of Canada was mentioned as the agricultural income data required for the scheme was based on individual tax returns. It also acknowledged deficiency-type payment systems (e.g. US dairy margin protection programme) but cited challenges around data, trigger points, uptake and refraining from helping those who do not participate as major hurdles.

c. **Fiscal measures:** acknowledged the role that capital allowances and income tax averaging schemes currently play to mitigate volatility in farming. A deposit scheme akin to that operating in Australia where "farmers credit income (before tax) to an account in profitable years that can subsequently be drawn down in more challenging times (and taxed at that point)[111]" could be an option to support farming incomes. However, this will be influenced by the extent to which EU State Aid rules will apply in Northern Ireland.

d. **Other measures:** to cater for more extreme events and crises (e.g. disease outbreak) which will require special Government intervention. Here, the focus in providing the appropriate legislative capability to bring about such measures quickly. These would need to be positioned within a clear UK framework whilst having the appropriate flexibility to implement regionally.

3. **Environmental sustainability:** acknowledged that the core objective of farmers is to produce food but this needs to be done sustainably with due regard for stewardship of habitats and landscapes. It identified four key principles;

   a. **Delivering a positive environmental legacy:** recognition of the environmental impacts of farming and land management practices which should not compromise the environment for future generations.

   b. **Reward the provision of public goods:** for verifiable delivery of identified environmental outcomes.

   c. **Positive behavioural change:** farmers need to be given the correct information, at the right time, on why they are being asked to change, how to achieve the change, and what the benefits are for them and for the environment.

   d. **Collaborative** approach incorporating the unique perspectives of farmers: learn from past experiences and failures, and to address the challenge of farming sustainably whilst remaining a productive and profitable farm business.

   The consultation also called for any schemes to be **outcomes-focused**. It identified the following target outcomes;

   - Natural capital and its associated ecosystem services are protected and enhanced;
   - The carbon intensity of food production continues to fall;

- Consistent increases in the proportion of priority habitats and species (of UK and European importance) achieving favourable or recovering status, as well as broader gains in biodiversity;
- Soil quality and functions are improved and soil erosion is prevented;
- The proportion of water bodies achieving good status consistently increases in the medium to long term;
- Ammonia emissions are reduced to a point where critical loads are not exceeded across Northern Ireland; and
- There is increased resource efficiency within farm businesses.

It called for the development of new delivery models which facilitated involvement from other actors aside from farmers (e.g. processors, local authorities, non-government sectors etc.). There was also recognition that future incentives need not be solely based on income foregone and may also include market-led incentives which could look at issues such as flood mitigation and carbon trading etc.

4. **Supply-chain functionality:** industry operating efficiently within an integrated, competitive, sustainable and responsive supply-chain. Key focus areas;
    a. **Information:** outlined farmers' need for ready access to impartial and timely information on pricing, production costs and markets, and that Brexit provides an opportunity to review the appropriateness of the existing EU systems. It acknowledged that whilst the UK may develop a separate system to the EU, comparisons with key international markets need to be facilitated.
    b. **Education and knowledge transfer:** focusing specifically on meeting customer requirements but also on meeting verifiable unique selling points for NI produce (e.g. animal welfare, food safety, and environmental credentials). It proposed training and support to understand and meet customer requirements which could consider the active involvement of processors and retailers. The role of farmer training on business planning, benchmarking and risk management was also acknowledged.
    c. **Incentivisation:** consideration of government interventions to foster greater cooperation and collaboration within the agri-food supply chain (e.g. support producer organisations). Such collaborative ventures could be linked to the main objectives of the agricultural policy framework, including delivering improved productivity, better resilience or improved environmental performance.
    d. **Regulation:** examine opportunities to enhance the regulatory framework and functioning of the supply chain and prevention of unfair trading practices.

7.1.2 DAERA 2018 Consultation Responses

The DAERA consultation attracted substantial interest with 1,277 responses received. Based on a summary compiled by DAERA[112], below is an overview of the responses received;

1. **Productivity:** general support for the Productivity Grand Challenge and the encouragement of agricultural education, knowledge exchange, CPD, innovation and alternatives to capital grants. Lukewarm support for the linking of educational attainment to other policy interventions.
2. **Resilience:** strong support for a resilience payment with broad support on targeting this to take account of natural disadvantage. Mixed views on capping and insurance. Good support for fiscal measures and a crisis response framework.

3. **Environmental sustainability:** good support for the key environmental principles and the need for investment in research and education. Focus on outcomes-based measures and co-design also well-supported. A move from a costs incurred approach was also supported to incentivise changes.
4. **Supply-chain:** good support for Government input to ensure transparency and for training on supply-chain awareness. Mixed views on delivery and use of qualifications.
5. **Other issues:**
    a. **Grants:** equality issues over qualification requirement to qualify for support.
    b. **Rural connectivity:** concerns over rural broadband and transport links.
    c. **Regulatory inspections:** need to be proportionate and flexible.
    d. **Productivity and the environment:** not mutually exclusive and farmers play a pivotal role. This linked with calls for a joined-up approaches to consider other inter-related issues e.g. food supply and security, biodiversity, rural heritage, recreation and tourism.
    e. **Public money for public goods:** received general support and Brexit was seen as an opportunity to re-shape and re-focus the industry with a clear road-map.
    f. **Ambition:** some claims that this was lacking
    g. **Transition:** received general support but mixed views on continuation of Greening.

Productivity and environmental concerns were top priorities. It is also evident that helping farmers to obtain greater resilience against market slumps and extreme weather and disease events is particularly important in NI, especially in disadvantaged areas. Similar responses were received during the primary research undertaken in this study. Whilst a greater focus on transparency and a better functioning supply-chain was called for, the need for farmers to produce in accordance with end-customers' specifications was also highlighted in the primary research undertaken in this study. Arguably, rewarding for better quality is best left to market forces, but research feedback suggests that if future policy could be formulated in a way that assists farmers to focus more on producing in accordance with market requirements (not their own perceptions of quality), it would be helpful.

7.2 SUCKLER BEEF AND SHEEP POLICY – DESIRED OUTCOMES

Following on from the primary and desk-based research as well as Steering Group meetings, it was decided to set-out a long-term vision for a viable NI suckler beef and sheep sector. The aspiration is to achieve the desired outcomes for the sector approximately 6-7 years after a NI agricultural policy has been initiated. However, it should be emphasised that these should be seen as long-term goals for the sector and are therefore guiding principles for future policy. The author acknowledges that the specific means to achieve some of these aspirations will need to be developed (e.g. GHG auditing) and work is urgently needed on these, but that should not prevent the industry from setting long-term targets.

Long-term Vision: By 2027, the NI suckler beef and sheep sector is internationally competitive, viable and increasingly sustainable. This means that emission levels are reducing at a greater rate than the UK's targets under the Paris Accord. Productive farmers receive a fair income for their market-leading produce in a manner that mitigates the negative effects of volatility whilst permitting processors to be internationally competitive and gain market share in growing markets. All the while, the sector delivers public goods, particularly environmental and societal outcomes which are valued by Northern Irish society and contribute to a vibrant economy.

Desired Outcomes – by 2027:

- **Environment and Productivity:** output is maintained at current levels in the near-term. Simultaneously, key input usage (feed, fertiliser and labour) has reduced by 10% whilst CO_2 equivalent emissions (based on current methodologies of calculating agricultural emissions) are 20% lower versus base-levels (i.e. 2019) meaning that farming is playing its part in meeting the UK's long-term emission targets.
  - Every beef and sheep farm in NI claiming support payments will have a GHG emissions audit undertaken within 18 months of the scheme commencing. This should be based on a robust and transparent methodology.
  - CO_2 emissions targets will have been achieved on 90% of farms by 2027.
  - All supported farmers comply with Nitrates Action Programme (NAP) and Phosphorous Regulations.
  - All supported farmers have a plan in place and are taking actions to reduce ammonia emissions based on Government regulations and guidance.
- **Production cost competitiveness:** the performance gap, in terms of production cost, between the top 25% and the bottom 25% of farms is halved across each major farm types (lowlands, uplands etc.) whilst per unit costs of production are lowered across all quartiles.
- **Resilience and market orientation:** Farmers receive a fair and transparent price for prime produce on the basis that key quality criteria are met, thus bolstering their resilience. They receive protection during periods of market slumps in a manner that conforms to WTO obligations and other State Aid rules that NI must adhere to. At the same time, farmers are market oriented and responsive to consumer demands.
- **Transition:** any farmers exiting the industry have good access to rural housing and re-training schemes to enable them to secure alternative employment nearby (if applicable).
  - Farmers wishing to exit and retire from working have an economically sustainable pathway to do so without incurring a significant taxation burden whilst ensuring a fair continuity of income.
  - Simultaneously, young or expanding farmers are given better opportunities to access additional land provided they farm in a manner that conforms with policy objectives and their agreements with lessors.
- **Knowledge and innovation:** all supported farms are regularly engaging in CPD training and is a key means to ensuring that NI farmers stay internationally competitive whilst also helping to halve the performance gaps identified above.
- **Quality:** all NI beef cattle and sheep farmers in receipt of support are Farm Quality Assured (FQA) and more than 90% have achieved Lifetime Quality Assured (LQA) status. NI is consistently ranked in the top-5 internationally for quality and food safety. 90% of suckler beef cattle and sheep/lambs born each year are registered under an approved beef genetics' scheme.
- **Enhanced Connectivity:** the sector's valuable contribution to a robust rural economy is supported by significantly enhanced broadband connectivity with average speeds at 75% of urban areas (as at 2027) and all rural dwellers achieving connectivity speeds at 50% or higher vis-à-vis urban areas. It also contributes to the maintenance of rural populations and the cohesion of rural communities, all of which make a significant contribution to the provision of public goods in the UK.

7.3 EXAMINATION OF POLICY TOOLS

With the above aspirations in mind, several potential policy tools were evaluated. During the primary research, interviewees were asked for their opinions on a wide range of policy tools that were deemed to have scope for application within the NI suckler beef and sheep sector. Table 7-1 summarises the schemes assessed and the thoughts from industry experts on their potential. Taking into consideration the desired outcomes, it was decided to evaluate the following tools as a means to identify the best combination of policy mechanisms for the NI suckler beef and sheep sector;

- Decoupled direct payments
- Public money for public goods scheme
- Headage-based coupled payments
- Deficiency-based coupled payments
- Price-based insurance

Each tool is examined in the Sections that follow. Table 7-1 gives a synopsis of the primary research findings concerning each tool. This is then supplemented in the Sections below by secondary research evidence where appropriate. Reference is also made to previous Chapters which reviewed existing policies and their influence on the performance of the NI suckler beef and sheep sector.

Furthermore, Section 7.3.6 provides additional insights on other policy mechanisms which merit further consideration based on the primary research findings. These include knowledge transfer and innovation schemes as well as an early-retirement/land mobility scheme. Chapter 8 contains The Andersons Centre's proposals on how these mechanisms could be combined to provide a future agricultural policy framework.

Table 7-1: Potential Policy Tools for Application in the NI Suckler Beef and Sheep Industry

Policy Tool	Summary of Comments
Decoupled Payment (e.g. BPS)	Perception that many farmers are not productive as there is no incentive. Also helps to deliver public goods. In future, should have some form of baseline productivity and environmental elements.
Public Money for Public Goods (e.g. ELMs)	Clear direction of travel in Westminster, therefore, must consider. Works best if farmers have choice from menu of options.
Agri-Environment Schemes (e.g. EFS)	Has not had major impact on numbers. Has potential in NI but EFS compares unfavourably to ROI schemes. Needs to be bigger and more ambitious in future.
Coupled Payments (e.g. Suckler Cow or Slaughter Premium)	Incentivises higher numbers, can compromise quality. Since removal, suckler beef & sheep model has suffered. Worth considering as long as it does not result in over-supply. Payment needs to be made worthwhile to drive behavioural change. This could be achieved by focusing headage payments on efficiency and animal welfare.
Deficiency Payments	Several participants are positive on this, but needs to incentivise quality, not result in over-supply and be within WTO limits.
Insurance	Thought by many to be complex and data-hungry. Only schemes focusing on price thought to have potential. Issues around those that will not insure and schemes might not promote quality.
Less Favoured Area (LFA) compensation	Some did not see these having a major impact. However, others believe it has been very important and decreases in payments in recent years have had a significant impact on declining numbers.
Young Farmers' Payments	New entrants need to be encouraged but current incentives thought to be insufficient. Need more favourable treatment for grant applications and the like (e.g. higher grant percentage).
Business Improvement Grants (e.g. FBIS)	Belief that it has helped more intensive sectors (e.g. poultry and dairy). Could help some beef & sheep farmers but needs flexibility.
Resilience Payments	View that farmers should be entitled to some form of base level of support to ensure security of incomes.
Rainy Day Fund	Thought to help with improving resilience and should be used for major crises (e.g. weather events, major forage shortages etc.)
Knowledge Exchange and Innovation	Seen as having potential if focused on productivity, environmental sustainability and greater market orientation. Farmers need flexibility and programmes should not be 'reinventing wheel'.
Income Tax Deferment Schemes	Thought to have potential but State Aid limits could preclude many of them under EU Law which would still be relevant to NI.
Producer Organisations and Collaborations Support	Some positive views on these but limited familiarity amongst participants.
Early Retirement and Land Mobility	Seen by several as closely linked. Older farmers need strong incentive to come on-board and perceived 'security' of continued BPS-type payment over a number of years would help. Longer-term tenancies also critical.

Source: The Andersons Centre

7.3.1 Decoupled Direct Payments

The primary research suggests that there is still significant support for some form of direct payments mechanism as a means to support farmers' incomes. Some opined that decoupled direct payments similar to the BPS are already a form of public money payments for public goods. That said, there was a general belief that the current system is in need of reform as it was claimed that there are many farmers in receipt of BPS support but are not farming the land to anywhere near its productive capacity. There is also a recognition that there would need to be a greater focus on environmental considerations if this form of support were to continue in the future.

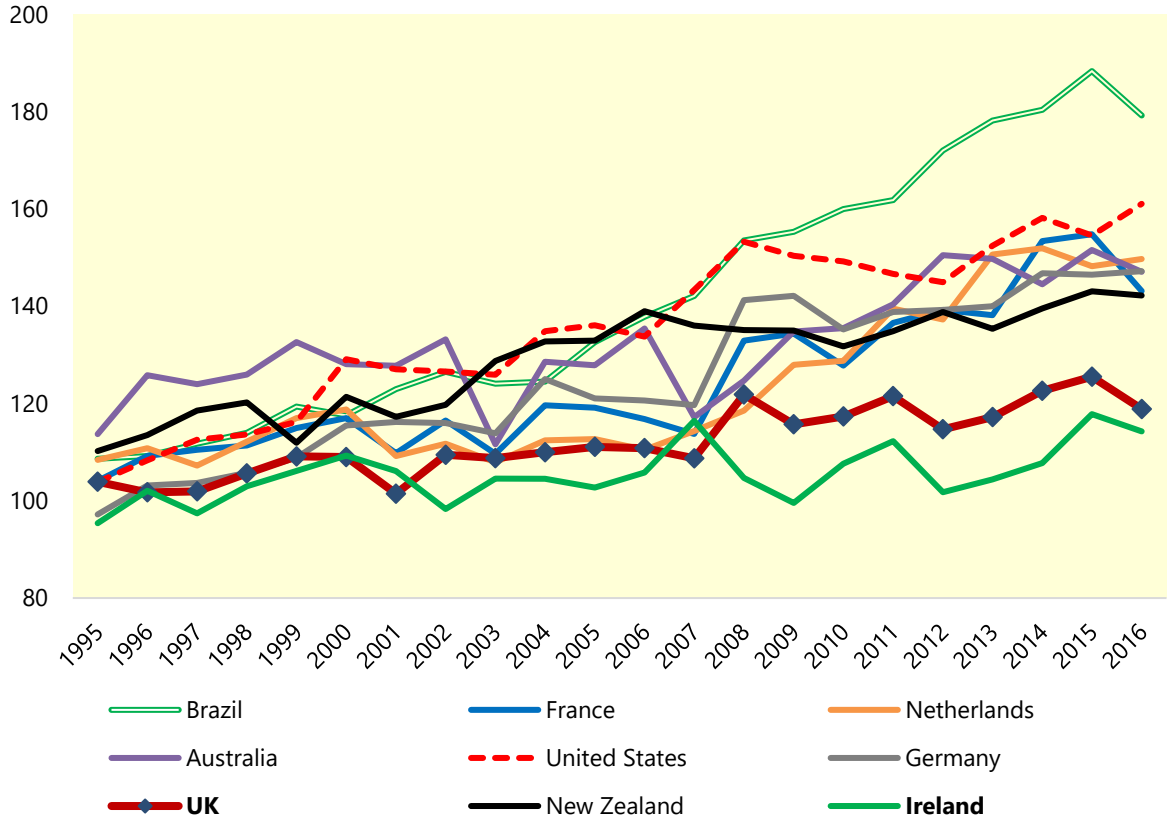
A number of interviewees acknowledged that the per hectare payments which farmers receive serves as a form of a resilience payment. However, this money is not always spent productively, particularly amongst farmers with significant off-farm income sources who were in danger of being subject to higher tax contributions. Furthermore, there was an acknowledgement that given the future direction of support in the UK being focused on the delivery of public money for public goods, that NI policy would need to reflect this. Particularly as the Treasury will ultimately be in charge of allocating the future agricultural policy budget and will focus on achieving greater value for taxpayers' money.

Whilst the UK Government's commitment to providing farming with the same level of support as present until the end of the Parliament (2024) was welcomed, there was an acceptance that farmers would need to use this time, and the payments they receive, to ensure that they are as competitive as possible as support is likely to be lower in the long-term.

In terms of productivity, the primary research input that decoupled direct payments have inhibited productivity in the UK and Ireland appears to be substantiated by the Total Factor Productivity (TFP) estimates from the USDA (see Figure 7-1). TFP is a measure used by economists to compare the volumes of outputs produced by farming with the volumes of input used. As it focuses on physical quantities rather than prices, it shows how good the sector is at turning inputs into produce and takes out the distorting effects of market price movements. TFP is not a perfect measure of productivity (it cannot identify if the right thing is being produced, just how efficiently it is being done). It should also be pointed out that TFP is based on an index compared to 1990 and that the USDA database goes back to the early 1960s. It is therefore only showing how productivity has changed in recent decades, not the absolute level of productivity. Despite these issues, it remains a useful benchmark of productivity.

Figure 7-1 also shows that Brazil is the standout performer. That said, it must be emphasised that it would have started out with a less developed farming industry back in 1961 when the TFP estimates were first compiled. Countries with less developed farming industries find it easier to increase gains than countries with relatively developed farming systems. It might be the case that the UK was far ahead in 1990 and other countries have simply been catching-up. However, this seems unlikely. Other impressive performances are shown by countries such as France and the Netherlands – nations much more like the UK and operating under a decoupled direct payments system. Interestingly, there appears to be relatively slow TFP growth in New Zealand and Ireland – nations often cited as great examples of a modern and efficient agricultural industries. However, for Ireland, the abolition of milk quotas in 2015 is likely to have bolstered performance in recent years, although there is limited evidence of this in the 2016 data.

Figure 7-1: Total Factor Productivity Selected Countries, 1995 to 2016

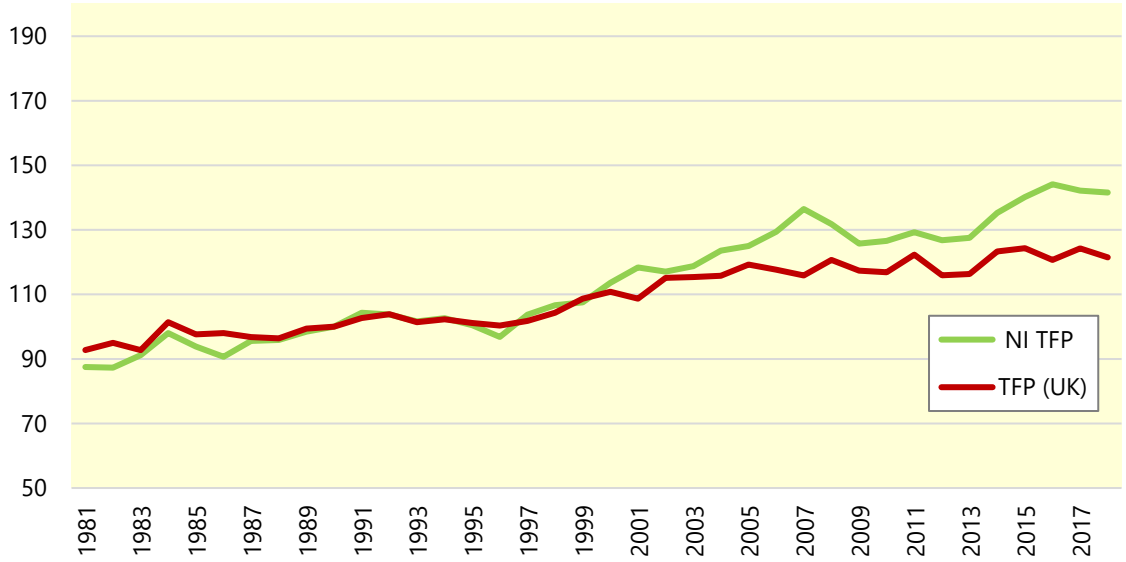


Source: USDA
Base: 1990 = 100

Additional TFP data are also published at a UK-level to 2018. Figure 7-2 compares Northern Ireland's total factor productivity against the UK generally using datasets from DAERA and Defra (base year 1990) which have been compiled slightly differently to the USDA dataset analysed above. The average TFP growth for the UK over the period shown is around 1.2% per year. However, over the last decade it has averaged less than 0.1% per annum. In the late 1970s and early 1980's UK farming's TFP grew strongly (by 2.4% per year between 1974 and 1984). This was largely driven by increases in output, whilst input use was static. TFP stayed relatively unchanged during the mid-80s to mid-90s. Another burst of growth occurred from 1996 onwards (annual average improvement of 2.6% between 1996 and 2006). This was due to a reduction in input use (whilst output remained relatively unaffected). Since the mid 2000's UK TFP has remained relatively unchanged with year to year variations because of weather changes.

Although Northern Ireland is ahead of the UK and appears to have been performing better in recent years, when compared with the data presented in Figure 7-1, it is still likely to be underperforming other countries.

Figure 7-2: NI and UK Total Factor Productivity (TFP) – 1981 to 2018



Sources: DAERA and Defra
Base Year (1990 = 100)

The analysis presented above shows that if decoupled direct payments are to continue to be a feature of NI agricultural policy then there is a strong need for them to be configured in a manner that promotes improved productivity. This is especially evident in the suckler beef and sheep sector, where incomes are lower (see Figure 4-2 above) and where significant performance gaps exist between the leading and poorer performing farms as evidenced by Table 7-2 for suckler cow enterprises. It shows that enterprise output varies by £250 per cow in Severely Disadvantaged Areas (SDAs) (£175 in Disadvantaged Areas) whilst differences in variable costs range from £105 to £142 per cow. As a result, gross margins vary by £300 to £350 per cow. Tackling such performance gaps are the key to raising the profitability of the sector generally and would go a long way towards securing its long-term viability.

Table 7-2: Suckler Cow Enterprises – Performance Comparison – 2017/18

Suckler Cows (Severely Disadvantaged Area (SDA)) £ per cow				Suckler Cows (Disadvantaged Area (DA)) £ per cow			
Parameter	**Excellent**	**Moderate**	**Poor**	**Parameter**	**Excellent**	**Moderate**	**Poor**
Output	614	410	364	Output	541	386	366
Variable Costs	236	258	341	Variable Costs	232	261	374
Gross Margin	**378**	**152**	**22**	**Gross Margin**	**308**	**125**	**-8**

Source: DAERA[113]

7.3.2 Public Money for Public Goods

What are Public Goods?

Public goods are a concept which emerged from economic literature and, according to the European Network for Rural Development[114], the term was originally coined to define "a range of goods, services and other matter of societal interest that are not delivered through the market (i.e. the normal interplay between supply and demand)". They have two other characteristics. Firstly, they are 'non-rival' meaning that one person's consumption of the good, does not reduce the benefit available to others from that public good. Secondly, it is 'non-excludable' insofar that if the good is available to one person, other people cannot be excluded from enjoying that good's benefits. In this context, environmental goods such as biodiversity and cultural landscapes feature most prominently.

As there is no clear means for individuals to pay for public goods, there is little incentive for potential producers or custodians of public goods to provide them. Therefore, public goods are under-supplied.

The provision of public goods are to the fore of the UK Government's framework for a future agricultural policy in England as set-out in the Agriculture Bill[51] covered in Section 6.1 above. Its focus is very much on the provision of environmental public goods such as;

- **Biodiversity** – thriving plants and wildlife
- **Climate change** – mitigation and adaptation
- **Water quality**
- **Natural hazards** – protecting and mitigating against flooding for example
- **Clean air**
- **Cultural landscapes** – beauty, heritage and engagement.

The provision of animal welfare and the upkeep of soil health are also a notable focus areas. However, the UK Government's definition of public goods is narrower than that used elsewhere (e.g. European Union[114]) which includes;

- **Rural vitality and connectivity** - long-term viability and attractiveness of rural areas as places to live, work and visit. In recent years, broadband connectivity has emerged as a key aspect of rural vitality. A report published in 2013[115] found that, for every £1 of Government money invested in Broadband, there was a £20 net economic return. This is an unusually high return on investment. The benefit mainly comes from the improvement in productivity of broadband-using firms which benefits wider society. However, there are also significant benefits from safeguarding employment in areas of Northern Ireland which would otherwise be at an unfair disadvantage, from productivity-enhancing time-savings for teleworkers, access to e-commerce, costs savings, and from increased participation in the labour force.

  Furthermore, Broadband is a 'general purpose technology' that is likely to have social and environmental impacts as well as economic effects, hence its inclusion here as a public good. Educational and government institutions can use high speed internet for scholastic and vocational training thus building a competent and competitive workforce. Medical providers require high-speed connections to supply telehealth which can immensely improve health care in rural areas. The simple fact of having connectivity makes many rural communities and individuals feel less isolated and more involved in the wider world.

- **Food security** – whilst acknowledging that food itself is a private good, markets do not ensure the availability of food at any time in any place, therefore necessitating deliberate action on ensuring security of supply. Recognition is also given to the value of retaining the capacity to produce food sustainably in the future through the maintenance of farming skills.

For this study, it was decided to adopt a more wide-ranging interpretation of public goods to consider food security (encompassing traceability), rural vitality and connectivity as well as the role of nature in supporting wider public health, which according to Natural England[116] is substantial, although not easily quantifiable.

Whilst there is a substantial amount of work taking place within Defra to develop its flagship Environmental Land Management (ELM) scheme to reward farmers for producing and protecting public goods, quantifying the net benefit of what are essentially non-market goods, is very challenging. That said, there are Natural Capital accounts[117] produced by the Office for National Statistics (ONS) which provide some useful UK-level insights. ***However, the estimates provided below need to be treated with extreme caution as the methodologies surrounding Natural Capital accounting are still in their early stages and are heavily reliant on some sweeping assumptions.***

How Public Goods are Valued in the UK?

Natural Capital refers to the stock of natural assets (e.g. soils, water, habitats, natural resources etc.) that a country has in its territory. At a UK-level, the partial value of Natural Capital assets have been valued at £950 billion in 2016[117]. However, as Table 7-3 below shows, these Natural Capital assets include materials (e.g. timber, fossil fuels etc.) which are more associated with private goods (i.e. the market can be used to attribute a value to them). That said, some of the natural resources underpinning these assets (e.g. forestry for timber) can be associated with the delivery of public goods which are sometimes referred to as 'Ecosystem Services' (i.e. the benefits that people derive from the natural environment (from Natural Capital). These could include the ability to take walks in the countryside or the carbon sequestration provided by commercial woodland.

There are three categories of Natural Capital;

1. **Provisioning Services:** relates to marketable products derived from Natural Capital (e.g. timber, water, fossil fuels etc.). *These are not considered to be public goods.*
2. **Regulating Services:** benefits derived from environmental processes that regulate the environment such as air quality, pollination and carbon sequestration. *These are public goods.*
3. **Cultural Services:** non-material benefits which people obtain from ecoystems. These include recreation, health and wellbeing etc. *Again, these are considered to be public goods.*

Table 7-3: Estimates of the Value of Natural Capital in the UK

	Asset Value (£M)		Percentage change	
	2016	2017	2016-2017	2009-2016
Provisioning Services (Non-Public Goods)	**319,552**			
Agricultural biomass	118,426	128,292	8%	38%
Fish capture	7,584	-		
Fossil fuels	95,285	59,358	-38%	-53%
Minerals	5,483	6,408	17%	82%
Timber	8,517	8,962	5%	72%
Water abstraction	76,370	74,741	-2%	25%
Renewables generation	7,887	9,501	20%	133%
Regulating Services (Public Goods)	**158,497**			
Carbon sequestration	103,947	105,602	2%	12%
Air pollutant removal	43,152	43,447	1%	0%
Urban cooling*	11,398	13,302	17%	0%
Noise mitigation*	-	832		0%
Cultural Services (Public Goods)	**471,687**			
Recreation	393,707	347,592	-12%	0%
Aesthetic (house prices)*	9,428	-		-16%
Recreation (house prices)*	68,552	-		23%
Natural Capital Total	**949,736**	**-**		**0%**
Of which Public Goods	**630,184**			

Source: ONS

Based on the information presented in Table 7-3, it is estimated that the public goods included within regulating services and cultural services have a combined asset value of nearly £630.2 billion. However, this number has to be treated with significant caution because as the ONS acknowledges, many of the services (e.g. carbon sequestration) are only partially valued. The data also omits the carbon that is released into the atmosphere (11.4 million tonnes) arising from converting grassland into cropland. This equates to a loss of £0.76 billion annually and a negative asset value of £71.5 billion. This could be seen as a hidden loss within food production.

7.3.2.1 The Value of Carbon Sequestration

The ONS also estimates that grassland delivered a net sequestration of CO_2 of 8.78 million tonnes in 2017. This was based on data from the National Atmospheric Emission Inventory (NAEI) which produce estimates and projections of carbon sequestration via the LULUCF emissions projections[118]. Its estimates for Northern Ireland suggest 1.18 million tonnes of CO_2 equivalent were sequestered in 2017 via grassland. DAERA estimates that Northern Ireland's grass and rough grazing area is 986,000 hectares.[119] This would imply a net CO_2 equivalent sequestration of 1.19 tonnes per hectare. Applying a non-traded carbon price of £67/tonne[120], this would suggest that the net sequestration taking place on Northern Irish grassland is valued at almost £80/ha. This would equate to 25% of the typical cattle and sheep LFA direct payments per hectare (£316) for BPS and Greening in 2017/18[121].

Evidence from the primary research undertaken during this study suggests that in Northern Ireland, carbon sequestration on grassland varies from 1.1 to 3.3 tonnes of CO_2 equivalent per hectare. Applying the non-traded carbon price from above, this would suggest a public good benefit of between £74 and £221 per hectare. Although there is very limited data on CO_2 sequestration on NI grassland and there were calls for a more comprehensive soil sampling programme (to 30cm depths) to get a more accurate picture, it was suggested that the average sequestration taking place could be approximately 2t of CO_2e per hectare. This would imply a public good benefit of £134 per hectare, which equates to around half of the average BPS payment rate on NI cattle and sheep farms.

It must be emphasised that although the ONS use the term 'net sequestration', when it comes to Natural Capital accounting, the emissions from the animals grazing on this land are **not included**. According to Exeter University[122] emissions from beef cows and their associated youngstock range from 3.63 to 7.20 tonnes of CO_2e per year per cow in the lowlands and 4.52 to 6.30 tonnes per year in the uplands. The reason the uplands performed worse was due to longer production cycles. For sheep, the Exeter University study estimated that CO_2e emissions per breeding ewe ranged from 0.53 to 0.74 tonnes in the lowlands and 0.43 to 0.54 tonnes/ewe in the uplands. This means that grassland sequestration, whilst noteworthy, only partially offsets the gross emissions from the animals grazing on land. That said, the omission of grassland sequestration when considering agricultural emissions is a significant oversight which must be rectified.

That said, a couple of points must be acknowledged. Firstly, there is no reason in principle why carbon sequestration offsets cannot be incorporated into the national inventory, subject to the overriding principles that they can be measured, verified and reported. It is not a problem with IPCC methodology, but a challenge for NI authorities to ensure that the impact of carbon sequestration can be accurately measured. Second, when setting reduction targets for Agriculture, it is important to note that carbon sequestration offsets will be recorded in the LULUCF sector, not Agriculture, so it may be useful to think in terms of a combined 'Agriculture and related land use' sector target as Scotland does when reporting its emissions[123].

Finally, it is worth mentioning that there is an ongoing debate around the metrics associated with measuring CO_2 emissions. NI organisations such as the LMC and the UFU have highlighted in a recent joint statement with other UK and NZ farming organisations the need for the IPCC to evaluate alternative metrics to the standard global warming potential (GWP) ones which take better account of the fact that methane is a short-lived gas in the atmosphere and therefore only sustained increases in methane emissions contribute to global warming[124]. However, as this statement highlights, even if a more accurate measure is some time away, urgent action, at farm-level, is needed now to address the climate change challenge. This includes conserving the carbon already in pastures and grasslands, and storing more carbon for the good of society.

7.3.2.2 The Value of Cultural Services

The other major area that the suckler beef and sheep sector potentially contributes to in terms of public goods is Cultural Services which includes recreation and the aesthetic and recreational value associated with house prices. Combined, the Cultural Services category is estimated to have an asset value of £471.7 billion in 2016. However, it is very difficult to break this figure down to show the contribution of the Northern Ireland beef and sheep sector towards this amount, without making some sweeping assumptions. If one assumes that this value is evenly distributed across the UK's land area (243,305 sq. km (or 24.33 million ha))[125], the resultant asset value of Cultural Services is estimated at £19,387 per

hectare. Applying this value to Northern Ireland's area (1.384 million hectares) would give an asset value of £26.84 billion. Finally, based on Northern Ireland's grassland area (986,000 hectares), this would give an asset value £19.12 billion. As beef and sheep farming accounts for a substantial proportion of Northern Ireland's grassland, this would suggest that it makes a major contribution to the overall cultural value of its landscapes.

Translating what this natural capital asset value would mean in terms of an annual payment to farmers is not straightforward and is potentially highly subjective. In the UK Civil Service, the Social Time Preference (Green Book) Rate[126] of 3.5% is used to capture the preference for value now from an asset, as opposed to being available later (i.e. it is an estimate of the opportunity cost of capital). If this rate were applied to NI grassland, it would imply a value of £669 million per annum. Whilst significantly larger than current support levels to NI farming (£333 million), it must be acknowledged that applying an opportunity cost of capital approach to a public good (natural capital) asset, is a very crude measure. That said, it does imply that the farming sector is delivering significant value in terms of public goods' provision vis-à-vis the support it receives.

Obviously, the above figures need to be treated with substantial caution, as some of the more scenic farm landscapes (e.g. Glens of Antrim.) are likely to have a larger recreational value than others. However, as with the carbon sequestration data above, there are significant negative externalities arising from beef and sheep production (e.g. nitrates run-off and ammonia pollution) which would have a negative impact on recreational value in some areas. If the pollution arising from these sources could be brought down to more sustainable levels, it would suggest that the beef and sheep sector could make a substantial contribution to public goods in Northern Ireland.

It is also noteworthy that the aesthetic value of the Northern Irish countryside supports the important tourism and hospitality industries. According to NISRA[127], the accommodation and food service contributed just over £1 billion to the NI economy, whilst arts, entertainment and recreation contributed an additional £487 million. Together, these two sectors represent 3.6% of the Northern Irish economy.

7.3.2.3 Public Goods Schemes in UK Agriculture

Although the new ELM scheme is being developed in England, its formulation is still in its early stages. Several industry experts commented during the primary research that it is very difficult at present to give precise indications of how the delivery of results-based public goods schemes could be valued. Instead, some counselled that it might be more appropriate to use an enhanced version of the Countryside Stewardship scheme which is in place in England as a basis for evaluating this policy tool. At the same time, this method could also be used to quantify the value of an enhanced agri-environmental scheme if applied to Northern Ireland.

For this study, the Countryside Stewardship Mid-Tier Wildlife Offers scheme is assessed, specifically, the Lowland Grazing Offer[128]. This is a simplified version of other Countryside Stewardship schemes which were previously in operation[129] and seeks to provide the following benefits;

- a range of options so that farmers can choose those most relevant to each farm business and local priorities
- improved nectar sources for insect pollinators and foraging for birds
- additional winter-food sources for seed-eating birds
- improved habitats and other resources for a range of species including insects, amphibians and small mammals.

Payments are provided over a 5-year period and the amounts depend on the options chosen. For the purposes of this study, it was decided to apply a 50% premium on the options chosen below to reflect what a policy framework centred on an enhanced public money for public goods scheme might look like. An overview of the options is provided in Table 7-4. It was also decided to use Andersons' Meadow Farm Model as a practical example of how the scheme could be applied.

Table 7-4: Countryside Stewardship Mid-Tier – Wildlife Offer – Options & NI Application

Option	Option Title	CS Payment Rate	NI Assumed Payment Rate (+50%)
Category 1: Nectar and pollen sources for insect pollinators and insect-rich foraging for birds (minimum 2ha per 100ha of farmed land included in the agreement, no maximum)			
GS2	Permanent grassland with very low inputs (outside SDA)	£95.00 (per ha)	£142.50 (per ha)*
GS4	Legume and herb-rich swards	£309.00 (per ha)	£463.50 (per ha)
Category 2: Nesting and shelter for insect pollinators and birds (minimum 500m of BE3 or 1ha of GS1 per 100ha farmed land included in the agreement, no maximum)			
BE3	Management of Hedgerows	£8.00/100m	£12/100m*
GS1	Take field corners out of production (outside SDA)	£365.00	£547.50
Category 3: Optional additional resources & habitats (no minimum or maximum, apart from individual option requirements)			
GS3	Ryegrass seed-set as winter/spring food for birds	£331.00	£496.50
GS17	Lenient grazing supplement	£44.00	£66.00
HS1	Maintenance of weatherproof traditional farm buildings	£3.25/m^2	£4.88/m^2
HS5	Management of historic and archaeological features on grassland	£30.00	£45.00
SW2	4m – 6m buffer strip on intensive grassland	£170.00	£255.00
WD7	Management of successional areas and scrub	£74.00	£111.00
WT1	Buffering in-field ponds and ditches in improved grassland	£201	

Source: Defra, Rural Payments Agency and The Andersons Centre

* Options to be availed of by NI Meadow Farm.

Andersons' Meadow Farm' is a notional beef and sheep farm in Northern Ireland. It consists of 60Ha (148 acres) of grassland, and all livestock feed is purchased. There is a 27 cow suckler herd with all progeny finished, a small dairy bull beef enterprise and a 200 ewe breeding flock. It is largely a family farm using family labour with a small amount of casual labour.

It was decided to put the entire farm area (60 ha) into the low inputs grassland scheme (GS2) and the hedges surrounding this land (6,000 metres) would be put forward under the management of hedgerows option BE3. With these changes in place Table 7-5 summarises the impact of applying both the standard Countryside Stewardship Lowland Grazing Wildlife offer as well as the assumed NI application (with a 50% payments increase). The results are compared on a per hectare basis with the existing BPS and agri-environment schemes that the farm currently utilises.

Table 7-5: Payment Rates Comparison – Agri-Env / Public Goods Schemes versus CAP Payments

		Agri Env / Public Goods		CAP Payments	
Option	**Option Title**	**CS Payment Rate (£/ha)**	**NI Assumed Payment Rate (+50%) (£/ha)**	**Scheme (2018/19)**	**£/ha**
GS2	Permanent grassland with very low inputs (outside SDA)	£95.00	£142.50	BPS	£271.33
BE3	Management of Hedgerows	£16.00	£24.00	Ag. Env (EFS)	£44.00
Total	**Schemes Claimed**	**£111.00**	**£166.50**		**£315.73**

Source: The Andersons Centre

Looking purely at the support levels, the results illustrate that the potential payments under a public goods scheme would be significantly lower than existing CAP payments, even with a 50% increase on the standard Countryside Stewardship payment, the support payments that this farm would receive have nearly halved. This would mean that the farmer would have to subscribe to additional payment options such as Ryegrass seed-set which are likely to erode the productive performance of the farm.

The methods used to date to quantify the value of public goods in monetary terms have significant weaknesses as they are often based on arbitrary assumptions which can have a major influence on the results. Furthermore, for the likes of carbon sequestration, there is widespread disagreement amongst the scientific community about how much CO_2 farmland sequesters, as there is also evidence of a wide variation at farm level. In the UK, it is arguable that there are aspects of public goods provision (e.g. security of food supply and traceability) which are not considered by Westminster to constitute public goods, but are considered as such elsewhere. Finally, there is evidence that policy-makers still have great difficulty in putting forward a payments scheme based solely on results. Even the ELM scheme in England has moved from focusing on "outcomes" to "outputs" and could well revert back to "actions" at the farm level in consideration of eligibility for support.

Overall, whilst the concept of a payments system based on public goods has merit and will no doubt be explored further across the UK in the coming years, there remains several shortcomings which need to be overcome before it could be considered as the core component of agricultural policy in Northern Ireland.

7.3.3 Coupled Payments – Headage-Based

During the primary research, several participants cited the reintroduction of headage payments as a potential means to support livestock population numbers in Northern Ireland. In the UK, the Scottish Suckler Beef Support Scheme (SSBSS) provides a payment of £99 for each beef calf bred from a suckler cow.

As outlined in Section 6.2.2, Ireland has recently introduced various headage-based supports including a Beef Environmental Efficiency Pilot (BEEP)[130] (€40 for each registered calf) for successful submissions of data which is designed to support suckler farming. A Beef Emergency Aid Measure (BEAM) opened on a once-off basis in 2019 provided an additional payment of €40 per suckler cow and €100 for each prime animal slaughtered. For this scheme, applicants must be participating in the Bord Bia Quality Assurance Scheme, and commit to reducing "the level of bovine livestock manure nitrogen per farm by 5%"[131]. There is also a Sheep Welfare scheme[132] in Ireland which offers payments of €10 per ewe to support improved welfare standards.

In the past, headage schemes were heavily criticised because they resulted in poor quality livestock being produced and as the payments are viewed as potentially trade distorting, they have been subject to WTO limits in recent decades. Post Brexit, the UK and Northern Ireland will still be subject to these limits and based on the schemes being deployed in Scotland and Ireland, they are very much supplementary as opposed to being to core means to deliver support to farmers. What is also apparent in Ireland is that the focus of its new schemes are on improving efficiency, quality, sustainability and animal welfare.

For Northern Ireland, it would appear that a top-up headage payments scheme that could help to deliver policy objectives around productivity, sustainability and quality would merit further consideration. However, the focus needs to be on delivering genuine value gains. For instance, calves born with the genetic potential to achieve significantly lower emissions levels might be an avenue worth exploring. This could consist of a £75/head payment for each calf born to a suckler cow which can achieve 20% lower methane emissions over its lifetime than standard beef cattle.

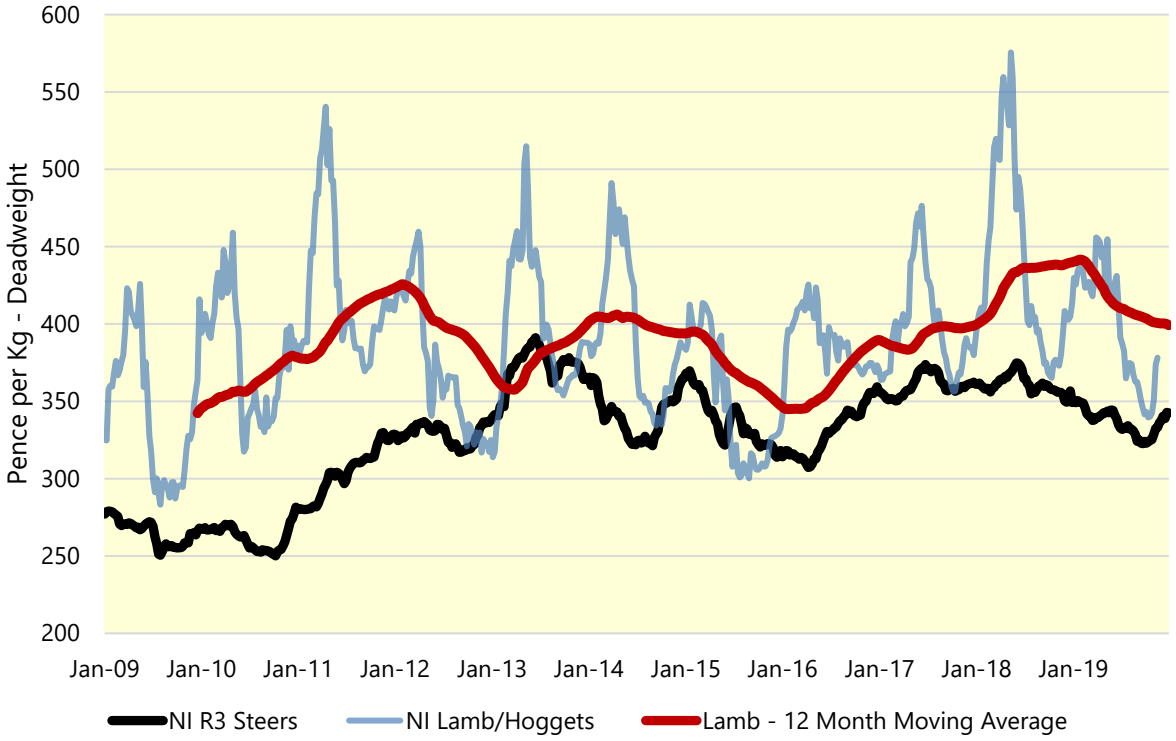
Whilst it is envisaged that all farmers in receipt of support payments will be Farm Quality Assured (FQA), Lifetime Quality Assurance is another area which merits further attention as it appears that in the long-term, this is going to become the standard demand of retail customers. Policies which support the participation in FQA schemes by NI farmers would be very helpful in upholding NI's strong quality assurance standards, considered to be a major strength, and could serve as the basis for Lifetime Quality Assurance in the longer-term.

7.3.4 Coupled Payments – Deficiency-Based

As illustrated in Figure 7-3, volatility has been a significant challenge in the beef and sheep sector. Admittedly, lamb prices are highly seasonal and a 12-month moving average price has been added to take account of this. However, as these sectors struggle to be profitable, any price swings can have a major impact, particularly given the long duration of the production cycles involved. For beef (using R3 steers as a proxy), prices in January 2016 were 80ppkg lower than January 2013. This makes long-term planning especially difficult because it is not possible to know with any degree of certainty what prices would be 2-3 years into the future. Whereas for milk and poultry for instance, the production cycles are

significantly shorter and contractual arrangements are much more frequent. Such options tend not to be available for beef and sheep.

Figure 7-3: Deadweight Beef and Lamb Prices 2009 - 2019



Sources: LMC and The Andersons Centre

Given these long production cycles, limited scope for contractual arrangements and the poor profitability of the sector in general, several interviewees believed that some form of price-based resiliency payment was required. Some believed that a form of deficiency payments could have a role in a future support framework to support farmers during periods of low prices as was the case in the UK before 1973. That said, there are advantages and disadvantages associated with a deficiency payments scheme. These are summarised in Table 7-6 and any future application in Northern Ireland would need to mitigate the disadvantages, if it were to gain traction as a viable policy tool. Several of these disadvantages were acknowledged by interviewees, particularly the WTO limits and EU rules.

Table 7-6: Deficiency Payments – Advantages and Disadvantages

Advantages	Disadvantages
1. Strong protection against price volatility. 2. Greater certainty for farmers when planning. 3. Generally transparent and easy to apply. 4. Consumers can avail of lower market prices. 5. No support when prices are high, thus saving the Exchequer. 6. Tends to be supported by farmers as they perceive they are getting better prices.	1. Subject to WTO limitations* and EU State Aid rules (limited to 13% of agricultural support) 2. Potentially cushions unproductive farmers. 3. If poorly formulated, does not reward quality. 4. Potential for over-supply as farmers could be less market oriented. 5. Perception that it helps to subsidise processors and retailers. 6. Difficult to budget for given variability in support. 7. Becomes more costly if market becomes more open to world prices.

Source: The Andersons Centre

* WTO limits for product-specific support are normally set at 5% of the value of output for a specific product (i.e. beef or sheep meat)[133], but under WTO rules arising from the Uruguay Round, the UK is to have its own ceiling (estimated at circa €5.9 billion[134]) which arises out of the old EU ceiling. NI would have its share of the UK ceiling.

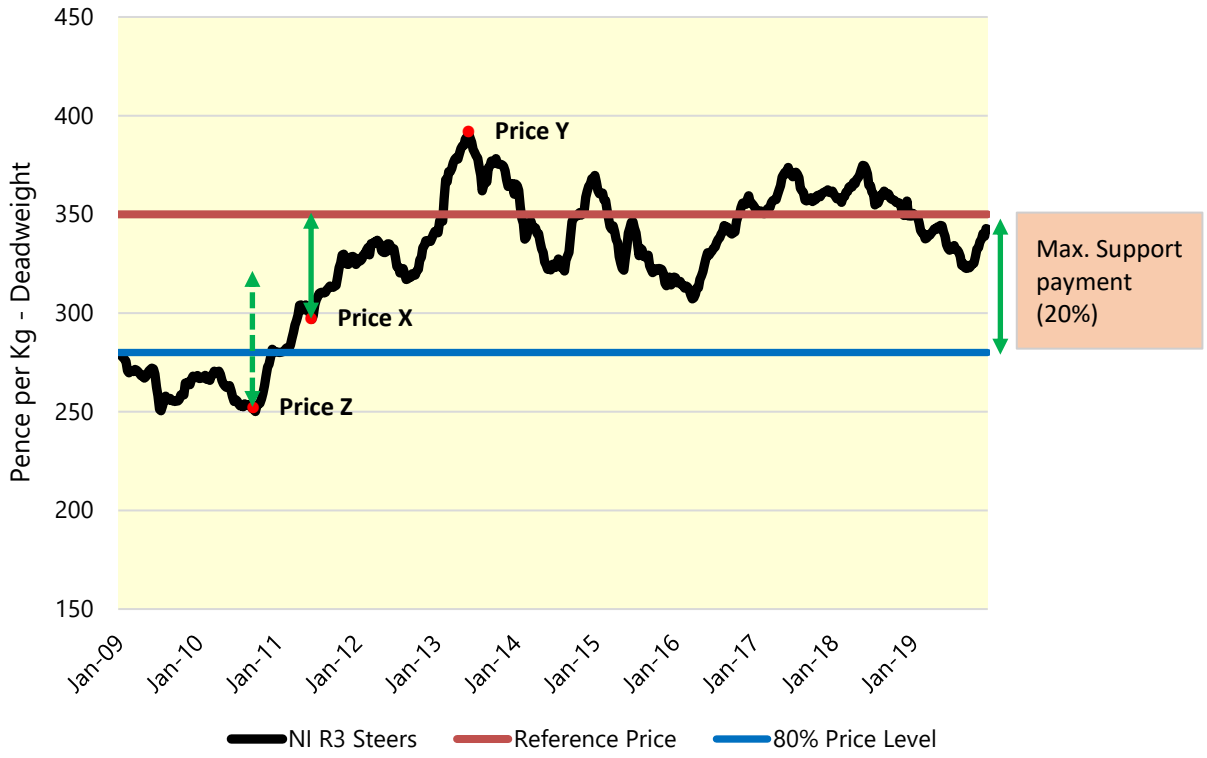
To test the suitability of such a framework in Northern Ireland, an adaptation of a UK-wide payment mechanism put forward by ABP[135] in its response to the 2018 DAERA consultation was used but applied to a Northern Irish context.

This would involve providing a *volatility support* payment on a per finished prime animal basis (steers, heifers and young bulls) when market prices go under a certain reference (target) price. This reference price would be set at a level that would consider farmers' production cost base, historical prices as well as the quality of prime meat produced. The payment would not be provided for cows or adult bulls as the focus would be on rewarding quality.

Figure 7-4 illustrates how the scheme would work using R3 steer prices as a proxy for all prime cattle. The R3 steer price since January 2009 is again shown and the reference price in this example is set at 350ppkg. The 80% price level (i.e. 280ppkg which represents 80% of the reference price) is also illustrated as this represents the limit of the volatility support which could be provided to farmers.

If market prices go below the reference price (e.g. Price X), then the volatility support would be triggered and would be provided to farmers to supplement their incomes up to the approximate level of the reference price. If prices go above the reference price (e.g. to Price Y), then farmers would not receive any volatility support, but would continue to receive other support payments which may be available. However, if market prices drop below the 80% price level (e.g. to Price Z), then the maximum volatility support payment that a farmer would receive would be 70ppkg and in these circumstances, this would be insufficient to return them to the target price.

Figure 7-4: Volatility Support Applied to the NI Beef Sector Based on R3 Steer Prices



Sources: ABP, LMC and The Andersons Centre

Such a system, it is argued, would permit consumers to benefit from lower prices when the market is at such levels (e.g. Prices X and Z) and farmers would be compensated via a volatility support payment to a certain limit. By setting a volatility support limit, farmers would need to continue to adhere to market signals and to curtail supply during periods of very low prices (i.e. at Price Z). Conversely, at higher prices, farmers would not receive any volatility support (but would still continue to receive other support payments that they may be eligible for).

Based on the illustrative price levels shown, the volatility support would have been triggered on a few occasions since 2013 but would have been applied frequently before then. During the very low prices experienced during 2009 to 2011, the volatility support would have been insufficient to return farmers to the reference price levels. The reference price could be reviewed periodically (e.g. every 5 years) and could also consider global supply and demand trends as well as competitive performance issues.

As the amount of support provided would vary significantly; a volatility reserve would need to be budgeted each year to finance volatility support. In some years, all of this support would be used, whilst in others hardly any support would be required. During periods when little support is needed, there would be additional funding which could potentially be used elsewhere.

Based on the NI slaughtering statistics from the LMC in conjunction with the weekly pricing data for R3 steers which are assumed as a proxy for all prime cattle slaughtered in NI, Table 7-7 sets-out the estimated cost of volatility support payments during 2009 to 2018 period. These costs are also

compared to the estimated value of prime cattle output as well as all slaughtered cattle (with cows and adult bulls added).

The results show that over this 10-year period, volatility support payments to the sector would average at £43.9 million per annum. During periods of low prices, volatility support would be significantly higher as would have been the case during 2009 to 2011. However, the amount of support given would have been capped based on the 80% price level limit. Even with this limit, the amount of support provide would exceed both the WTO limit (>5% of farm output) and the EU rules (<13% of agricultural support) during the 2009 to 2011 period. Whilst the performance of this mechanism would be more favourable over the last 5 years, bearing in mind the aforementioned support limits, significant concerns would remain about its cost during a period of prolonged price slumps. Chapter 8 provides further comment on this issue.

Table 7-7: Volatility Support (VS) – Estimated Costs – 2009 to 2018

Year	Volatility Support (VS) (£M)	Prime Cattle Output (£M)	VS (% of Prime)	All Farm Output (£M)	VS (% of All Farm)	Direct Payments (£M)	VS (% of Direct Payments)
2009	131.2	498.0	26.3%	1,345.3	9.8%	336.0	39.1%
2010	141.4	524.1	27.0%	1,522.4	9.3%	330.1	42.8%
2011	89.0	560.7	15.9%	1,726.0	5.2%	320.5	27.8%
2012	25.2	380.9	6.6%	1,759.6	1.4%	294.6	8.6%
2013	1.3	424.3	0.3%	1,959.5	0.1%	314.3	0.4%
2014	11.6	374.4	3.1%	1,922.3	0.6%	292.5	4.0%
2015	16.4	368.6	4.4%	1,755.1	0.9%	284.7	5.7%
2016	22.9	362.2	6.3%	1,788.2	1.3%	306.0	7.5%
2017	-	413.0	0.0%	2,103.4	0.0%	313.7	0.0%
2018	-	418.0	0.0%	2,133.9	0.0%	300.8	0.0%
10-year Average	**43.9**	**432.4**	**10.2%**	**1,801.6**	**2.4%**	**309.3**	**14.2%**
5-year Average	**10.2**	**387.2**	**2.6%**	**1,940.6**	**0.5%**	**299.5**	**3.4%**

Sources: The Andersons Centre based on LMC and DAERA data

Finally, it is worth noting that a deficiency payment price in NI could attract live animals to be finished in Northern Ireland so there would need to be a stipulation that the payment would only be available to animals born in Northern Ireland.

7.3.5 Price-Based Insurance Schemes

During the primary research, varied opinions were put forward as to the extent to which insurance could feature as a policy mechanism to support the NI suckler beef and sheep sector. Whilst much of the desk-based research focused on the net income model used in Canada, industry experts in the UK and Ireland thought that these mechanisms were very complex and data hungry. Instead, there was a greater openness towards insurance schemes focusing on price which is the focus of this section. Table 7-8 summarises key advantages and disadvantages of price-based insurance policies.

Table 7-8: Price-Based Insurance Schemes – Advantages and Disadvantages

Advantages	Disadvantages
1. Protects against volatility and risk provided farmer takes adequate cover. 2. Offers some business certainty when planning. 3. For policy-makers, payments are only payable when prices are low. 4. Relatively low administrative costs (e.g. do not require inspection of individual farms). 5. Transparency – can be based on readily accessible price information. 6. Reinsurance possibilities – to spread the risk that one insurance provider might have if operating alone. This could also be Government supported.	1. Price-based insurance is not well established in the UK. Likely to require significant Government support to get started. 2. The complexity of some stakeholders in the NI suckler beef and sheep supply chains could make insuring them difficult. 3. Lack of a futures market in Europe/UK. Making it difficult to provide expected future price estimates. Long production cycles also seen as an inhibitor. 4. With a responsibility on farmers to take out policies, some might not insure resulting in an increased risk of financial ruin. 5. Perception that if farmers pay premiums and no payments are made, they could be losing out on support that they used to receive via direct payments. 6. Whilst pricing data are available, if a myriad of coverages are required, the data requirements could become onerous.

Source: The Andersons Centre

One of the more prevalent examples of a price-based insurance model is the Livestock Risk Protection (LRP) Scheme[136] operated in the US. This tool is primarily directed at feeder cattle (tends to be calves under 500lb, but could also mean heifers and steers over 500lb and not in a feedlot) and fed cattle (cattle from feedlots). It is used to insure against declining prices by offering beef producers a variety of coverage levels and insurance periods that correspond with the time that a farmer's market-weight cattle would normally be sold. Coverage prices range from 70 to 100 per cent of an expected ending value of the livestock[137]. At the end of the insurance period, if the actual ending value is below the coverage price, farmers may receive an indemnity payment for the difference between the coverage price and actual ending value. The actual ending values are based on weighted prices from USDA's Agricultural Marketing Service which are derived from futures prices[138]. Insurance is provided by approved private sector agents but the USDA provides reinsurance to underwrite the scheme.

Whilst the scheme varies slightly from State-to-State in terms of fee rates, most schemes are based on a coverage level, expressed as a percentage of an expected value. The cost of insurance is then based on a percentage of the coverage level that a farmer opts for. Unsurprisingly, the higher the cover level, the higher the fee rate. Table 7-9 illustrates an example of some cover options available for fed cattle. If a farmer opts for a 98.7% coverage level, the associated fee rate is 3.4%. But, if an 85.2% coverage level is chosen, its associated fee rate is 0.2%. It is also worth highlighting that the USDA part subsidises the fees that farmers pay. Previously, a subsidy equating to 13% of the cost was provided but in the past year, this has risen to 25-30% depending on the coverage level. The number of animals that a farmer can cover annually is limited to 6,000 head[138].

Table 7-9: USDA LRP Coverage Rates for Prime Steers & Heifers – Illinois Example[139]

Expected End Value (CWT)	Coverage Level (%)	Coverage Value (CWT)	Rate (%)	Cost per CWT ($)
$118.91	98.7%	$117.34	3.4%	$3.97
$118.91	95.3%	$113.34	1.9%	$2.20
$118.91	90.3%	$107.34	0.7%	$0.79
$118.91	85.2%	$101.34	0.2%	$0.25

Source: USDA

CWT = hundred weight (1 CWT = 50.8kg)

Using the US LRP as a template, Table 7-10 illustrates what the coverage rates of price-based insurance programme might look like when applied a Northern Irish context for finished cattle, based on a 350ppkg target price. Whilst the cost per kg is listed, this is the full amount and could be potentially subsidised by DAERA similar to what the USDA does. However, whilst the examples provided in Table 7-10 are taken directly from the US, for illustrative purposes, to be actuarially sound, the rate figure for NI should be based on the likelihood that actual (NI) market prices fall below the expected end value.

Table 7-10: Potential Price-Based Insurance Coverage Rates Applied to NI Prime Cattle

Expected End Value (ppkg)	Coverage Level (%)	Coverage Value (ppkg)	Rate (%)	Cost per kg (£)
350p	98.7%	346.50	3.4%	11.78p
350p	95.3%	333.55	1.9%	6.34p
350p	90.3%	316.05	0.7%	2.21p
350p	85.2%	298.20	0.2%	0.60p

Sources: The Andersons Centre based on USDA data.

Table 7-11 attempts to depict what the costs of a price-based insurance system would be if applied to Northern Ireland, based on an expected value (target price) of 350ppkg and coverage levels set at approximately 99%, 95% and 90%. In practice, the expected value would vary in accordance with futures prices and supply-and-demand factors from one period to the next. That said, the example presented in Table 7-11 gives a useful illustration.

During 2009 to 2011, when beef prices were low and supply volumes were high, the payouts would have been substantial, peaking at almost £169 million in 2010 for 99% coverage. Even with lower levels of coverage, the payouts would still have been considerable, equating to 27% of prime cattle output at 95% coverage and 13% of output at 90% coverage. The premia that farmers would have paid would have been significantly lower than the payouts, even at 99% coverage. During these periods, the Exchequer would need to fund significant transfers to industry. Admittedly, there would be potential to recoup some of these fees during periods of higher prices (e.g. 2017 and 2018), but the degree of variation in payments would still be a challenge.

In practice, one of the biggest impediments to insurance within the UK beef and sheep sector is the lack of a futures market to based expected values on. Whilst it is arguable that having a target price would help to address volatility, as with deficiency payments, it is also likely to create distortions in regions not covered by the insurance scheme (potentially the rest of the UK or the Republic of Ireland). An additional complication would be the complexities which exist in the NI suckler beef and sheep supply-chains as depicted in Figure 7-5. Applying a price-based insurance model in this context would be fraught with

difficulties and could potentially mean that multiple policies would need to be taken out by several stakeholders, thus raising the costs to the industry significantly. This would also make the data collection requirements needed to support an insurance scheme much more onerous.

Table 7-11: Overview of Price-Based Insurance Costs for Prime Cattle Across Northern Ireland

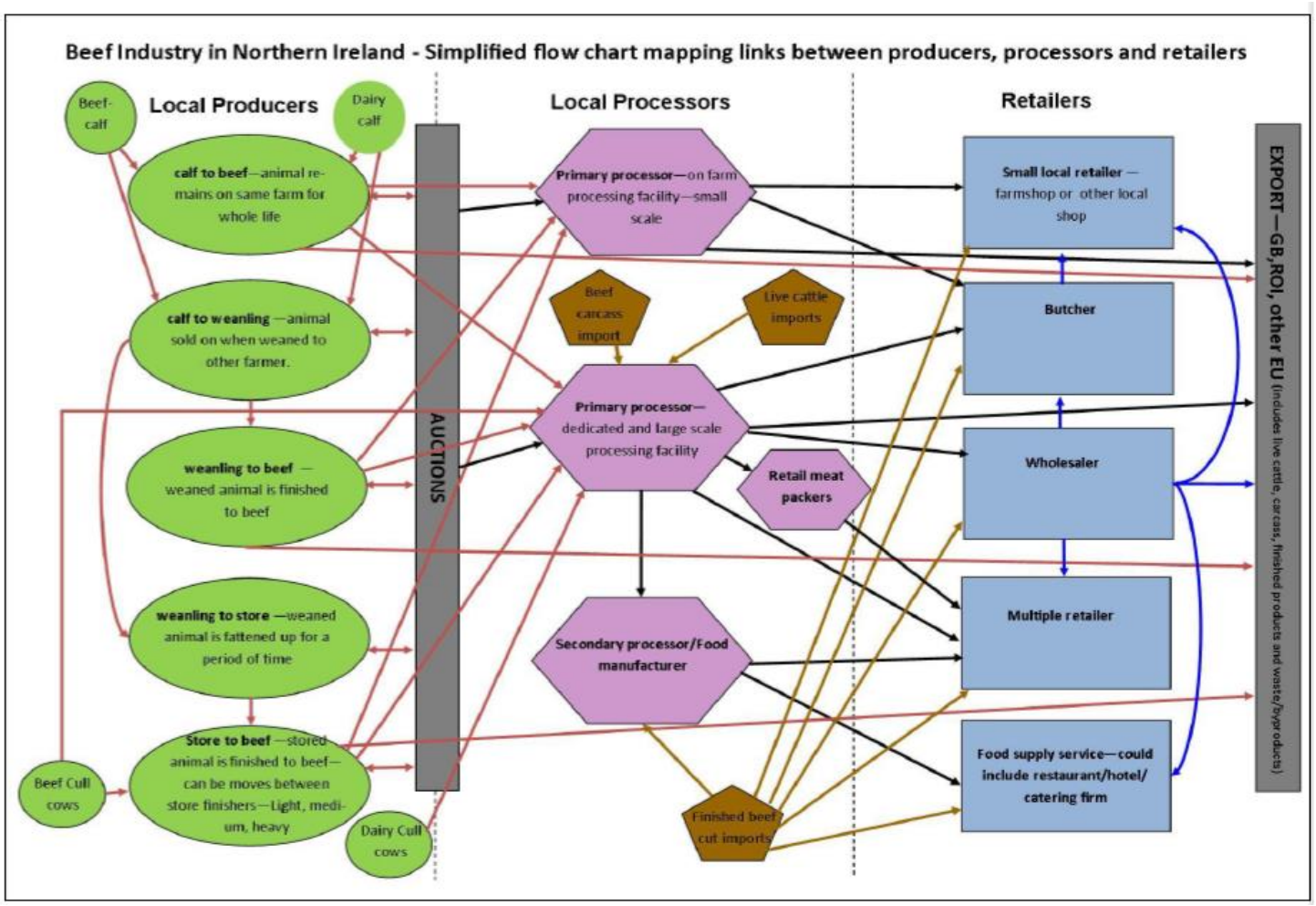
Year	Target Value	Actual Output Value	99% Coverage Level			95% Coverage			90% Coverage		
			Premia	Payout	%	Premia	Payout	%	Premia	Payout	%
2009	**656.1**	**498.0**	22.1	151.5	30%	11.9	127.2	26%	1.1	58.3	12%
2010	**699.9**	**524.1**	23.6	168.8	32%	12.7	142.9	27%	1.2	69.4	13%
2011	**649.7**	**560.7**	21.9	82.5	15%	11.8	58.5	10%	1.1	8.9	2%
2012	**406.1**	**380.9**	13.7	21.2	6%	7.4	6.8	2%	0.7	-	0%
2013	**400.9**	**424.3**	13.5	0.7	0%	7.3	-	0%	0.7	-	0%
2014	**383.5**	**374.4**	12.9	9.1	2%	6.9	2.9	1%	0.7	-	0%
2015	**318.6**	**368.6**	12.8	13.5	4%	6.9	5.2	1%	0.7	-	0%
2016	**384.4**	**362.2**	12.9	19.7	5%	7.0	9.9	3%	0.7	-	0%
2017	**401.7**	**413.0**	13.5	-	0%	7.3	-	0%	0.7	-	0%
2018	**405.6**	**418.0**	13.6	-	0%	7.3	-	0%	0.7	-	0%
Ave.	**476.9**	**432.4**	**16.1**	**46.7**	**11%**	**8.6**	**35.3**	**8%**	**0.8**	**13.7**	**3%**

Source: The Andersons Centre based on LMC data
Note: % refers to present of actual output value

It is also worth mentioning that the WTO limits cited above in connection with deficiency payments, are also applicable to insurance. If the government were to subsidise price-based insurance premium payments, all such payments would be considered trade-distorting and would be subject to the UK limit on trade-distorting support.

Taking the above factors into consideration, a price-based insurance system is not considered to be optimal in Northern Ireland at this time. That could change in the years ahead, if a robust futures market were to be developed for the beef and sheep sector. Some private insurance companies are already trying to address these issues in the UK (e.g. Stable[140]). Even then, it might only be appropriate in limited circumstances (e.g. farmers supplying cattle and sheep directly to processors.

Figure 7-5: Overview of the Linkages Between Producers, Processors and Retailers in the NI Beef Supply-Chain



Source: Northern Ireland Assembly Research and Information Service[141]

7.3.6 Other Agricultural Policy Support Measures

During this study, several other policy mechanisms were also mentioned. Due to resource constraints, it was not possible to assess the impact of these in detail. The policy mechanisms mentioned included;

- **Food Stamps Programmes:** such as those administered by the U.S. Department of Agriculture's (USDA) Food and Nutrition Service are designed primarily to increase the food purchasing power of eligible low-income households to the point where they can buy a nutritionally adequate low-cost diet[142]. In the US system, each household is expected to devote 30% of monthly cash income to food purchases, however if this is deemed insufficient to maintain an adequate low-cost diet for the household, food stamp benefits make up the difference. The USDA runs 15 such programmes[143] which target different segments of the population (e.g. the elderly). Although some interviewees thought that such a scheme would be a good way to assist those who currently need to use food banks whilst also shoring up domestic demand, many interviewees were unfamiliar with food stamp schemes. Some thought that if such a scheme were to be administered, it would need to be managed at a wider UK level as opposed to a devolved region like Northern Ireland. Accordingly, this mechanism was not pursued further during this study.
- **Income Tax Averaging Schemes:** although such schemes were touched upon in relation to Australia above (Section 6.3.3) and were also mentioned by DAERA as a possible future support mechanism in its 2018 consultation (Section 7.1.1), some concerns emerged over whether such schemes would be possible in Northern Ireland given the State Aid issues associated with the NI/IRL Protocol. That said, there have been examples in Ireland where income averaging schemes have been in operation for several years[144]. Last year its provisions were extended to enable farmers with off-farm sources of income to average their taxes[145]. Furthermore, a recent DG Competition decision[146] on a tax base reduction scheme in Germany was not deemed to contravene EU Competition Law.

  Schemes similar to those operated in the Republic of Ireland merit further consideration in a Northern Ireland context although this form of support is more relevant to tax law as opposed to agricultural policy per se. Taxation issues are discussed further in Chapter 8.
- **Farmer Savings Accounts / Volatility Reserve Funds:** during both the primary and desk research, the concept of a resilience funds for farmers was mentioned several times and the concept of introducing what would effectively be a savings account for farmers emerged. Each farmer would have their own account and funds could be tapped into in a period of sustained low prices. Each year, a percentage (e.g. 10%) of what were the BPS (+ Greening) payments would be put into a savings account which would be eligible for interest. The money could be lodged in the account (interest bearing) each year but income tax would be levied on this income stream only in the year that it was withdrawn from the account. The farmer would be free to draw out of the account at any time (and pay the income tax, including any tax due on the interest), but would also be free to "shelter" the money in there free of tax until the rainy day (when cash is needed and the tax bill might be low in any case).

  It is hoped that this would be a fairly easy to deal with from a tax perspective (only become taxable at the point of withdrawal) and would provide a means of building up a rainy day fund to deal with volatility. It would also remove the farmer's incentive to buy items that are not really needed when times are good in order to keep the tax bill down.

8. FUTURE POLICY PROPOSALS

8.1 INTRODUCTION

This Chapter sets out The Andersons Centre's proposed framework for a future agricultural policy in Northern Ireland, with a particular focus on the suckler beef and sheep sectors. The latter part of the Chapter provides perspectives on other policy areas which were deemed by research participants to have a significant impact on the competitive performance of suckler beef and sheep in Northern Ireland, noting that these areas were not a core focus of the study.

8.2 PROPOSED AGRICULTURAL POLICY FRAMEWORK

Considering all of the research input obtained over the course of this study, Figure 8-1 conceptualises the proposed future agricultural policy framework for Northern Ireland in the context of current agricultural policy. Under the CAP framework, agricultural and rural development policy were considered as separate pillars. In future, this need not be the case, a point that is reflected in Figure 8-1 which depicts spending across the entire NI agricultural sector, not just beef and sheep. Given the UK Government's commitments to keep funding for agricultural support at present levels until the end of this Parliament (late 2024), the policy framework is presented on the basis that support levels will remain the same as at present. However, the future budgets will need to be periodically reviewed to ensure that there will be a level playing field between support that NI farmers receive vis-à-vis their counterparts in the Republic of Ireland and elsewhere. The key components of the proposed policy framework are set-out below.

8.2.1 Environment and Productivity Support (EPS)

Strong evidence emerged on the need to focus on both productivity and environmental issues to help ensure that the suckler beef and sheep sector remains viable in the long-term. From the outset, research participants highlighted that addressing environmental sustainability and productivity challenges were not necessarily mutually exclusive and could be complementary if policy was formulated correctly.

It is, therefore, proposed to make EPS the core mechanism to deliver future support. This would continue to be an area-based payment, so that it could be applicable across all farm types in Northern Ireland. It would equate to about 70% of existing BPS (and Greening) payments. However, instead of having to adhere to wide-ranging, prescriptive and often inhibitive rules and procedures, the focus would be on meeting a limited number of key performance criteria that helps to drive the development of a productive and ultimately environmentally sustainable industry.

It is envisaged that farmers would be scored on five key performance indicators (KPIs) which would be set at an achievable level initially and would evolve over time as the industry's productive capacity improves. These KPIs would consist of four compulsory measures that a farmer would have to fulfil in order to receive full payment. There would also be three optional criteria and a farmer would have to achieve one of these in order to receive his/her full payments. These are depicted in Table 8-1 and summarised as follows;

Compulsory KPIs:

1. **Stocking rate levels:** the general consensus during the research was that support should be targeted at genuine active farmers, and that many farmers receiving BPS payments were not farming to anywhere near their holdings' productive capacity. All the while, other more productive farmers were missing out on the opportunity to expand due to limited land availability. This also impedes productivity. To redress this imbalance, it is proposed to adopt a minimum stocking rate requirement, which could also vary in accordance with the carrying capacity of the land (i.e. an uplands (SDA) farm could have a much lower target than and lowland farm on Grade 1 soils). To receive EPS payments, farmers would need to be farming at a stocking rate which is at or above their minimum target. Based on the research undertaken for this project the following minimum stocking rates are proposed;

    - **Lowland:** ≥1.3 LU/ha
    - **LFA pasture:** ≥0.7 LU/ha
    - **Upland/Rough grazing:** ≥0.2 LU/ha

    There may also be instances where special consideration is also given to designated land (e.g. Special Areas of Conservation (SACs)[147]. This may warrant somewhat different targets than those proposed above. However, it is believed that the proposed targets would serve as a useful guiding principle for most NI farms.

    Although a maximum stocking rate has not been proposed, farmers would need to respect the carrying capacity of farmland and adhere to environmental requirements such as limits on the application of organic nitrogen (N) fertilisers (or any applicable derogations) as a condition of receiving EPS.

    Admittedly, this might pose some difficulties at a WTO level, because it may be perceived as being linked to (or based on) production volume. Some might, therefore, believe it to be incompatible with the WTO "Green Box" definition of not distorting trade[148]. That said, in an era where there is increasing concern over the production capacity of agriculture to feed more than 9 billion people by 2050, surely, it is time for the WTO rules to be reviewed? Particularly as some believe that having higher stocking rates on grassland can also assist with carbon sequestration, with the proper grazing management systems in place (e.g. rotational grazing)[149]. Land which has the capacity to be used more productively, and sustainably, in terms of livestock production, should be achieving a minimum level of productive performance.

    However, if a minimum stocking rate requirement is viewed as being incompatible with WTO Green Box support, then the alternative would be to remove this KPI as a compulsory KPI. Instead, whilst EPS payments would be made to farmers who are operating at a stocking rate below the minimum capacity of the land, they would not have the opportunity to shelter the EPS payment for tax purposes (i.e. only pay tax at the point of withdrawal (see Section 8.2.1.1).

2. **GHG auditing and carbon sequestration:** this is clearly becoming a major focus area for the industry and steps must be taken on-farm to minimise GHG emissions. However, as the old adage states, the challenge must be measured before it can be effectively managed. Accordingly, under EPS is it envisaged that each farm would undertake a GHG audit within 1-2 years of the EPS being launched. Admittedly, most GHG auditing offerings focus on the 'gross emissions' from beef and

sheepmeat production with scant attention being paid to the potential of on-farm sequestration. It is acknowledged that the scientific methods to accurately quantify the extent of CO_2 sequestration taking place on-farm need further development. Initially, it is likely that GHG auditing would start at a basic level and any improvements in emissions would be measured against this.

That said, if GHG auditing takes place in conjunction with appropriate soil sampling (next point), then, whilst ambitious, it should be possible within a few years to accurately quantify CO_2 sequestration which is taking place on NI farms. Once baseline emissions levels are established, which consider both 'gross' and 'net' emissions (e.g. CO_2 sequestration), farmers would be expected to continually improve over time. Targets would be informed by robust technical research on what above-average farms should be achieving.

3. **Soil management:** a number of research contributors claimed that in Northern Ireland, over 90% of soils do not have the correct pH levels. This has major ramifications for productivity, inputs usage (e.g. fertiliser) and ultimately environmental performance. Whilst the potential of soils to sequester carbon was noted, it was felt that any sampling which does take place is limited, and with testing taking place to 15cm depths. In future, it was claimed that testing needs to take place to the 30cm level. This would enable a much more accurate estimation of the carbon sequestration which is taking place over time as well as the potentially vast stocks of carbon already stored in the soil, in addition to what management is needed to improve performance.

   Long term, some industry experts claim that soil sampling should take place on each hectare of land. This should be the aspiration for the industry but will take some time to achieve. Initially, it is proposed that farmers undertake soil samples for every 4ha of land that they farm given as it would be a good starting point. These samples could then take place every 4 years and any additional CO_2 which is sequestered could be subtracted from the farm's gross CO_2 emissions. The precise methodologies used to determine what depth of sampling is needed for each soil type will need to be decided by DAERA in conjunction with input from organisations such as AFBI. In some areas where soil cover is 15cm or less, then soil sampling regimes would need to take account of this. Over time, where soil sampling to 30cm depths can take place this should be encouraged, where economically feasible to do so.

   Robust soil sampling would also allow each farm to lower its CO_2 footprint significantly (vis-à-vis the gross emissions figures) and for the best performing farms, this could become a unique selling point for their produce in the longer-term.

   Nutrient Management Plan (NMP): the management of nitrates and phosphates emerged as significant issues. Whilst progress has been made in some areas, industry experts commented that much more needed to be done by NI farms to demonstrate that they are managing environmental issues effectively. This could be linked with undertaking soil mapping (which only has to be done every 4 years). The NMP would be informed by the soil mapping but would also encompass other areas such as run-off. It was also noted that some farms still have work to do in terms of establishing an effective nutrient management plan.

   Longer-term, the need for each farm to undertake LIDAR mapping was viewed as a priority by some. LIDAR mapping is one of the key means to identify areas of the farm where significant run-off is taking place. It was one of the key recommendations from the Sustainable Land

Management Strategy in 2017[41] and has resulted in pilots taking place. Current cost estimates are in the £8 to £10 per hectare range but are seen as a crucial means to identify run-off hotspots and to lower on-farm pollution levels. Farmers would not be asked to do this initially, but this could become a target once other tasks have been achieved.

4. **Calving (Lambing) Interval:** another criticism of the BPS system which emerged from the primary research was that some farmers do not bother breeding animals and instead keep a few cows or ewes on the land, at stocking rates well below its capacity, in order to receive support. In addition to being unproductive, the visual appearance of the landscape can become overgrown and impaired, it impedes food security of supply, inhibits land mobility, and therefore results in a diminution of public goods. Some experts also believe that grassland which is inefficiently farmed does not sequester as much CO_2 as well-managed grazing pastures. For all of these reasons, adopting targets for calving/lambing intervals is proposed. This could also be linked with achieving a minimum pregnancy rate on-farm. Better performance on these KPIs should also contribute to a more competitive financial performance if managed properly.

Optional KPIs

For the following KPIs, farmers would have the option of doing one out of three in order to receive full payment. Farmers would also be free to do all three as each can be helpful in achieving greater on-farm productivity and environmental performance.

5. **Evidence of continuing professional development (CPD):** several research participants called for knowledge transfer and innovation initiatives to be encouraged and that farmers should participate in CPD sessions to help improve their productivity, environmental performance as well as to encourage greater market orientation and understanding of consumers' needs. There are already examples of initiatives underway across Northern Ireland (e.g. Better Farm Beef Challenge[150]) and the UK (e.g. AHDB Better Returns Programme[151], Prince's Farm Resilience Programme[152]) which are helping to improve farm performance. Such programmes, and similar initiatives elsewhere (e.g. BASIS, Red Tractor training courses), should be approved to earn CPD credits so that duplication and bureaucracy (tick-box exercises) are minimised. Additional programmes could also be offered by both commercial companies and public bodies provided they meet the approval criteria and there is sufficient demand from farmers. Farmers would have the choice to participate in programmes which are most suited to their learning needs and EPS targets. There would also be an expectation that farmers show a demonstrable performance improvement as a result of their participation in CPD events.

6. **Farm Management Information System (FMIS):** to demonstrate that a given farm is achieving its targets and showing performance improvement, data management will be very important. Farmers need to be able to record and measure productivity performance seamlessly. A key enabler for this will be having a cloud-based Farm Management Information System (FMIS) in place. It is included as an optional KPI, as it is acknowledged that whilst having the potential to significantly enhance productivity, some farmers will not wish or have the capacity to use such tools. It must also be accepted that in order to efficiently utilise their FMIS, training will be required. Such training should be made available to all and would count towards a farmer's CPD if they firstly wanted to gather more information before purchasing an FMIS package. Where farmers do not have the requisite IT skills nor the desire to learn the basics of an FMIS, there may be options for farmers to get their advisers to manage these systems.

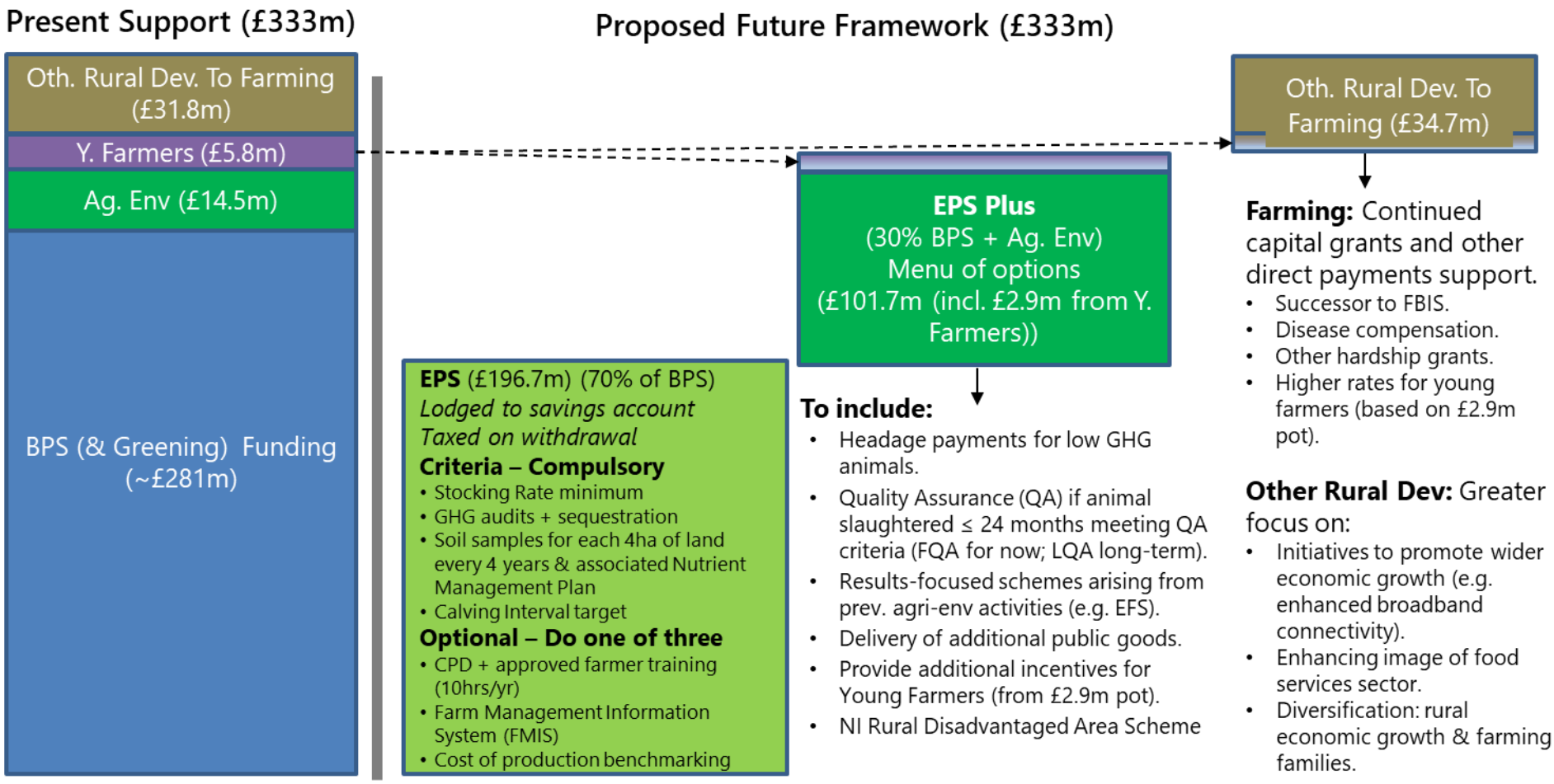
However, such arrangements would need to be funded by farmers. Where possible, the data recorded by an FMIS should dovetail with any auditing or inspections requirements that a farm would need, thus minimising the amount of effort needed to prepare for such events.

Prices for FMIS systems do vary depending on the functionality required and tend to start from just under £400 whilst others are close to £1,000 (for multiple enterprises). Some are relatively simplistic compliance tools which record veterinary and medicinal usage, links to Cattle Tracing Systems (CTS) for births, deaths and movement recording and is useful for farm businesses that just want to keep on the right side of inspection requirements.

More advanced FMIS packages add the ability to record and report on management information. For instance, farmers could record the service time, dates and sires used on-farm, then update to an accurate calving date if the cows are PD scanned. Once the calves are born anything that happens to the progeny can be traced back to dam and sire (e.g. weights, daily liveweight gain (DLWG), costing data, health problems etc.). Some packages also provide optional linkages to abattoirs' kill data so that the carcase information can then be reported on to complete the full circle allowing the farmer to make better-informed management decisions (e.g. which genetics best meet the required specifications). Similar systems are also available for sheep flocks and some FMIS packages cater for a range of livestock species and enterprises in the one subscription. There are also likely to be options to link FMIS with financial performance recording (e.g. profit and loss accounts) as well as developing budgets and the like.

7. **Cost of Production Benchmarking:** given that one of the key Desired Outcomes for the sector is to halve the performance gap in terms of production cost between the top-25% and the bottom-25% , it is proposed that by undertaking cost of production benchmarking at least once per annum using an approved methodology (e.g. used by CAFRE or similar to the approach used by the Farm Business Survey) would also be included as an optional KPI. Where possible, cost of production benchmarking activities undertaken by other organisations or discussion groups (e.g. affiliated with processors or retailers) would also be considered permissible provided the methodology used is sufficiently robust.

Figure 8-1: Proposed Future Agricultural Policy Framework



Source: The Andersons Centre

Table 8-1: Illustration of How EPS KPIs Could Work in Practice On-Farm (Lowland Example)

No.	Key Performance Indicators	Year 1 Target	*On-Farm Year 1 Performance*	Year 3 Target
Compulsory KPIs – Farmer must achieve all to receive full payment; otherwise incurs penalties				
1	Productive Stocking Rate①	≥1.3 LU/ha	*1.5 LU/Ha*	≥1.3 LU/ha
2	Greenhous Gas Audit②	Undertake audit to measure CO_2e / kgLW	*8.9 kg CO_2e / kgLW (Gross Emissions)*	8.0 kg CO_2e / kgLW (Gross Emissions)
3	Soil Management	Develop Nutrient Management Plan (NMP).	NMP in place; 25% of fields sampled (based on robust methodology) ③	Working NMP and on course to complete soil sampling in each 4ha parcel every 4 years
4	Ave. herd calving interval④	≤400 days	*384 days*	≤382 days
Optional KPIs – Do One of Three				
5	Farmer CPD⑤	Accrue 10 hours of CPD	*11 hrs*	10 hrs
6	Farm Management Information System (FMIS)	Have/acquire operational system	*All cattle recorded on FMIS*	All livestock recorded on FMIS
7	Cost of Production (CoP) Benchmarking	Do once per year using an approved methodology.	*Undertaken once per annum.*	Do once per year using an approved methodology.

Source: The Andersons Centre

Notes:

① To encourage improved productivity, stocking rates should be above a minimum performance target. This would vary according to the land capacity of farms i.e. uplands farms would have significantly lower stocking rate targets than lowland farms. That said, the author is mindful that there may be concerns about the compatibility of having a minimum stocking rate for EPS payments and achieving "Green Box" status at a WTO level. Therefore, whilst farmers may continue to receive EPS payments if they have not met the stocking rate KPI target (provided they are meeting other KPIs), a farmer would only be able to avail of having the payment taxed at the point of withdrawal, if they meet their minimum stocking rate target.

② Consideration would need to be given to how to make the audit/plans drive change, rather than simply being about producing a document. Future audits would need to show an improvement (e.g. reduce CO_2e by 0.3 kgLW/yr). For example, the Grassland Management Plan could be measured by a metric such as kg of meat from grazed grass. Work will firstly need to be undertaken to develop a robust GHG auditing system for NI farming.

③ Sampling depth would vary depending on soil conditions, based on input from DAERA/AFBI. In areas where soil cover does not go to 15cm, a soil sample based on the available depth of soil cover would be permitted. Over-time as infrastructure improves (and greater economies of scale achieved) it is envisaged that testing will be increasingly to 30cm depths where it is feasible to do so to capture full extent of carbon sequestration and storage in the soil.

④For small farms (e.g. <10 cows) as an outlier could significantly skew the overall average, a special allowance would need to be made. This could be based on an 'Olympic average' for example, where the highest and lowest numbers are omitted and an average is taken of the remainder.

⑤Attendance at all CPD events would be recorded using a smartphone-based system to automatically credit farmers' accounts. If this were not possible initially, then farmers would complete a short declaration when submitting their claim form for EPS payments. The focus of these events should be on improving performance (e.g. reduce production costs by 10% after 3 years).

Although several potential KPIs have been outlined above, it is not intended, at this juncture, to be prescriptive on the KPIs that should be used. Several industry participants counselled that policy-makers should consult widely with the industry and consumers (taxpayers) before proceeding. Additionally, previous research such as the work undertaken for the Sustainable Land Management Strategy as well

as technical research (e.g. from AFBI and CAFRE) should also be considered. Some of these studies contain very useful insights into what would drive productive and environmental performance at the farm-level.

All the while, the temptation to include numerous KPIs must be resisted. Instead, the most important KPIs that will deliver the greatest proportion of performance improvement (i.e. adopt the 80:20 rule) should be pursued. Once particular KPIs have been achieved, other measures could be introduced in the future as policy needs evolve.

The EPS payment rate would be based on 70% of the 2019 BPS and Greening entitlement rates in Northern Ireland as illustrated in Figure 8-1. Whilst it is acknowledged that Northern Ireland is still in the process of adopting a converged payment rate, some fine-tuning might be required for each individual farm. However, longer term, to make EPS as straightforward as possible, a converged average rate to apply across Northern Ireland is proposed. Section 8.4 illustrates what a future support scheme would look like in financial terms for Andersons' NI Meadow Farm when compared with the status quo.

It is also advised that use of existing datasets should be availed of where possible. Any application or claim forms should be pre-populated with existing data, which farmers or their advisers can then review and submit. It is wasteful having farmers re-key information which has already been submitted in the name of administrative convenience for the policy-making body. Improving productivity necessitates seeking efficiencies in all areas including farmers' interactions with regulatory bodies.

It must be highlighted that farm businesses would still need to comply with legal requirements around water quality, ammonia emissions etc. and that failure to comply with these regulations could result in the loss of agricultural support.

Finally, whilst the focus of this report is on the suckler beef and sheep sector, it is envisaged that other field-based farming sectors (e.g. dairying, arable etc.) could adopt a similar approach. Thus, making EPS a more comprehensive support mechanism across Northern Irish farming. This would obviously necessitate the formulation of KPI targets for each sector and for mixed farms, a combination of targets for each enterprise might be required. However, KPIs such as soil sampling and nutrient management planning would equally apply to these sectors.

8.2.1.1 Making EPS Payments

In formulating its proposals for future policy, the author was mindful that the primary research input showed strong support for direct payments as a means to support farmers' incomes (i.e. supporting resilience). This is partly why the proposed EPS was formulated as a successor to the BPS, but with improved productivity and environmental conditions attached.

However, it was also claimed that sometimes the money that farmers receive via BPS is not always spent productively. Particularly amongst farmers with significant off-farm income sources who were in danger of being subject to higher tax contributions. This is also an issue during times of relatively good prices. But, when there is a market slump, many farms do not have adequate reserves to address cashflow issues. Therefore, the need to have some form of resiliency mechanism which would constitute a rainy day fund for farmers was identified as being a key need. This was also a core concern of the 2018 DAERA consultation.

During this study, several potential mechanisms were considered to deliver greater resilience, particularly in the face of price volatility (see Section 7.3 above). Based on this evidence and considering the need to meet WTO requirements and EU State Aid limits, it is proposed to pay the EPS into a special interest-bearing savings account for each farmer.

Each year the EPS payments would be put into a savings account for each farmer which would be eligible for interest. The money would be lodged in the account annually but income tax would be levied on this income stream only in the year that it was withdrawn from the account. The farmer would be free to draw out of the account at any time (and pay the income tax, including any tax due on the interest). S/he would also be free to "shelter" the money in there free of tax until the rainy day (when cash is needed and the tax bill is likely to be lower in any case).

By managing the savings account (and EPS payments) in this way, it is envisaged that it should be fairly easy to deal with from a tax perspective (only become taxable at the point of withdrawal). It would provide a means of building up a rainy day fund to deal with volatility, and would remove the farmer's incentive to buy items which are not needed when times are good in order to minimise tax contributions. As outlined in Section 7.3.6, as there is a tax averaging scheme already operating in Ireland (and another approved to operate in Germany), this arrangement should not present any issues from a State Aid rules perspective.

Finally, this arrangement would chime well with 'nudge theory' which is designed to subtly encourage citizens to make more desirable choices (i.e. increase farmers' savings to cope with market slumps)[153].

8.2.2 EPS Plus Initiatives

To specifically address the scale of the challenges around the environment (but also underlying productivity issues), it is apparent that there are areas where some additional support is justified. However, unlike some previous support mechanisms which were often overly-prescriptive in terms of what a farmer needed to do to receive support (e.g. via agri-environment payments), there were calls for greater flexibility in the initiatives that farmers could undertake to avail of additional support. That said, there was recognition that such support needed to be directed towards delivering tangible results. Particularly in terms of the provision of public goods given the direction of travel in Westminster.

With these points in mind, an enhanced form of environment and productivity support (entitled 'EPS Plus') is proposed. Under this general programme, farmers would have scope to choose from a range of options. Potential schemes are briefly summarised below from a suckler beef and sheep perspective. Some would be location-specific (e.g. a top-up rural disadvantaged area payment) whilst others would be more widely available, provided certain criteria are met. EPS Plus would also include incentives to encourage land mobility and to promote quality thus helping to market NI produce domestically and internationally. Finally, it is proposed that the EPS Plus payments would only be made to farmers provided that their EPS targets are made (i.e. fulfilling EPS criteria is a general condition for EPS Plus payments).

A. Coupled Schemes to Promote Efficiency, Sustainability and Quality

The proposed schemes for cattle and sheep are explained below. For beef cattle, it is proposed that three coupled schemes be introduced with a focus on improving environmental performance and quality. These payments are termed Environment and Quality Assurance (EQA) payments and would be paid in stages as explained below.

- **Low Methane Beef Calves' Payment (EQA Stage 1):** this headage payment (£75/head) would be paid for each registered suckler calf (i.e. ¾ beef bred) provided that the farm is Farm Quality Assured (FQA) and that the calf's genetics have been approved to help lower expected methane emissions by ≥20% over its lifetime. To get such a scheme operational, a database of approved beef sires will need to be developed. Primary research feedback suggests that improvements of 20% are attainable and much of this will be associated with improved rumen function which should also help with feed conversion and time to slaughter. The proposed payment would be £75/registered calf which meets the criteria of achieving emissions reductions of ≥20% over its lifetime versus existing averages. **Estimated cost: £17.2 million** (based on 229,886 head).
- **Low Methane Dairy Calves' Payment (EQA Stage 1):** would be paid on beef sired calves born to a dairy dam on a headage basis (£25/head). Based on 2017-19 averages, it is estimated that 122,394 calves would meet this criteria. Whilst the focus of this study is on the suckler beef sector, it must be acknowledged that many suckler beef farms also have finishing enterprises using cattle drawn from the dairy herd. To promote improved productivity, sustainability and quality across the beef sector generally, this headage payment seeks to encourage dairy farmers improve their breeding practices when selecting beef bulls that will deliver lower lifetime emissions (≥ 20%) across dairy beef as well. This will also provide better quality cattle for finishing enterprises. **Projected Cost: £3.1 million.**

- **Quality Assurance Payment (EQA Stage 2):** quality was another major theme cited throughout the research and was a key feature of DAERA's 2018 consultation. Ultimately, for a business to be successful, it needs to produce in accordance with customers' needs. In essence, market orientation needs to be first and foremost in farmers' minds and there was plenty of anecdotal evidence during the research that this is not always the case. Some believe that farmers have a much greater interest in how grants and support mechanisms work but understanding what the consumers need or what is within specifications is further down the list of priorities. It is, therefore, proposed that in order to receive this payment (at £57/head), the animal needs to be Farm Quality Assured at slaughter with a slaughter age of 24 months or less (thus improving emissions). This scheme would not be available to finished Holsteins, Friesians, Guernsey steers etc. (circa 16% of kill). **Estimated Cost: £16.2 million (based on 284,210 head).**

  Linked with these, greater engagement in CPD events to better understand the market and consumers is highly important. There should also be an onus on retailers and processors to ensure that the needs of their consumers are understood by the farmers that supply them.

  In the years ahead, it is anticipated that there will be a greater focus on Lifetime Quality Assurance (LQA) as a means to deliver the most robust traceability possible. It would also help to tackle issues concerning lifetime emissions and health-related concerns. For instance, the beef and sheep sector is potentially in a strong position, relative to other meat-based proteins, in terms of anti-microbial resistance. In a future of greater personalisation when it comes to consumers' choices, having the data to prove that an

animal was reared in a certain way and had a minimal intake of anti-biotics will have value. LQA would underpin this and the industry needs to move in this direction long-term. In the meantime (i.e. in the first 24 months of the scheme being operational), all supported farmers should have an FQA designation. Thereafter, it would be expected that in order to receive this payment, the animal would need to have achieved LQA designation.

- **Sheep Welfare and Efficiency Payment (SWEP):** another headage payment targeted at improving the welfare of breeding ewes. Again, the promotion of low methane genetics, as well as other traits to improve growth rates and resistance to foot-rot, would be encouraged. The proposed payment would be £12 per breeding ewe, although a maximum payment per flock may need to be considered. **Estimated Cost: £11.5 million (based on 961,696 head).**

The rationale for proposing such schemes is that the suckler beef and sheep sector has particular challenges with tackling emissions. Establishing a national herd (flock) genetically pre-disposed to delivering lower emissions would represent an important step in tackling this problem in a balanced manner (i.e. considering other societal needs around security of supply, cultural landscapes etc.).

Taken together, these payments would equate to just over £48 million. This would represent 14.4% of the total support given to agriculture in Northern Ireland (£333 million) and around 2% of 2019 gross output for NI agriculture[154]. This would be within the bounds of EU limits for coupled support (~15% of agricultural support) and WTO limits (where Northern Ireland is anticipated to have a pro-rata share of the UK's ceiling of circa €5.9 billion)[134]. It would also leave almost £2 million which could be devoted to coupled support schemes in other NI farming sectors.

As with all support provided to NI suckler beef and sheep farmers, close attention needs to be paid to the support that farmers in the Republic of Ireland receive. This is because in comparison with other parts of the UK, NI farmers will be competing much more closely with farmers in IRL. Therefore, the support payments that NI farmers receive should be regularly reviewed so that they match what Irish farmers receive, thus levelling the playing field in terms of competitiveness.

B. Agri-Environment and Disadvantaged Area Payments

- **Environmental Farming Scheme (EFS) – Successor Programme:** the primary research identified the need to reward farmers that deliver more for the environment than what is provided for within standard direct payments schemes (e.g. targets within the EPS). In the early days of the EFS in Northern Ireland, some believed that the support provisions were properly costed. It is noted that in 2008, the old Environmentally Sensitive Areas scheme (now EFS) and the Countryside Management Scheme cost just over £26 million[155]. However, as years progressed, it was felt that farmers were not properly rewarded for what was delivered as some programmes were not properly costed. Under the constraints of the CAP which provided payments on the basis of income foregone or costs incurred, farmers were not properly rewarded and the environment suffered as a result.

In the future, NI will be free from such constraints and it is suggested that support should be focused on rewarding the additional value provided with respect to public goods, particularly in LFA and upland areas. This would allow the delivery of environmental enhancements to become profit centres (enterprises) in their own right. As alluded to elsewhere, greater funding would be required and it is intended that the diversion of funds (20%) from the old BPS to EPS Plus would support this. The provision of existing habitats or public goods should also be rewarded and should not solely focus on the creation of new habitats. In this context, Andersons is proposing funding in the region of £21.75 million for this scheme. This would represent a ~50% increase on the combined funding from the existing EFS (£2.9m), LFA Compensatory Allowance / ANC (£8.8m) and Countryside Management Scheme (non-capital) (2.8m), based on 2018 estimates.

Over time, these schemes could potentially focus more on rewarding results arising from the delivery of public goods once robust means to quantify the provision of such goods have been successfully established. In the meantime, such schemes will continue to require a degree of management actions to be undertaken to be eligible for support, but farmers should have as much flexibility as possible to deliver such enhancements.

- **Young Farmers:** For young farmers wishing to participate in an agri-environment scheme, it is proposed to use ~50% of existing Young Farmers' Payments (£2.9 million) as a means to provide a small top-up on EPS Plus payments on land in receipt of agri-environment (EFS) support, as set out in the previous point. This way, young farmers would be perceived as doing something more tangible in return for the additional support. (See Section 8.2.3 for additional details of support to young farmers).

- **NI Rural Disadvantaged Area Scheme (RDAS):** the substantial diminution of support under the Areas of Natural Constraints (ANC) scheme in recent years from £24 million in 2011 (when it was called LFA Compensatory Allowance) to under £9 million in 2018 was deemed to have a severe impact on the uplands cattle and sheep farms. Whilst increases in BPS payments in recent years, arising from the partial convergence under taken in NI, have compensated for some of this, industry stakeholders still believe that there is a significant shortfall in support that these farmers receive. Some opined that even at £24 million the amount of support provided was insufficient. That said, the need to provide an additional payment to farmers in disadvantaged areas in return for the delivery of enhanced public goods (e.g. improved visual landscapes etc.) has justification. Accordingly, it is proposed that a separate strand of funding be made available for the uplands. This figure requires further input from DAERA before finalising. However, it would come from the £101.7 million in funding allotted to EPS Plus.

C. Other Industry Initiatives

- **Land Mobility:** the lack of land mobility across Northern Ireland was highlighted several times. It is seen as a significant structural disadvantage, particularly when compared to competitors in the Republic of Ireland (IRL) where tax incentives have been introduced arising from a review undertaken in 2014[156]. The introduction of these tax incentives has resulted in a substantial increase in collaborative arrangements. The estimated proportion of Irish farmed area being let long-term (≥5years) has increased from 2% to 7% in recent years[157]. The ROI scheme applies the following tax relief to landowners over 40 who lease the land to individuals which are not connected with them;

- **Rentals of 15 years plus:** €40,000 exempt income per year.
- **10 to 15 years:** €30,000
- **7 to 10 years:** up to €22,500
- **5 to 7 years:** up to €18,000

If a similar scheme were to be implemented in Northern Ireland, it is anticipated there would be a similar increase in longer-term rental arrangements. The industry sees this as crucially important towards allowing more proactive farmers to expand and to permit farmers wishing to exit the industry a lucrative means to do so. Whilst an age limit (40+) could continue to apply to the lessor, at least initially, to gauge uptake, there would be no age limitations on the person taking on the land.

8.2.3 Other Rural Development Support

Here, the focus is primarily on the Rural Development support which is provided to NI farming. However, some of the research participants expressed the view that for Rural Development funding generally (i.e. including that which has not been spent on farming) there needs to be a greater focus for support to be directed towards initiatives that support the long-term growth of the rural economy. Point 4 below focuses on this specific point.

- **Capital Grants:** there were some calls for funding levels to increase, but others believed that at best funding levels would remain the same but could decrease over time unless a greater return (e.g. productivity improvement) was achieved. Bearing in mind the policy proposals presented above, these could be potentially be used as criteria to evaluate grant funding proposals.

  For several interviewees, the specifications and conditions placed on Farm Business Improvement Scheme (FBIS) grants were onerous with some going as far as to say that it would be less costly to carry out the works without the grants, particularly if time is factored into the equation. In relation to FBIS Tier 2, significant delays associated with planning issues as well as bureaucracy increased the prices in several cases. There were calls for a more streamlined and pragmatic approach to assessing and auditing applications, which for some people currently compare unfavourably to the requirements in the Republic of Ireland. The minimum spend requirements (£5,000) under FBIS Tier 1 created difficulties for smaller farmers to apply.

  With productivity being a priority for farmers in the years ahead, when improvement is sought, all aspects of farming operations need to be considered. This includes interactions with governmental bodies. The research indicates that such bodies also need to adopt a "productivity mindset" in ensuring that interactions with farmers are as efficient as possible. This requires a cultural change within some functions of public bodies.

- **Hardship and Disease Compensation:** there was limited input on these topics but the general views that were expressed showed continued support for the need to assist farmers during exceptional crises. Accordingly, funding for these policy mechanisms should be maintained.

- **Young Farmers:** as indicated in Figure 8-1 above, half of the funding previously allocated to young farmers (£2.9 million) is proposed to be diverted towards providing greater support for farmers under 40 when applying for grants. Chiefly, this means that younger farmers would receive a higher grant funding rate than the standard. This is seen as a more effective means to

support these farmers in boosting their productive performance. When combined with a top-up payment for younger farmers engaging in land mobility collaborations, it is intended that this additional support would help such farmers to get newly taken-on land up to its productive and environmental capacity as quickly as possible.

- **Broadband and 5G connectivity:** was identified as a key enabler of public goods (i.e. rural vitality and connectivity) in Section 7.3.2. The provision of broadband connectivity across the UK comes under the remit of the Department for Digital, Culture, Media and Sport (DCMS)[158]. It has a strategy for superfast broadband roll-out, but rural areas are often the last to be connected. This contributes to a greater digital-divide which undermines rural vitality. While DCMS funding plans under the Rural Gigabit Connectivity (RGC) for example should continue, there may be instances where some rural communities will still not receive adequate broadband connectivity. For instance, many broadband initiatives targeted towards 'rural communities' tend to focus on improving connectivity to the villages but isolated farmers still have poor connections. In such cases, applications for additional funding via Rural Development support, previously devoted to non-farming activities, should be considered due to the economic and societal benefits it would bring to more isolated areas. Here, it is also noteworthy that additional funding streams (e.g. £150 million promised to Northern Ireland under the DUP's Confidence and Supply arrangement with the Conservative Government[159]) should also be leveraged to significantly improve broadband connectivity in rural areas.

- **Diversification:** for some farms, even with a greater focus on productivity and payments for public goods as a means to bolster profitability, they still may not be sufficiently competitive and may require support to diversify into other enterprises. The promotion of rural enterprise should be a key component of future rural development policy. Accordingly, diversification initiatives which are deemed to have good return-on-investment (ROI) prospects should be a target area for Rural Development support. In some cases, having a viable alternative enterprise (e.g. farm shop or farm bistro) could complement the beef and sheep enterprise and add value to a farmer's output. Some of this funding may come from the UK Shared Prosperity Fund[160] announced in early 2020.

8.3 RESEARCH FEEDBACK ON OTHER POLICY AREAS

The brief for this project was to examine agricultural policy with regards to the suckler beef and sheep sector; however, concerns relating to several other policy areas emerged during the study. These are briefly outlined below and are areas which merit further investigation by policy-makers. Agricultural policy does not sit in isolation but instead forms part of a much wider framework which influences the viability of farming sectors. This is becoming even more crucial post-Brexit as the UK is fully in charge of its trade and migration policies.

- **Trade and market access:** numerous interviewees highlighted that future trading arrangements, both internally within the UK and externally with EU and non-EU partners, will have as significant of a bearing on the future viability of NI suckler beef and sheep farming as agricultural policy, if not more so. The chief concern of research participants is for continued unfettered access for NI produce on the GB market and that trade in both directions remains as close as possible to the status quo. There were also calls to ensure that NI produce should not be discriminated against in any way on the UK market as a result of being subject to the

NI-IRL Protocol. That said, uninhibited cross-border trade with Ireland and other EU Member States was also viewed as crucial.

Striking a balanced between unfettered access for GB↔NI↔IRL/EU trade on the one hand, and the UK's intention to have the right to diverge with the EU and strike FTAs of its own on the other, will be highly challenging. For sensitive agri-food products such as beef and lamb, some believe that having synchronised (fully aligned) standards between the UK and the EU would go a long way towards addressing this issue. There were also calls during the research for the UK's post-Brexit tariffs to be set at similar levels to the EU's CET, but as part of an independent UK trade policy, would help to maintain a level playing field.

Research feedback also identified funding shortages to participate in market access initiatives which involve other parts of the United Kingdom. This is a perceived disadvantage to Northern Ireland, particularly as the implementation of the NI-IRL Protocol is likely to leave Northern Ireland with a slightly different status to the rest of the UK. Getting market access is seen as crucial for processors who can then do the necessary marketing and promotion to gain traction in new markets. Whilst funding for these activities is separate to agricultural policy per se, additional Government funding should be provided where there is a demonstrably positive return on investment for such activities.

Some research participants also suggested that the levies that the LMC receives are significantly lower than in other parts of the UK and that this should also be reviewed. What is evident is that more marketing firepower is needed to support Northern Irish farmers, and the suckler beef and sheep sector specifically. Most perceive that this is best achieved through a wider British beef and lamb marketing initiative both at home and abroad as both markets are seen as crucial. This is especially important given the rise of alternative proteins and the challenge (and opportunity) for the UK to build a strong presence internationally, particularly in Asia.

- **Labour:** although the use of migrant labour is low (2% of paid employees) on NI grazing livestock farms[161], EU migrant labour represents 48% of the workforce in the NI beef and sheepmeat processing industry[162]. Having sufficient labour availability is therefore of crucial importance to the NI beef and sheep farming sector. Having a labour policy which permits continued access to migrant labour when required is a necessity for having a viable farming industry.

- **Tenancy Law:** the short-term nature of Conacre arrangements were identified as a major inhibitor to land mobility and tenants' willingness to invest in land to realise its productive capacity. Encouraging landowners to lease farmland on a long-term basis (5 years plus) was discussed in Section 8.2.2 above in the context of land mobility. In some cases, there are issues with landowners continuing to retain support payments whilst renting the land on a Conacre basis. Having a favourable tax regime which provides retiring farmers with an elegant means of exiting the industry whilst ensuring that they continue to have access to their farm dwellings and retain ultimate control of the land (e.g. once the tenancy is over or that there is a transparent and legally-enforceable disputes mechanism if things go wrong) would help to drive performance improvement across the sector generally.

- **Taxation:** this is closely linked with the previous point and the discussion on land mobility. Further consideration should also be given to the types of tax averaging schemes which are in

place in Ireland and permit farmers to average their tax payments over the previous five years of profit and losses[163]. As pointed out in Section 6.2.2 this programme has recently been expanded to encompass off-farm income. Given the scale of part-time farming in the NI beef and sheep sector such a scheme would help to address profit volatility issues in the sector.

- **Red Diesel Tax Treatment:** during the research concerns emerged that the Treasury was going to change the red diesel exemptions which offers a lower rate of duty to the agricultural sector. Some participants expressed concern that any significant increases in this tax rebate could have a severe negative impact on the agricultural sector, especially the suckler beef and sheep industry which, as shown above, has been struggling. Therefore, there were calls from some stakeholders that the UK Government ensures that such exemptions remain in place because otherwise the competitive position of NI farmers would be seriously eroded.

- **Value Added Tax (VAT) Rules:** several industry participants cited differences in how the Agricultural Flat Rate Schemes (AFRS) for VAT are applied in NI versus ROI as having significant impacts on the competitive position of NI farmers versus their peers in ROI. The consensus was that NI farmers compare unfavourably as there is a more generous recompense for ROI farmers versus their UK/NI counterparts. This is also partly because ROI farmers can claim for input VAT on capital expenditure whereas their NI counterparts cannot. Such differences create market distortions which also affect live animals' trade. Industry participants called for the NI rules to mirror those in ROI to help ensure a level playing-field within the all-island economy.

- **Divorce Law:** featured prominently in the primary research as a major reason why land is not transferred from one generation to the next. Older farmers fear that if their son/daughter gets divorced, then the farm could end up getting sold. This contributes to an older age profile of farmers but also prevents the next generation from taking over and, in many cases, performance is impeded. It was widely recognised that this issue is very sensitive to address. That said, research participants called for arrangements to be developed whereby a farm holding does not end up being split or sold entirely as a result of a divorce settlement. How to do this was beyond the scope of this study but it is clear that current divorce law is holding back intergenerational transfer and the competitive performance of the industry.
- **Planning:** is also seen as a major issue with some research participants claiming that the current system of designations, restrictions and permitted development stipulations are holding the sector back. It is an issue with both existing builds and the construction of new or replacement buildings. With most banks unwilling to lend without planning permission secured, a significant amount of money is often required upfront in order to comply with planning requirements, with no guarantee of success. There were calls for the planning system to be made fairer, more transparent and proportionate which allows some development to take place on farms.

8.4 EXAMPLE FARM-LEVEL IMPACT – ANDERSONS NI MEADOW FARM MODEL

Having set-out the various components of agricultural policy support, it is important to ascertain what this would mean for the support that a typical NI grazing livestock farm would receive. To illustrate this, Andersons NI Meadow Farm model has been deployed and Table 8-2 compares the estimated status quo for 2019/20 against the projected support under the proposed future support framework. The key assumptions underpinning these estimates are;

1. **EPS KPIs:** have been achieved for this farm. Notably, its stocking rate is just over 1.5 livestock units (LUs) per hectare, which is above the 1.3/LU/Ha minimum target. The farm therefore receives its full EPS entitlement into a special account (only taxable on withdrawal).
2. **EPS Plus payments:** Meadow Farm is eligible for the following payments;
    a. **EQA Stage 1 (Low Methane Beef Cattle):** calculations are based on a payment of £75/head on 14 registered calves, but an example of applying the payment on 25 calves is also shown.
    b. **EQA Stage 2 (Quality Assurance (FQA/LQA) Payment):** is paid on the basis that 21 finished cattle (12 steers and 9 heifers) have achieved this standard. Payment is £57/head for each finished prime animal (£1,197).
    c. **SWEP:** made on 200 ewes at £12/head.
    d. **Other agri-environment payments:** the old agri-environment payments for this farm (£2,664) continue at present levels but under the EPS Plus mechanism.

The results show that the support NI Meadow Farm receives under the new support regime would be very similar to the old CAP support framework. On the basis that 14 of the 25 suckler calves were deemed to be 'low methane', future support payments (£18,706) would equate to almost 99% of status quo levels. However, if 25 suckler calves registered were designated as low methane and agri-environment payments rose by 50%, then this farm's payments would be 8% (£1,525) higher than the status quo.

As depicted by Table 8-3 below NI Meadow Farm is heavily reliant on support payments. It makes a loss of £459 per hectare each year on production alone. Even with support payments (£316/Ha), the farm still has a deficit of £143/Ha (£8,600 per farm). Whilst drawings of £20,000 are included and the spouse's off-farm income keeps the household afloat, these performance levels are unsustainable.

Table 8-2: NI Meadow Farm – Comparison of Proposed Payments vs CAP Support (2019/20)

Current Support	£/Farm	Future Support	£/Farm
BPS	£16,278	**EPS**	£11,395
Agri-Environment and other support	£2,664	**EPS Plus**	£7,311
		of which:	
		EQA Stage 1 - Low Methane (14 calves)	£1,050
		EQA Stage 2 - FQA/LQA (21 cattle)	£1,197
		SWEP (200 ewes)	£2,400
		Agri Environment and other support	£2,664
Total	**£18,942**	**Total**	**£18,706**
		Difference vs Current	*-1.2%*
		Total *(if Low Methane payments on 25 calves) & Agri Env. rises by 50%*	**£20,467**
		Difference vs Current	+8%

Source: The Andersons Centre

Over time, with active participation in the EPS programmes, it is expected that this farm's performance should gradually improve. Participating in an FQA scheme which evolves into a Lifetime Quality Assurance is projected to bring about a price increase of around 2% for finished heifers and steers from the suckler enterprise. This equates to an overall output increase of 0.8% when applied across the farm. Furthermore, based on cost reductions of 5% and 10% respectively, Table 8-3 depicts how NI Meadow Farm could potentially perform after 3 years whilst assuming that Low Methane payments would be

payable on 25 calves. These calculations also assume a 2% increase on the status quo price for undertaking Lifetime Quality Assurance (LQA).

It is only when cost savings of around 10% are achieved that this farm begins to generate a profit, but support is crucial to achieving this. Admittedly, the 2019/20 livestock output estimates are based on relatively low prices (347p/kg for finished steers and heifers), as prices have often surpassed 350p/kg in the past. In order for this farm to secure its long-term viability it needs to find ways to achieve higher prices for its output. Currently, only 70% of the cattle that it sends for slaughter achieve an R grade or higher. So, clearly there is scope to increase this significantly. Attending CPD programmes under EPS as well as participation in FQA/LQA should help to achieve this. Suckler beef and sheep farms need to firstly focus on the actions that they can control at the farm level to boost performance, before seeking additional support from Government.

Table 8-3: NI Meadow Farm – Policy Impacts (£ per Hectare)

Parameter	19/20 (Est.)	Future Support (5% Lower Costs)	Future Support (10% Lower Costs)
Livestock Output	989	997	997
Livestock Variable Costs	474	451	427
Gross Margin	**515**	**546**	**570**
Overheads	601	571	541
Rent, Finance and Drawings	373	354	335
Margin from Production	(459)	(379)	(307)
Support	316	341	341
Business Surplus (Deficit)	**(143)**	**(38)**	**34**
Farm Surplus (Deficit) (£)	**(£8,603)**	**(£2,280)**	**£2,040**

Source: The Andersons Centre

8.5 FARM LEVEL IMPACT – LFA AND LOWLAND (DAERA DATA)

In addition to the Andersons NI Meadow Farm Model above, an analysis of the potential impact of the support received in 'typical' farms based on DAERA data was also undertaken. To this end, projected future support levels under the policy framework proposed in this report was compared with the status quo (2018/19) support based on the DAERA Farm Incomes in Northern Ireland report[164]. This analysis was based on the averages for both lowland and LFA cattle and sheep farms (i.e. Cattle and Sheep – All Sizes). For both Lowland (Table 8-4) and LFA cattle and sheep farms (Table 8-5), projected support under the future policy (EPS) framework was assessed under two scenarios.

The "Low" scenario estimates projected support with approximately half of the eligible calves and finished cattle availing of the coupled EPS Plus payments. In this scenario, agri-environment payments remain unchanged for Lowland but there is a 50% increase for LFA reflecting increased funding being made available as outlined in Section 8.2.2 above.

The "High" scenario estimates projected support with all eligible suckler calves and finished cattle sent to slaughter being registered for EPS Plus payments. The key assumptions underpinning the estimates are outlined under each Table. Agri-environment and other LFA payments increase by 75% for Lowland farms and by 100% for LFA farms.

The data presented in both Tables shows that the proposed policy framework will reward farmers that take action in terms of lowering emissions and boosting quality. Under the Low scenario, approximately half of the potential coupled payments are taken up and whilst there is some increase in agri-environment/LFA payments on LFA farms, it is below what is potentially available. Accordingly, in this scenario, these farms receive lower support estimated to decline by approximately 10-12%. In the High scenario, support rises slightly for these average farms. There is scope to increase this further via increased productivity as demonstrated in Table 8-2 above for Andersons' Meadow Farm.

Table 8-4: Lowland Farm (DAERA) – Proposed EPS Payments vs CAP Support (2018/19)

Farm Characteristics				
Size (Ha)			64.5	
No. Beef Cows			30	
No. Other Cattle			91	
No. Ewes			75	
Current		**Future**	**Low**	**High**
Support	**£/Farm**	**Support**	**£/Farm**	**£/Farm**
BPS	£20,375	**EPS**	£14,263	£14,263
Agri-Env/LFA	£248	**EPS Plus**	£4,645	£7,381
Other	£947	of which:		
		EQA Stage 1	£1,125	£2,250
		EQA Stage 2	£1,425	£2,850
		SWEP	£900	£900
		Agri-Env/LFA	£248	£434
		Other	£947	£947
Total	**£21,570**	**Total**	**£18,908**	**£21,644**
		Difference vs Current	***-12.3%***	***+0.3%***

Source: DAERA and The Andersons Centre

Assumptions:

1. **Number of Animals:** based on DAERA data but subject to rounding.
2. **EPS:** assumed to be 70% of current BPS payments (i.e. as at 2018/19)
3. **EQA Stage 1:** in Low scenario, payment is based on 15 calves. Under High scenario, payment is based on 30 calves.
4. **EQA Stage 2:** Low scenario payments made on 25 finished cattle. In High scenario, payments are made on 50 finished cattle.
5. **Agri-Env/LFA:** In Low scenario, support assumed to remain the same as Current. Under High scenario a 75% increase is envisaged.
6. **Other support:** remains the same under both scenarios.

Table 8-5: LFA Farm (DAERA) – Proposed EPS Payments vs CAP Support (2018/19)

Farm Characteristics				
Size (Ha)			94.6	
No. Beef Cows			30	
No. Other Cattle			56	
No. Ewes			138	
Current		**Future**	**Low**	**High**
Support	£/Farm	Support	£/Farm	£/Farm
BPS	£25,489	**EPS**	£17,842	£17,842
Agri-Environment/Other	£3,389	**EPS Plus**	£8,258	£11,299
		of which:		
		EQA Stage 1	£1,125	£2,250
		EQA Stage 2	£912	£1,653
		SWEP	£1,656	£1,656
		Ag-Env/LFA	£3,527	£4,702
		Other	£1,038	£1,038
Total	**£28,878**	**Total**	**£26,100**	**£29,141**
		Difference vs Current	***-9.6%***	***+0.9%***

Source: DAERA and The Andersons Centre

Assumptions:

1. **Number of Animals:** based on DAERA data but subject to rounding.
2. **EPS:** assumed to be 70% of current BPS payments (i.e. as at 2018/19)
3. **EQA Stage 1:** in Low scenario, payment is based on 16 calves. Under High scenario, payment is based on 30 calves.
4. **EQA Stage 2:** Low scenario payments made on 16 finished cattle. In High scenario, payments are made on 29 finished cattle.
5. **Agri-Env/LFA:** in Low scenario, support assumed to rise by 50% reflecting increased funding being made available as outlined above and LFA farms being better positioned than Lowland farms to avail of this support. Under High scenario a 100% increase is envisaged, which is higher than the increase for Lowland farms.
6. **Other support:** remains the same under both scenarios.

9. CONCLUSIONS AND RECOMMENDATIONS

Below is a summary of this study's key conclusions and recommendations drawn from both the primary and desk-based research. This is followed by some final remarks on the study.

9.1 KEY CONCLUSIONS

1. **Step-change in performance urgently needed:** over the course of conducting this study, it has become clear that the NI suckler beef and sheep industry needs urgent action to achieve a step-change in performance if it is to continue long-term as a major agricultural sector. The key to achieving this is through improved productivity and this emerged as a key theme, time and again, during the research.
   That said, it must also be acknowledged that there is a significant proportion of NI suckler beef and sheep farmers who see their farming operations as more of a hobby as opposed to something that must achieve a certain return (profit). Some will continue to farm, even if it is making no money in cash terms (and a loss when own labour and depreciation are considered). This has already been happening for several years in many cases. Whilst people should be free to continue to do what they wish with their own assets, provided they are not breaking the law, it is apparent that the amount of people continuing to farm unproductively but receive support payments, is holding back those who have the capacity and desire to expand. The logic of continuing to do this from a taxpayers' perspective needs to be examined if such farms are not meeting baseline productivity and environmental criteria.
   At the same time, it must be highlighted that there are many honest and hardworking part-time and full-time farmers working in the NI suckler beef and sheep sector who should be supported in helping them to earn an income from farming. In many cases, if these active farms had greater access to land they could make these enterprises worthwhile. In other instances, obtaining the skills to manage their operations more efficiently and in a manner which contributes to environmental upkeep, would make a major difference.
2. **A balanced approach to achieve better productivity and environmental sustainability:** with global populations continuing to grow towards 2050 and the challenges outlined above, a balance needs to be struck between being productive and environmentally sustainable. It is believed that the proposed policy framework set-out above goes a long way towards achieving this. In the years ahead, farmers are going to need to justify why they should continue to receive support from UK taxpayers. If the industry is not seen to be making tangible efforts to address environmental issues and giving itself the best chance of achieving long-term profitability through improved productivity, it will be forced to downsize significantly. This will have severe ramifications for the families affected, their local communities and the downstream industries which rely on suckler beef and sheep for their inputs.
3. **Use guaranteed levels of funding in the years ahead to bring about necessary change:** with the UK Government stating that support will be guaranteed at current levels until the end of this Parliament (late 2024), there is a window of opportunity to move the sector to a more sustainable and viable footing. That said, the competition from other protein sources, including dairy-beef, will continue to put pressure on profits. The sector must respond to this challenge and this will mean some changes taking place.
4. **Structural change is urgently needed:** very small farms account for nearly 60% of the NI beef cow population and most of these farms continue to be run by farmers older than 65. At the same time, over three-quarters of young farmers also operate on very small farms. There is a clear need

for a major structural change to take place (see Section 9.2 below). This will be closely associated with intergenerational transfer and, taken together, these would be a key means to achieve improved productivity at an industry level.

5. **Reviews have taken place before, now is the time for action:** as illustrated in Chapter 5 above, there have been numerous reviews and strategic initiatives for NI agriculture. Many of these have reached the same overall conclusions and some have included very sensible actions to improve performance. What is striking is that the follow-up efforts to achieve the goals set-out in these initiatives have fallen a long way short of what is required. The primary focus now needs to be on implementing the priority actions which these reviews have recommended to deliver the changes needed. It is often too easy to decide to do another performance review and strategy planning exercise to give the impression that progress is being made, but this is futile if nothing tangible happens as a result.
6. **Greater focus on customer needs:** again, this has been said many times before and some may perceive this to be coming across as trite. However, achieving profitability means focusing on the fundamentals. In this regard, satisfying customer needs more effectively than competitors is crucial. This means paying close attention to what the customer and consumers are saying and then delivering accordingly. So, if customer specifications require smaller sized animals, farmers need to deliver on this. Arguably, these is too much focus on "what looks good" to a farmer and not on what sells at the consumer end. There is little point incurring the costs, and emissions, associated with producing an overweight animal if it is not what is ultimately needed.
   Here, it must also be acknowledged that the entire industry has a role to play, not just the farmers. The correct market signals need to be given to farmers and processors, retailers and food service providers need to ensure that these messages are being received and acted upon.

9.2 RECOMMENDATIONS

1. **Evolve policy framework to deliver on key priorities but build on what has gone before:** whilst the UK has exited the EU and can now set its agricultural policy according to its needs, policy-setting never starts from a blank sheet of paper and needs to consider what has gone before. In this regard, the policy proposals set out in Chapter 8 continues with direct payments as the core support mechanism but has evolved it to place the environment and productivity at its heart whilst adopting more of a results-focused element. Whatever the eventual make-up of NI agricultural policy, it is recommended to continue with a direct payments mechanism, until other payment means (e.g. public money for public goods) become more established. Here, consideration also needs to be given to what is happening across the border in the Republic of Ireland where coupled payments have become more of a feature recently. Some coupled payments have been recommended here but are contingent on delivering something meaningful in return (i.e. low-methane cattle and FQA/LQA) which is valued by consumers and wider society.
2. **Future support tracks and matches funding received by Irish farmers:** close attention needs to be paid to the support that farmers in the Republic of Ireland receive, because in comparison with other parts of the UK, NI farmers will be competing much more closely with farmers in IRL. Therefore, NI support payments should be regularly reviewed so that they match what Irish farmers receive, thus levelling the playing field in terms of competitiveness.
   This point merits consideration in the context of support payments more generally, i.e. outside of suckler beef and sheep which was the focus of this study. This includes dairy-origin beef

where some of the headage-based measures in IRL assist this segment. However, such support should be provided in a manner which conforms to WTO and EU State Aid support limits.
The need to level the playing field between both jurisdictions is also relevant in other policy areas, including VAT, as such issues also have a major bearing on competitiveness.

3. **More intelligent use of data to minimise bureaucratic burden on farmers:** there is already a substantial amount of data collected on NI farms whether that be via the APHIS and BOVIS databases amongst others. These need to be leveraged as much as possible to enable farmers to seamlessly calculate KPIs such as calving intervals. In the future, this may need to be linked with "DNA tagging" to show that the progeny actually come from the performance sire (e.g. to prove eligibility for low-methane coupled payments). What should not be happening is that farmers are forced to re-key data several times when submitting applications for support. The IT capabilities are already available in other industries to automate much of this process. This needs to be adopted for processing support payments.
4. **Adopt tax incentives to promote land mobility:** it is evident that the tax breaks introduced in the Republic of Ireland a few years back have moved the dial in terms of land mobility. As set-out in Section 8.2.2, it is recommended to introduce a similar scheme in Northern Ireland but with a top-up payment for young farmers that participate, derived from 50% of previous payments to young farmers under the CAP.
5. **Focus of efforts to shift towards the consumer and societal needs:** as alluded to numerous times above, the suckler beef and sheep industry needs to become much more market oriented and move away from a purely production-oriented approach which has arguably dominated in the past. This needs to become a core aspect of CPD and, over-time, eclipse the focus on grants and support which many farmers have arguably paid more attention to in recent decades.
6. **Non-agricultural policy issues need to be tackled:** as illustrated in Section 8.3, there are a wide range of other policy issues which sit outside of agricultural policy and these need to be tackled in order to foster a viable and competitive suckler beef and sheep sector in the long-term. Of these, Brexit-related issues (trade and market access as well as labour) are the most pressing and need the most urgent attention.
7. **Develop a robust methodology to measure net GHG emissions:** it is a major gripe for the agri-food industry that the Intergovernmental Panel on Climate Change (IPCC) methodology does not accurately capture the mitigating effect of CO2 sequestration via grassland grazed by cattle. In this study, it emerged that some experts believe that between 1 to 3 tonnes of CO2e per hectare is mitigated each year via grassland in Northern Ireland. As a proportion of gross emissions from suckler beef, this is significant (circa 13% to 40%). It is evident that more robust methodologies need to be developed to reflect the UK situation rather than using generic global figures. Northern Irish institutions should play a leading role in this regard and there is an opportunity for the UK to become a world-leader in this area. As the old adage goes "if it cannot be measured, it cannot be managed". It is evident that for grazing livestock that further work is needed to measure emissions accurately. This would provide a solid basis to effectively manage and to mitigate future GHG emissions from suckler beef and sheep. That said, this should not be an excuse for inaction at the farm-level as there are steps which can be taken now to significantly reduce emissions, irrespective of the methodology used.

9.3 FINAL REMARKS

Overall, the NI suckler beef and sheep sector faces major challenges. These can be overcome with significant effort, but if the status quo continues, then the industry will downsize significantly in the long-run. The author firmly believes that the proposed policy framework represents a significant step in the direction that the industry needs to go bearing in mind future consumer and societal demands as well as farmers' needs and the role of agriculture in the wider rural economy.

If the industry can prove that it is moving in the right direction, then there is a greater prospect of continuing to receive support from the mid-2020's onwards. Society as a whole is going to need to get more accustomed to doing more with less, whether that is in terms of more output from the same level of inputs used (with less pollutant outputs) or the same output with fewer inputs (and again less pollution). The NI suckler beef and sheep sector has a positive role to play here, particularly if a more robust methodology to accurately measure net emissions at the farm level (i.e. consider carbon sequestration on grassland). It can continue to account for a substantial proportion of NI agricultural output, but concerted action needs to be taken now to achieve this. This includes acting now to begin to lower emissions, even if current methodologies are flawed. Adopting a wait-and-see approach will not work in the long-run. If the farming industry does not tackle key issues such as emissions head-on, then consumers will ultimately make decisions for them.

ACRONYMS

ABP	Anglo Beef Processors
AECM	Agri-Environment and Climate Measure
AFCS	Agri-Food Cooperation Scheme
AFRS	Agricultural Flat Rate Scheme
ANC	Areas of Natural Constraints
ASEL	Australian Standards for the Export of Livestock
BDGP	Beef Data and Genomics Programme
BEAM	Beef Emergency Aid Measure
BEEP	Beef Environmental Efficiency Programme
BLQAS	Beef and Lamb Quality Assurance Scheme
Bord Bia	Irish Food Board
BPS	Basic Payment Scheme
BRM	Business Risk Management
BSE	Bovine Spongiform Encephalopathy
CAFRE	College of Agriculture Food and Rural Enterprise
CAP	Common Agricultural Policy
CET	Common External Tariff
CMS	Countryside Management Scheme
CPD	Continuing Professional Development
CWT	Hundred Weight
DAERA	Department of Agriculture Environment and Rural Affairs
DAFM	Department for Agriculture, Food and the Marine (Ireland)
DARD	Department of Agriculture and Rural Development
DCMS	Digital, Culture, Media and Sport
DETI	Departments of Enterprise, Trade and Investment
DAP	Disadvantaged Area Payments
EBV	Estimated Breeding Value
ECA	Ecological Compensation Areas
ECU	European Currency Units
EEC	European Economic Community
EFA	Ecological Focus Areas
EFS	Environmental Farming Scheme

ELM	Environmental Land Management
EPS	Environment and Productivity Support
ES	Environmental Stewardship
EU	European Union
FBI	Farm Business Income
FBIS	Farm Business Improvement Scheme
FCN	Farming Community Network
FFKS	Farm Family Key Skills
FMIS	Farm Management Information System
FQA	Farm Quality Assured
FQAS	Farm Quality Assurance Scheme
FSA	Food Standards Agency
GAEC	Good Agricultural and Environmental Condition
GB	Great Britain
GDP	Gross Domestic Product
GF	Growing Forward
GHG	Greenhouse Gas
GLAS	Green, Low-Carbon, Agri-Environment Scheme
GSSE	General Services Support Estimate
GVA	Gross Value Added
HCC	Hybu Cig Cymru – Meat Promotion Wales
IFJ	Irish Farmers Journal
IPCC	Intergovernmental Panel on Climate Change
IRL	Republic of Ireland
KPI	Key Performance Indicator(s)
LFA	Less Favoured Areas
LFASS	Less Favoured Area Support Scheme
LQA	Lifetime Quality Assurance
LRP	Livestock Risk Protection
LUs	Livestock Units
MLA	Meat & Livestock Australia
MSA	Meat Standards Agency
NAEI	National Atmospheric Emission Inventory

NAP	Nitrates Action Programme
NFI	Net Farm Income
NI	Northern Ireland
NMP	Nutrient Management Plan
Norges Bondelag	A Norwegian farmers' union
OECD	Organisation for Economic Co-operation and Development
ONS	Office for National Statistics
POs	Producer Organisations
PSE	Producers Support Estimate
RDCs	Rural Development Colleges
RDP	Rural Development Programme
ROI	Return on Investment
ROW	Rest of World
SACs	Special Areas of Conservation
SAP	Sheep Annual Premium
SBCS	Scottish Beef Calf Scheme
SDA	Severely Disadvantaged Areas
SFP	Single Farm Payment
SLR	Standard Labour Requirement
SPS	Single Payment Scheme
SSBSS	Scottish Suckler Beef Support Scheme
SWEP	Sheep Welfare Efficiency Payment
TFP	Total Factor Productivity
UK	United Kingdom
USA	United States of America
USDA	United States Department of Agriculture
VAT	Value Added Tax
VRF	Volatility Reserve Fund
WTO	World Trade Organisation
YESS	Young Entrants Support Scheme

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