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How Cross Compliance contributes to Scotland's Vision for Agriculture

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1 Executive summary

1.1 Aims

This report examines how Cross Compliance contributes to Scotland's Vision for Agriculture, and whether introducing greater ambition will support Scotland in achieving its goals.

All farmers and crofters in Scotland who receive income support under the Basic Payment Scheme must observe Cross Compliance requirements, which are a set of rules that enforce laws around animal and plant health as well as sustainable agricultural practices. Cross Compliance requirements are set as Statutory Management Requirements (SMRs) and Good Agricultural and Environmental Conditions (GAECs). Breaches of these requirements can result in a penalty applied to the value of a business's Basic Payment Scheme payment entitlement.

The report explores the differences between the Cross Compliance rules in Scotland and EU Member States with a conditionality policy, and analyses the strengths, weaknesses and macro-environmental considerations of three selected opportunities which could be implemented to better align with Scotland's Vision for Agriculture. A conditionality policy in this context is a rule linking EU farm income support to farmers' compliance with essential environmental, health, welfare, and land-management standards.

1.2 Findings

We found that the contribution of Scottish Cross Compliance to the five outcomes of the Vision for Agriculture are uneven, with stronger alignment to environmental and animal welfare outcomes, and more limited support for thriving agricultural businesses and a just transition. There was limited evidence in the literature on the implementation and outcome of more ambitious Cross Compliance approaches.

We selected three Cross Compliance opportunities based on the evidence assessment and a set of criteria, and examined them in detail:

- **Opportunity 1:** Enhancement of buffer areas to be in line with best practice for maximum protection to nature and water pollution
- **Opportunity 2:** Extension of management requirements to reduce soil erosion risk
- **Opportunity 3**: Incorporation of hedgerow maintenance requirements

We identified four overarching considerations relevant to any development of the current Cross Compliance rules to better deliver on the Vision's outcomes:

- Balancing environmental ambition with profitability
    - Developing a strong monitoring and evidence base, including robust data to justify changes and increase the acceptability of policy adjustments
    - Co-designing rules with farmers, crofters and land managers
    - Increasing support, training and communication

Finally, the research emphasised the importance of considering any revisions to Cross Compliance within the wider Scottish agricultural policy framework. Increasing the ambition of Cross Compliance rules in Scotland to improve outcomes may create a gap between the EU conditionality requirements and the Scottish Cross Compliance system.

1.3 Conclusions

The opportunities studied here do not constitute an exhaustive list of possible improvements to deliver better economic, environmental and social outcomes, nor an indication of future policy changes to be applied to Cross Compliance rules in Scotland. There is clear potential to strengthen the Cross Compliance rules to support the outcomes of the Vision for Agriculture, but more evidence is needed to support any future changes, as well as holistic consideration of the wider agricultural and environmental policies.

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2 Glossary / Abbreviations table

ARC Act	Agriculture and Rural Communities Act
CAP	Common Agricultural Policy
EU	European Union
FYM	Farmyard Manure
GAEC	Good Agricultural and Environmental Conditions
MS	Member State
PESTLE	Political, Economic, Social, Technical, Legal and Environmental
RAG	Red-Amber-Green
REA	Rapid Evidence Assessment
RPID	Rural Payments & Inspections Division
SEPA	Scottish Environment Protection Agency
SMRs	Statutory Management Requirements
SOM	Soil Organic Matter
SWOT	Strengths, Weaknesses, Opportunities and Threats

3 Introduction

3.1 Context

Scotland's Vision for Agriculture is to be a global leader in sustainable and regenerative agriculture (see Figure 1). Together with the accompanying Route Map[1], it outlines policies aligned with national climate change[2] and biodiversity[3] targets in a post-Brexit context. As noted in the Agriculture and Rural Communities (ARC) Act[4], the overarching objectives of agricultural policy in Scotland include:

a) the adoption and use of sustainable and regenerative agricultural practices,
b) the production of high-quality food,
c) the promotion and support of agricultural practices that protect and improve animal health and welfare,
d) the facilitation of on-farm nature restoration, climate mitigation and adaptation, and
e) enabling rural communities to thrive.

These five Strategic Outcomes have been developed to articulate and evidence what successful delivery of the ARC Act objectives would mean in practice for Scotland's agriculture, rural communities and the rural economy.

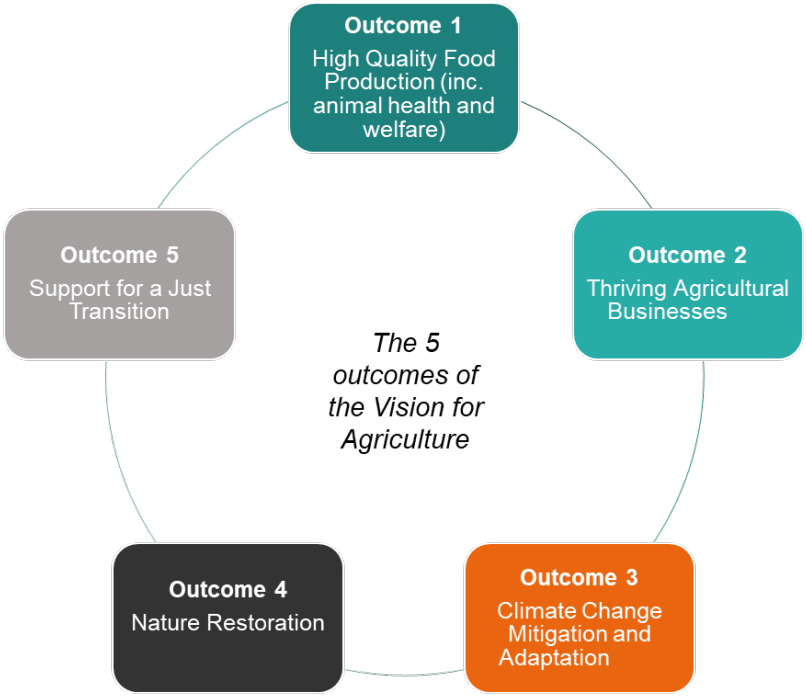

Figure 1: Illustration of the five outcomes of the Scottish Vision for Agriculture

[1] Agricultural Reform Route Map

[2] Securing a green recovery on a path to net zero: climate change plan 2018–2032 - update - gov.scot

[3] Supporting documents - Biodiversity strategy to 2045: tackling the nature emergency - draft - gov.scot

[4] Agriculture and Rural Communities (Scotland) Act 2024

These objectives aim to create a framework that supports environmental and climate goals while ensuring the economic viability and sustainability of Scotland's agricultural sector.

3.1.1 Cross Compliance

Cross Compliance is a set of rules comprising SMRs (Statutory Management Requirements) and GAECs (Good Agricultural and Environmental Conditions). SMRs are enforced by separate sectorial law in Scotland and include regulations such as the requirements for animal identification. GAECs introduce protections of natural resources such as water, soils & carbon stocks and the minimum level of maintenance required. Therefore, they align closely with Scottish Government climate priorities. Through measures such as maintaining buffer strips, limiting soil erosion or regulating hedge trimming to protect biodiversity, GAECs help mitigate environmental degradation, support ecosystem services and align with several of Scotland's broader goals of halting biodiversity loss and improving land and water health.

The Cross Compliance rules contribute to Scotland's environmental targets by setting baseline standards for environmental protection, climate change, good agricultural condition of land, water quality, public health, animal and plant health and animal welfare. Farmers must adhere to these rules to receive support payments, through delivering actions such as buffer strips. Cross Compliance launched in 2005 when the UK was part of the European Union (EU), and Scottish Government has retained the Cross Compliance rules since the UK left the EU in 2020.

Since the UK's withdrawal from the EU in 2020, Scotland is no longer bound to follow the set of conditionality rules known as "conditionality" included in the Common Agriculture Policy (CAP). This means that Scotland has the legal ability to review and revise Cross Compliance to better support national outcomes and to improve effectiveness. Through the review of GAECs in Scotland there is the potential to have far-reaching climate and biodiversity impacts as roughly 17,000 farmers across Scotland are currently required to meet GAECs requirements.

3.2 Aim of this project

This research examines how Cross Compliance contributes to Scotland's Vision for Agriculture, and to understand whether introducing greater ambition (i.e. conditionality) will support Scotland in achieving its goals. There were three key aims:

(i) Provide clarity and understanding of the current contribution of Scottish Cross Compliance to the five outcomes of the Vision for Agriculture,
(ii) identify the opportunities and barriers to developing the current set of Cross Compliance rules to better deliver on these outcomes, including from a practical implementation or economic perspective for farmers, crofters and land managers,
(iii) gather any specific lessons from comparable nations in the United Kingdom or the European Union from developments in Cross Compliance in other jurisdictions.

The analysis focusses on GAECS, because SMRs are embedded in separate Scottish Legislation, and therefore GAECs are more likely to be flexible in terms of scope. The

research project does not present an analysis of the efficiency and relevance of the current set of Cross Compliance rules in Scotland, nor recommend changing them.

This project looks at the alignment between the Cross Compliance rules and the Vision for Agriculture, exploring differences between these rules in Scotland and other nations with a conditionality policy, and analysing the strengths, weaknesses and macro-environmental considerations of three selected opportunities which could be implemented in order to better align with Scotland's Vision for Agriculture.

4 Selection of Cross Compliance opportunities

To select the Cross Compliance opportunities to be analysed for the potential to expand their ambition, a Rapid Evidence Assessment (REA), and stakeholder engagement was undertaken.

Based on the findings, the contribution of the rules was mapped to the outcomes of the Vision for Agriculture, including identifying any evidence gaps, weaknesses and examples of other nations' Cross Compliance rules showing greater ambition. Based on this assessment and stakeholder inputs, three opportunities were selected for further investigation. The methodological process followed for this project is illustrated in Figure 2.

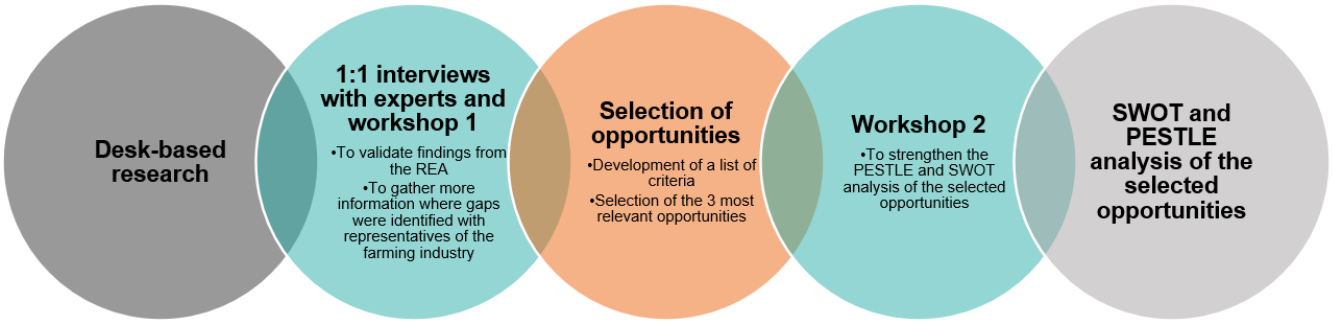

Figure 2: The five-step approach to develop the analysis of Cross Compliance opportunities

4.1 Assessment of the published evidence

We explored the role of Cross Compliance in Scotland within the context of the Scottish Government's Vision for Agriculture.

A structured REA approach was used to ensure transparency and rigour. A search strategy protocol, including key search terms, inclusion criteria and example search strings was developed, reviewed and agreed by the Steering Group. Evidence was gathered systematically, with searches recorded with information on search date and search engine and string used. Sources were screened for relevance and robustness, and relevant evidence was then extracted and appraised to address the research questions and identify knowledge gaps. **Appendix A** provides further detail and examples on the search strategy developed.

4.1.1 Findings and information gaps

4.1.1.1 Research question 1:

What are the Cross Compliance requirements in Scotland, which environmental benefits and limitations do they provide and how do they contribute to the Scottish Government's Vision for Agriculture?

A list of the SMR and GAEC requirements in Scotland was compiled (Table 1) and expert judgement was used to analyse alignment with the five outcomes of Scotland's Vision for Agriculture, scored using Red-Amber-Green (RAG) rating system:

- "Strong" indicates strong alignment with the outcome,
- "Partial/moderate" reflects partial or moderate alignment,
- "Negligible" signifies little to no contribution toward that outcome.

This assessment demonstrates that while Scotland's current Cross Compliance requirements contribute meaningfully to several outcomes within the Vision for Agriculture—particularly in areas such as climate change—their overall impact is uneven. Notably, Outcomes 2 (Thriving Agricultural Businesses) and 5 (Support for a Just Transition) appear to be the least well-supported by existing standards. This is consistent with the intended purpose of Cross Compliance, which focuses on maintaining baseline environmental protections rather than supporting economic or social-equity outcomes. Nonetheless, for the purposes of this research question- assessing the extent to which current Cross Compliance requirements align with the Vision for Agriculture - these findings point to clear opportunities to improve alignment, raise ambition, and address gaps in delivery.

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GAEC/SMR		Contribution to Scottish Governments' Vision for Agriculture				
		Outcome 1- High Quality Food Production (inc. animal health and welfare)	Outcome 2- Thriving Agricultural Businesses	Outcome 3- Climate Change Mitigation and Adaptation	Outcome 4- Nature Restoration	Outcome 5- Support for a Just Transition
GAEC 1	Buffer strips along watercourses	Negligible	Negligible	Strong	Strong	Negligible
GAEC 2	Abstraction of water for irrigation	Negligible	Partial/moderate	Strong	Partial/moderate	Negligible
GAEC 3	Protection of groundwater against pollution	Negligible	Negligible	Strong	Partial/moderate	Negligible
GAEC 4	Minimum soil cover	Partial/moderate	Negligible	Strong	Partial/moderate	Negligible
GAEC 5	Minimum land management reflecting site specific conditions to limit erosion	Partial/moderate	Negligible	Strong	Negligible	Negligible
GAEC 6	Maintenance of soil organic matter	Partial/moderate	Negligible	Strong	Partial/moderate	Negligible
GAEC 7	Retention of landscape features	Negligible	Negligible	Strong	Strong	Negligible
SMR 1	Nitrate Vulnerable Zones	Partial/moderate	Partial/moderate	Strong	Partial/moderate	Negligible
SMR 2	Conservation of wild birds	Negligible	Negligible	Strong	Strong	Negligible
SMR 3	Conservation of flora and fauna	Negligible	Negligible	Strong	Strong	Negligible
SMR 4	Food and feed law	Strong	Negligible	Strong	Negligible	Negligible

SMR 5	Restrictions on the use of substances having hormonal or thyrostatic action and beta-agonists in farm animals	Strong	Negligible	Negligible	Negligible	Negligible
SMR 6	Pig identification and registration	Strong	Negligible	Negligible	Negligible	Negligible
SMR 7	Cattle identification and registration	Strong	Negligible	Negligible	Negligible	Negligible
SMR 8	Sheep and goat identification	Strong	Negligible	Negligible	Negligible	Negligible
SMR 9	Prevention and control of TSEs	Strong	Negligible	Partial/moderate	Partial/moderate	Negligible
SMR 10	Restrictions on the use of plant protection products	Partial/moderate	Negligible	Partial/moderate	Strong	Negligible
SMR 11	Welfare of calves	Strong	Negligible	Strong	Negligible	Negligible
SMR 12	Welfare of pigs	Strong	Negligible	Strong	Negligible	Negligible
SMR 13	Welfare of farmed animals	Strong	Negligible	Strong	Negligible	Negligible

Table 1: Contribution of Cross Compliance requirements to Scottish Governments' Vision of Agriculture.

4.2 Environmental benefits of current Cross Compliance regulations

Information on the environmental benefits of Cross Compliance in Scotland is available in the literature, however available evidence on environmental limitations is limited and largely pre-2020. Based on interviews with the Scottish Government and its agencies, a study by Blackstock et al., 2018 found:

- Concerns that policy instruments that could address soil protection were not as well implemented as they could be (including under GAECs)
- There is scope to strengthen soil protection under the GAECs, and;
- There is potential for policy instruments, including GAECs, to deliver greater biodiversity outcomes if requirements were redesigned or implemented differently.

More recent analysis of the environmental limitations of Cross Compliance was not identified. In this context, 'environmental limitations' refers to areas where current Cross Compliance requirements may not fully address all environmental pressures, including emerging risks.

Table 2 presents a summary of the environmental benefits of GAECs (the study was focused on GAECs). A full list including the environmental benefits of SMRs is presented in **Appendix B.**

Table 2: Main environmental benefits associated with GAEC rules

GAEC	Environmental benefit
1 - Buffer strips along watercourses	Water pollution prevention; soil erosion reduction
2 - Abstraction of water for irrigation	Protection of water resources
3 - Protection of groundwater against pollution	Groundwater protection against pollution
4 - Minimum soil cover	Food and cover for insects, birds and small mammals; erosion control
5 - Minimum land management reflecting site specific conditions to limit erosion	Erosion control
6 - Maintenance of soil organic matter	Biodiversity support; supports air and water quality; Climate change mitigation
7 - Retention of landscape features	Nature conservation ; Climate change mitigation

4.2.1 Barriers to implementation

We also identified barriers which can limit the effectiveness of Cross Compliance as a tool for changing the management practises of farmers, crofters, and land managers in Scotland and more widely in the EU. These include:

- **Administrative burden:** The administrative burden of Cross Compliance, primarily the time and effort required both understand requirements and maintain/collate evidence to demonstrate compliance has been widely discussed and remains a major concern despite attempts by public authorities to reduce the burden. Minimising the administrative burden of Cross Compliance can increase the efficiency of agricultural policy. (El Benni et al., 2025)
- **Lack of awareness and training***:* A lack of awareness around the environmental benefits of compliance indicates the need for a cultural shift within the farming sector. Improved training and communication could help build understanding of how Cross Compliance supports water quality, soil health, biodiversity, and long-term business sustainability. Emphasising the value of environmental protection as part of business resilience, not just for regulatory purposes, may encourage uptake (Blackstock et al., 2018)
- **Fear of penalties and inspections***:* Some farmers and land managers expressed concerns over the risk of prosecution and fines, particularly due to the complexity of rules and fear of inadvertent non-compliance (MacLeod et al., 2008 and Blackstock et al., 2018). This apprehension around inspections can discourage engagement with compliance measures.
- **Limited access to advice and guidance***:* Earlier studies (Baldock et al., 2013 and Bennett at al., 2006) highlighted challenges in accessing clear, practical guidance on Cross Compliance across both Scotland and the EU and suggested that existing support mechanisms were not always user-friendly or well-communicated. While current guidance is now clearly set out by Rural Payments and Services, farmers may still experience difficulties in navigating complex requirements or knowing where to look for further information.

4.2.1.1 Research question 2: Are there any other UK devolved administrations and/or EU Member States (MS) which have shown greater ambition beyond the basic Cross Compliance requirements?

A key challenge in exploring the second research question was the limited literature sources focussing specifically on Cross Compliance ambition. Many references concentrated on eco-schemes or agri-environment schemes, which, while related, fall outside the scope of this project. Among the sources addressing Cross Compliance directly, the emphasis was often on inspections, breaches, and the communication or interpretation of regulatory requirements rather than their ambition beyond the basic Cross Compliance requirements.

While some sources provided insights into how individual European Member States and other UK devolved administrations implement Cross Compliance, it was often unclear whether these examples represented the most ambitious approaches relative to other countries. In a few cases, sources suggested that certain countries go beyond the basic requirements; however, there was a lack of detailed information on how these enhanced measures were implemented, the outcomes achieved, and any barriers or lessons learned. Table 4 presents some examples. As previously indicated, these examples do not cover each

GAEC individually, and it remains unclear whether they represent the most ambitious approaches across Member States. As such, the insights should be interpreted as indicative rather than comprehensive. The examples also largely draw on earlier CAP programming periods, given that comprehensive analysis of implementation and outcomes under the new CAP is less available.

Table 3: Examples of Cross Compliance rules in EU MS presented a wider scope than Scotland

Country	Cross Compliance requirements going beyond current GAEC requirements in Scotland	Related Scottish GAEC	References
France and Spain	Management of irrigation systems.	GAEC 2	Farmer, M. and Swales, V., 2004.
France	Unfertilised buffer strips of 5–10 metres width along watercourses.	GAEC 3	European Court of Auditors, 2008
Belgium Flanders	Soil analysis (measure related to soil erosion)	GAEC 5	Farmer, M. and Swales, V., 2004
Netherlands	• Notification of more than normal erosion and submit a plan with the measurements they take to adequately fight this erosion • Application of soil treatment measures: targeted post-harvest soil tillage/ wiping tractor-wheel lines and seeding maize and sugar beet/use of follow up green manure crop after cereal and maize/Create water flow-hindering provisions at beneath-side of parcels • Prohibition to exploit soils with slope of 18% or more in another way than grassland • Insurance that permanent pasture area (used as grassland for a period of 5 years or more) does not decline		Jongeneel, R. and Brouwer, F., 2007
France	In the category of other soil erosion standards, France has established an obligation to set up buffer stripes along watercourses. The standard requires farmers who have a watercourse present on the farmland, to set up 5m-10m buffer zones (grass strips)		Kristensen, L. and Primdahl, J. (2006)
Netherlands	Farmers are to report cases of extraordinary erosion		
Greece & Lithuania	Arable stubble: incorporation in soil or grazing	GAEC 6	Kristensen, L. and Primdahl, J. (2006)
Czech Republic	Application of liquid manure		

Country	Cross Compliance requirements going beyond current GAEC requirements in Scotland	Related Scottish GAEC	References
Netherlands & Italy	Green cover on set aside land		
France & Germany	Crop rotation providing a yearly cultivation of at least three crops (excluding permanent crops)		
Greece	Cultivate grain legumes and incorporate these into the soil on 20 % of the cultivated area of their farm each year to improve soil organic matter (SOM)		European Court of Auditors, 2008
Denmark	No tillage is allowed on soils with >12% carbon within protected areas		Environmental Pillar, 2025

Due to limited published evidence, we were unable to draw meaningful comparisons with other jurisdictions. The matrix developed and presented in **Appendix C** provides a high-level overview of EU GAECs that most closely align with the Scottish GAECs, highlights the countries implementing the greatest number of farm practices under these standards, and presents a selected Member State (based on similarity to Scotland climate and agriculture) to illustrate key farm practices and potential opportunities for development of existing GAEC requirements relevant to Scotland. These potential opportunities include:

- GAEC 1- Ploughing bans/restrictions
- GAEC 4- Summer cover crop; ban of ploughing grassland
- GAEC 5- low/no till; Presence of other unproductive areas and strips
- GAEC 6- Crop residues left on soil; biodiversity plan
- GAEC 7- Maintenance and conservation of field margins

The review of published evidence highlighted significant knowledge gaps, and the information available was largely high-level, meaning the insights gathered were not sufficient to identify clear opportunities for Scotland to address the five outcomes of the 'Vision for Agriculture' through the current Cross Compliance requirements.

4.2.2 Conclusion

The review of the published evidence found that Scotland's Cross Compliance requirements align most strongly with environmental and animal welfare outcomes of the Vision for Agriculture but offer limited support for business resilience and a just transition. This is as expected given Cross Compliance's environmental protection remit. While evidence of more ambitious approaches beyond the baseline was identified, this was generally high-level and often lacked detail on implementation or outcomes. As a result, whilst potential opportunities for Scotland do exist, the lack of detailed evidence makes it challenging to understand how these approaches could be used to enhance Cross Compliance in support of all five Vision outcomes.

4.3 Stakeholder engagement

The project engaged with stakeholders through a series of structured interviews and workshops to build on the findings of the REA. The first workshop presented the REA results and worked with expert stakeholders to provide Scottish context, helping to refine the research focus and develop a shortlist of Cross Compliance rules considered to have the greatest potential for positive impact.

The second workshop held with policy experts and the structured interviews focused on a deeper exploration of the selected Cross Compliance opportunities, identifying their strengths, weaknesses and the main macro-environmental factors to be considered, if a change in Cross Compliance rules was implemented.

The stakeholder engagement process involved first the development of a Stakeholder Engagement Plan, an Interview Guide and a Workshop Guide. We conducted 3 structured interviews with experts and then held the first workshop with industry representatives to identify the opportunities to be further analysed. We then conducted a second workshop with Scottish Government representatives and 4 structured interviews with experts to complement and refine our opportunity analysis.

The list of organisations which attended the workshops is presented in Appendix D and the main findings are presented in section 4.1.2.

4.3.1 Stakeholder Engagement research findings

In addition to supporting the identification of opportunities, stakeholders provided input on wider considerations on whether Cross Compliance could or should be evolved to better support the Vision for Agriculture.

- **Lack of alignment of Cross Compliance with the Vision for Agriculture**: Both the literature analysis and the stakeholder engagement identified that the Vision for Agriculture and the present GAECs are aligned largely on Outcome 3 (Climate Change Mitigation and Adaptation) and to some extend to Outcome 4 (Nature Restoration). Some stakeholders highlighted that compliance with Cross Compliance rules allows the full payment of support schemes such as the Basic Payment Scheme or the Less Favoured Area Support Scheme, and in that regard plays a significant role in contributing to thriving rural communities (Outcome 2), by helping to maintain farm incomes. However, Cross Compliance was created with the intent to help maintaining baseline environmental protections, rather than supporting economic or social-equity outcomes.

- **The need to balance environmental ambition and business profitability, within a broader policy framework:** Stakeholders repeatedly highlighted the importance of balancing environmental or social ambition with profitability and farmer's buy-in. Increasing the level of requirements in the Cross Compliance rules presents some cross-cutting risks such as:
    i. competitiveness concerns for farmers, crofters and land managers if the enforcement of these rules imply investments, a reduction of productive land, are more labour-intensive, increase the administrative burden, etc.
    ii. Reduced compliance and decrease in enforcement rates, if the rules are not well understood or deemed impractical. This could necessitate more frequent

controls from enforcement authorities, that would place an additional burden on public finance.

iii. An increased number of farmers, crofters or land-managers deciding not to claim Basic Payments, and therefore no longer subject to GAECs, leaving greater gaps in environmental protection.

Several stakeholders stressed the need to consider GAECs within the broader Scottish agricultural policy framework, as Cross Compliance rules interact with other policy mechanisms such as Greening, Tier 2, Agri Environment Climate Scheme, Whole Farm Plan and wider environmental policies and regulations, in order to avoid disconnections and gaps.

- An increase of the environmental ambition of the current Cross Compliance rules could be achieved by introducing new requirements, strengthening the existing ones or by shifting some practices which are currently incentivised by other policy mechanisms such as the Agri-Environment Climate Scheme into the baseline requirements. Depending on the changes, some GAECs may be strengthened without major administrative or economic burden, whereas others may deliver better outcomes with some support through incentivised schemes.

- **The involvement of Scottish farmers, crofters and land managers in a co-design process of the rules:** The importance of adopting a multi-stakeholder approach to design policy instruments is widely recognised (Reed, M., 2008). Stakeholder participation increases the quality of environmental decisions, improves the legitimacy of the instruments and the likelihood of their adoption. Stakeholders emphasised the importance of engaging with the farming community and co-designing any changes in Cross Compliance rules to ensure practicality, increase buy-in and improve compliance and therefore effectiveness. Several ideas were mentioned, such as the possibility of involving farmers, crofters and land managers in monitoring and self-regulation to improve engagement or strengthen education and awareness by linking compliance to visible environmental outcomes.

- **The need for support, training & communication**: The importance of improved access to advice, training, and communication has been repeatedly highlighted during the stakeholder engagement activities. For example, soil poaching by livestock near watercourses is a relatively common breach, often due to lack of awareness or habitual livestock management. Training and advice are key to improve compliance, as cumulative impacts of small breaches are poorly understood by farmers.

4.4 Information gaps identified

Stakeholder interviews and workshops highlighted several additional research possibilities, which build on the information gaps identified in section 4.1.1. Further research, as detailed below, could improve understanding of how current Cross Compliance supports Scotland's Vision for Agriculture. It could also indicate how greater ambition in Cross Compliance requirements could support Scotland achieve its goals.

- Strengthening monitoring and scientific evidence, with standardised collation between different farm visit and inspection teams. Stakeholders highlighted the importance of providing evidence-based elements to support any changes in the baseline of Cross Compliance requirements to increase their acceptability. However, the desk-based research performed in this project highlighted the current lack of robust monitoring and evaluation data on GAEC rules and their contribution to economic, environmental or social outcomes.

- A broader mapping of the interaction between the Cross Compliance requirements and the other following schemes included in the Scottish agricultural policy framework, as they related to support of Scotland's Vision for Agriculture objectives:
    - Legal requirements which apply to farmers beyond Cross Compliance (e.g. the General Binding Rules in the Environmental Authorisations (Scotland) Regulations 2018),
    - The Whole Farm Plan
    - Greening
    - The Agri-Environment Climate Scheme
    - Farm assurance schemes in Scotland.

- **A detailed assessment of comparable EU countries' Cross Compliance guidelines**, to understand real-world standards and practices and their contribution to goals aligned with Scotland's Vision for Agriculture objectives. This could include a review of the post-2028 CAP proposal to replace enhanced conditionality with "protective practices".

4.5 Selection of opportunities

Based on the results of the evidence assessment, we identified three opportunities for further investigation based on the following criteria:

- Does this opportunity address at least one outcome of the Vision for Agriculture?
- Has this opportunity been implemented elsewhere, to benefit from any lessons learnt?
- Is this opportunity already covered or partly covered by another Scottish Policy?
- Can this opportunity be monitored?

The GAECs selected for further analysis in the final stage of the project were:

- **Opportunity 1:** Enhancement of buffer areas to be in line with best practice for maximum protection to nature and water pollution (related to **GAEC 1 - Buffer strips along watercourses**)
- **Opportunity 2:** Extension of management requirements to reduce soil erosion risk (related to **GAEC 5 - Minimum land management reflecting site specific conditions to limit erosion**)
- **Opportunity 3**: Incorporation of hedgerow maintenance requirements (related to **GAEC 7 - Retention of landscape features**)

5 Cross Compliance opportunities analysis

This section covers an analysis of the Strengths, Weaknesses, Opportunities and Threats (SWOT), and a high-level assessment of the Political, Economic, Social, Technical, Legal and Environmental (PESTLE) factors associated with the shortlisted opportunities. This analysis was completed using Ricardo's in house expertise and judgement and findings from the stakeholder engagement activities performed during this project. The full analysis for each opportunity is presented in SWOT and PESTLE tables in Appendix E.

Across all three opportunities, the analysis shows some cross-cutting findings: each option provides additional environmental benefits that contribute to the outcomes of Scotland's Vision for Agriculture, particularly on climate action, nature restoration, and long-term resilience. All measures strengthen protection of natural assets: buffer strips or areas improve water quality and riparian habitats; erosion-focused rules safeguard soils and reduce flood risk; and hedgerow maintenance enhances habitat connectivity, carbon storage and shelter for livestock. These opportunities also support the delivery of stronger environmental standards and visibly demonstrate stewardship, meeting high public expectations.

However, this higher environmental ambition comes with challenges. Each opportunity presents greater management complexity, often requiring a more detailed appreciation of local environmental conditions, seasonal planning, or active maintenance. This raises the cognitive burden on farmers, crofters and land managers, especially where holdings have varied soils, slopes, or landscape features. A recurring theme is the need for substantial advisory support, training, and user-friendly guidance to bridge knowledge gaps and ensure proportionate, practical rules. All options also increase monitoring and enforcement demands on government, particularly where requirements are context-specific or condition-based.

Economically, short-term costs created by land taken out of production, changes in practice, or additional labour may be balanced by longer-term productivity and resilience gains, such as reduced soil loss, improved water management, and healthier ecological networks. Politically, all three opportunities align well with current EU conditionality requirements but could be exposed to future divergence, as the EU sets out potential new changes for the future of conditionality. Social considerations also emerge across all opportunities, including the need to ensure fairness between upland and lowland systems, the risk of placing disproportionate demands on smaller farms and crofts, and the possibility of pushback if the rules are viewed as inflexible or overly demanding.

Overall, the common message is that the environmental case for improvement is strong, but successful implementation depends on clarity, flexibility, and well-resourced support – ensuring that higher ambition complements, rather than compromises, the viability of agricultural businesses.

5.1 Opportunity 1: Enhancement of buffer areas to be in line with best practice for maximum protection to nature and water pollution

5.1.1 Opportunity description

This opportunity relates to GAEC 1, which covers buffer strips along watercourses[5], among other practices to protect water against pollution. The requirements, which seek to restrict the storage, application of fertilisers and pesticides and cultivations along watercourses, cover the following:

- Application of manure/fertiliser at a certain distance from a water course or during certain conditions;
- Location of field heaps/storage of manure on holding at certain distances from water courses;
- Cultivation of land a certain distance from top of a bank (exemptions apply).

GAEC 1 was explored as a potential opportunity for improvement to further support and align with the aims of the Vision for Agriculture, particularly outcomes 3 and 4. The proposed opportunity covers an enhancement of buffer areas to increase protections to nature and reduce water pollution, by following best practices guidelines focusing on soil type, watercourse type, buffer strip width, buffer strip species composition, and buffer zone size, based on the REA results with examples from other countries.

Other countries, particularly those in the EU following conditionality rules, have set out various ranges and compositions of buffer zones. GAEC 4 in the EU conditionality rules refers to the establishment of buffer strips along water courses[6]. For example, Ireland, which has similarities in cropping systems to Scotland, has a wider range of buffer zone distances (from 3-250m) for spreading organic fertiliser, and for the storage of farmyard manure (FYM) depending on the type of waterbody and cropping activity. In addition, some EU countries go above the basic GAEC requirements and include practices such as restricting certain crop species, or including specific soil management actions along watercourses.

5.1.2 Summary of the findings

The SWOT and PESTLE analysis identified the potential for strong environmental benefits through the enhancement of watercourse buffer areas. Wider and better-designed buffer strips help reduce nutrient and soil runoff, which improves water quality and creates healthier habitats along watercourses. Adjusting buffer width, vegetation and management to local soil, slope and watercourse conditions makes them more effective, especially during heavy rainfall. This approach is in line with good practice across a number of EU Member States' approaches and supports climate adaptation by reducing erosion, stabilising soils and improving soil carbon storage capacity.

[5] Buffer strips along watercourses (GAEC 1)

[6] Conditionality - Agriculture and rural development - European Commission

However, the changes would make farm management more complex. Different buffer widths and management rules increase the amount of information farmers must keep track of and require greater knowledge of local soils and water systems. Smaller farms or crofts with a higher proportion of land adjacent to watercourses may lose more productive area, which could disproportionately affect their income and long-term business viability. Regulators would also face higher monitoring demands, as they would need to check site-specific requirements. In the short term, farmers may face a reduction of productive land and additional maintenance load, although over time the benefits – such as lower water treatment costs and reduced damage from erosion – could be significant.

Finally, farmers, crofters and land manager may push back, and compliance levels may suffer if the rules feel too complicated or punitive, especially without good advisory support.

The full analysis of strengths, weaknesses, opportunities, threats and wider macro-environmental factors is presented in Appendix E, section 8.1.

5.2 Opportunity 2: Extension of management requirements to reduce erosion risk

5.2.1 Opportunity description

This opportunity relates to GAEC 5, which currently covers minimum land management reflecting site specific conditions to limit erosion and aims to protect soil against erosion in certain situations. The requirements cover the following:

- Limit erosion from overgrazing or heavy poaching by livestock.
- Put in place measures to limit soil erosion if conditions prevent subsequent crop or cover from being sown (e.g., grubbing and sediment traps/fences)

GAEC 5 was explored as a potential opportunity for improvement to further support and align with the aims of the Vision for Agriculture, particularly outcome 3. The opportunity covers an inclusion of tillage restrictions on specific areas to reduce the risk of erosion.

For EU countries, GAEC 5 is broad and designed to "prevent soil erosion through relevant practices" and different Member States have specific variations on GAEC 5 rules. For example, Ireland includes tillage management rules for both arable and grassland areas:

- For grassland parcels, Ireland's GAEC 5 mandates that there is no ploughing allowed between the 16th of October and 30th of November, and no ploughing on land with a ≥20% slope between the 1st and 31st of December.
- For arable land, there is no ploughing on land with a ≥15% slope between 1st and 31st of December; if arable land is ploughed between 1st of July to the 30th of November, farmers must sow a green cover within 14 days of ploughing.

In France, ploughing is prohibited downhill during the most sensitive periods (from 1st of December to 15th of February), specifically on plots located on slopes greater than 10%. While there are some exemptions, this greatly reduces soil erosion impacts in these fields.

5.2.2 Summary of the findings

Strengthening erosion-risk management would bring clear environmental and climate benefits. Limiting tillage on steep or vulnerable land, or during high-risk periods, helps reduce soil loss and prevents sediment reaching watercourses. These measures improve soil structure, support better water infiltration and reduce runoff, offering stronger protection during increasingly frequent heavy rainfall. Evidence from other countries shows that these targeted restrictions work well in practice and support long-term soil health.

At the same time, this opportunity would add complexity for farmers. Erosion risk varies widely across Scotland, so rules may differ by field, slope or season. This means farmers may need to build additional knowledge about erosion risks and suitable management options and may have to adjust operations based on conditions each year. Some measures could also reduce flexibility in how land is managed, particularly where steep slopes or varied topography are involved, which may cause concern. The monitoring burden for Scottish Government would also increase due to the need to check more detailed and time-sensitive requirements.

Short-term costs may arise through changes to current practice, for example, fencing to protect sensitive areas or establishing ground cover more frequently. But over time, better soil management can deliver important economic benefits, including maintaining soil fertility, reducing remediation needs and preventing more serious erosion damage. As with the other opportunities, acceptance will depend on clear guidance, practical support, and rules that take account of different farm systems and landscapes.

The full analysis of strengths, weaknesses, opportunities, threats and wider macro-environmental factors is presented in Appendix E, section 8.2.

5.3 Opportunity 3: Incorporation of hedgerow maintenance requirements

5.3.1 Opportunity description

This opportunity relates to GAEC 7, which currently covers retention of landscape features to protect them. The current GAEC requires the following:

- Dry stone or flagstone dykes, turf and stone-faced banks, walls, hedges, ponds, watercourses or trees must not be removed or destroyed without consent.
- No hedges trimming or lopping of tree branches during the bird nesting and rearing season (there are some exemptions).
- No cultivation of land within two metres of the centre line of a hedge (exemptions apply)
- No application of fertilisers (organic manure, chemical or nitrogen) or pesticides within two metres of the centre line of a hedge (exemptions apply).

GAEC 7 was explored as a potential opportunity to incorporate hedgerow maintenance requirements in Scotland to further support and align with the aims of the Vision for Agriculture.

GAEC 7 in Scotland is equivalent to GAEC 8 in the EU[7], which requires the maintenance of non-productive areas and landscape features, and the retention of landscape features, including hedgerows. As noted previously, other countries have variations on the rules, going further than the minimum requirement. For example, in France, hedges less than or equal to 10 metres wide must be managed for biodiversity, and a hedge may not have any discontinuity ("gap" or portion of the linear feature containing elements that do not meet the definition of a hedge) greater than 5 metres. In Ireland, there is a specific focus on invasive species control on landscape features and non-productive areas, and any replacement hedgerows must consist of traditional local species.

5.3.2 Summary of the findings

Introducing hedgerow maintenance requirements would provide a wide range of environmental, climate and landscape benefits. Well managed hedgerows improve biodiversity, support wildlife movement, store carbon and help reduce wind erosion and runoff. They also play an important role in farming systems by providing shelter for livestock and contributing to healthier soils and water. International experience shows that active management – such as planned cutting, gap filling and using appropriate species – greatly improves hedgerow condition and long-term function.

However, moving from basic protection to active maintenance increases the workload and knowledge required of farmers. Hedgerows vary in age, type and condition, so it can be difficult to apply one set of rules that fits all situations. This means farmers may need new advice on cutting cycles, species selection and how to manage gaps, while inspectors may need to make more judgement-based assessments of hedge condition. These factors make monitoring and enforcement more challenging and may increase costs for both farmers and government.

Although farmers could face new short-term costs – such as replanting, gap filling and more regular maintenance – the potential longer-term gains could be substantial, including reduced erosion, healthier ecosystems, and improved animal welfare through increased livestock shelter. Public support is likely to be high because hedgerows are visible features and strongly associated with a well-managed rural environment.

The full analysis of strengths, weaknesses, opportunities, threats and wider macro-environmental factors is presented in Appendix E, section 8.3.

6 Conclusion

This project examined how Cross Compliance contributes to Scotland's Vision for Agriculture, and whether introducing greater ambition will support Scotland in achieving its goals. We delivered an analysis of three selected opportunities of enhanced Cross Compliance rules. The selected opportunities do not constitute an exhaustive list of possible improvements to deliver better economic, environmental and social outcomes, nor an indication of future policy changes to be applied to Cross Compliance rules in Scotland.

[7] Conditionality - Agriculture and rural development - European Commission

6.1 Current Contribution of Cross Compliance to the Vision for Agriculture

Mapping the current Cross Compliance rules against the five outcomes of the Vision for Agriculture has clarified where Scotland already has a solid foundation (particularly for Outcomes 3 and 4), and where opportunities exist to strengthen alignment.

The project emphasised the importance of considering any revisions to Cross Compliance within the wider Scottish agricultural policy framework, given the interactions between Cross Compliance and mechanisms such as Greening, Tier 2 schemes, the Agri Environment Climate Scheme, Whole Farm Plans, and broader environmental policies and regulations.

6.2 Opportunities and barriers to enhanced Cross Compliance

Across the literature, stakeholder engagement, and the analysis of three selected opportunities, a set of cross-cutting themes have been identified.

6.2.1 Common strengths and opportunities

- Enhancing environmental ambition within Cross Compliance through wider buffer areas, strengthened erosion-control measures, or more active hedgerow maintenance could deliver additional benefits for water quality, biodiversity, soil health, carbon storage, and climate resilience.
- Several improvements would allow for more targeted, locally tailored requirements rather than uniform rules, such as differentiating rules by soil type, slope, etc. Stakeholders noted that this approach is fairer, avoids placing disproportionate burdens on certain farms or crofts, and is likely to deliver better environmental outcomes as it directs effort to the places where risks are highest and benefits greatest.
- These environmental gains could also support long-term business resilience, for example by reducing erosion damage, improving soil structure, and moderating the impacts of extreme weather.

6.2.2 Shared constraints and risks

- Increasing ambition introduces greater management complexity for farmers, crofters and land managers, and raises the risk of unintentional non-compliance. For the Scottish Government, there is a risk of increased enforcement challenges where rules are highly site specific or qualitative.
- Stronger rules could lead to increased short-term economic costs, such as reduced productive area or additional labour, and may create perceptions of competitive disadvantage.
- There is a consistent need for clear guidance, tailored training, advisory support, and co-design with farmers, crofters and land managers to ensure rules are both practical and acceptable.

The analysis also highlighted the strong role for digital tools, remote sensing, mapping, and precision technologies to support targeting and monitoring. Overall, stakeholders emphasised that environmental ambition must be balanced with profitability, fairness, and

proportionality, and must be considered alongside the suite of other policy instruments that also contribute to the Vision's outcomes.

6.2.3 Lessons from Other Jurisdictions

This project gathered lessons from EU Member States on increasing the ambition of Cross Compliance rules. We identified examples of stronger or more specific requirements, which offered useful indications of possible directions for Scotland. However, the evidence base was high-level, fragmented, and often outdated, with limited detail on implementation, enforcement, practical delivery, cost-effectiveness or observed outcomes. This makes it difficult to determine which international approaches are genuinely most effective, or most relevant to the Scottish context.

6.2.4 Key information gaps

The literature review found limited evidence on the implementation and outcome of more ambitious Cross Compliance approaches. The project identified several information gaps, limiting Scotland's ability to make well-evidenced decisions about increasing ambition within Cross Compliance.:

- Limited monitoring and evaluation data on how existing Cross Compliance requirements perform in practice, and on their contribution to environmental, economic or social outcomes.
- Lack of detailed implementation evidence from other countries, particularly on costs, compliance, enforcement, and effectiveness.
- Unclear interactions between Cross Compliance and other Scottish policy instruments such as Tier 2, Agri Environment Climate Scheme, Whole Farm Plans or Greening, making it difficult to assess the overall contribution to the Vision for Agriculture.
- Ambiguity around future EU conditionality developments, and how Scotland might seek to enhance the Cross Compliance ambition without creating unintended divergence between the EU conditionality and the Scottish Cross Compliance systems.

6.2.5 General considerations

The findings indicate that Scotland has clear opportunities to strengthen environmental outcomes through Cross Compliance. This project identified some overarching considerations for developing the current set of Cross Compliance rules to better deliver on the Vision's outcomes:

- Balancing environmental ambition with competitiveness
- Developing a strong monitoring and evidence base, including robust data to justify changes and improve the acceptability of policy adjustments
- Co-designing rules with farmers, crofters, and land managers
- Increasing support, training and communication

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8 Appendices

Appendix A Search strategy

Key words and terms

Words and terms	Notes
REA section1	
Scotland	Including Scottish
Cross Compliance	Including: Conditionality, Direct Payments, Tier 2, enhanced conditionality
Requirements	Including: Regulations, Conditions, Obligations
GAEC	Including: Good Agricultural and Environmental Conditions
SMR	Including: Statutory Management Requirements
Environmental benefits	Including: Advantages, Gains, Improvements
Environmental limitations	Including: Weakness, Constraints, Restrictions, Limits, Gaps, Shortcomings, Limitations, 'Areas for improvement'
Vision for agriculture	Including: Scottish Government, Outcomes, Contribution
Barriers to implementation	Including: Challenges, Obstacles, Delivery
Farmers	Including: Crofters and land managers
REA section 2	
Defra	Including: England, ELM Scheme
Welsh Government	Including: Wales
Irish Government	Including: DAFM, Teagasc, Ireland, Republic of Ireland, ROI, Northern Ireland
European Member States	Including: EU, European Union, EU-27, EU MS
Greater ambition	Including: Enhanced impact, Conditionality, Beyond basic Cross Compliance, Pillar 2
Implementation	Including: Execution, Delivery, Uptake
Outcomes	Including: Impact, Effect, Achievement, output, results, CAP Strategic Objectives
Barriers to implementation	Including: Challenges, Obstacles, Delivery
Lessons learnt	Including: Findings, Key takeaways, reflections, insights

Example search strings

Research question 1:

- TITLE-ABS-KEY "Scotland" AND "("Cross Compliance" OR "GAEC" OR "SMR") AND "environmental" ("benefits" OR "limitations")
- TITLE-ABS-KEY "Scotland" AND ("Cross Compliance" OR "GAEC" OR "SMR") AND current "environmental" ("weakness* OR "gaps" OR "limitations")
- TITLE-ABS-KEY "Scotland" AND "("Cross Compliance" OR "GAEC" OR "SMR") AND ("implementation" OR "Delivery") AND ("Barrier*" OR "Challenge*") AND ("Farmer*" OR "Crofter*")

Research question 2:

- TITLE-ABS-KEY ("European" OR "member state" OR "Defra" OR "Welsh Government" OR "Irish Government") AND "ambition" AND "beyond" AND "Cross Compliance"
- TITLE-ABS-KEY "*" AND ("Implementation" OR "Delivery") AND ("Outcomes" OR "findings")

*name/detail of increased ambition requirement

Screening criteria

Literature was screened for information on the following inclusion criteria

- Cross Compliance environmental benefits and limitations (REA Section 1)
- Barriers to implementation of current Cross Compliance requirements for farmers and crofters (REA Section 1)
- Cross Compliance requirements contribution to the Scottish Government's Vision for Agriculture (REA Section 1)
- Cross Compliance gaps or areas of current weakness related to environmental outcomes (REA Section 1)
- Countries which have shown/ are showing requirements with greater ambition beyond the basic Cross Compliance requirements (REA Section 2)
- How these requirements have been implemented, outcomes achieved, barriers to implementation, unexpected consequences and lesson learnt (REA Section 2)

Appendix B Cross Compliance requirements and associated environmental benefits

Cross Compliance requirement (GAEC/SMR)[8]	Environmental Benefits	References
GAEC 1 Buffer strips along watercourses	• Water pollution protection • Slow down flood flows and provides bank stabilisation and habitat • Soil erosion reduction	• RPS GAECs Detailed guidance • SEPA 2009 • Scot Gov 2018
GAEC 2 Abstraction of water for irrigation	• Protect water resources • Prevention of downstream water pollution.	• RPS GAECs Detailed guidance • Code of good practice n.d.
GAEC 3 Protection of groundwater against pollution	• Protect groundwater against pollution	• RPS GAECs Detailed guidance
GAEC 4 Minimum soil cover	• Protect soil against erosion after harvest until the end of winter • protect the soil against leaching and depletion of organic matter • providing food and cover for insects, birds and small mammals • Remove compaction and improve soil structure; Increase soil biology; weed control	• RPS GAECs Detailed guidance • European Parliament 2024 • SAC 2024 • Farming for a better climate n.d.
GAEC 5 Minimum land management reflecting site specific conditions to limit erosion	• Protect soil against erosion	• RPS GAECs Detailed guidance
GAEC 6 Maintenance of soil organic matter	• Protect soil against erosion and limit further greenhouse gas emissions • Maintain water and air quality and support biodiversity in and above the soil	• RPS GAECs Detailed guidance • Scot Gov 2025
GAEC 7 Retention of landscape features	• Protect landscape features	• RPS GAECs Detailed guidance

[8] SMRs 5–9 and 11–13 are not considered to be directly environmentally focused and have therefore been excluded from the table.

	• nature conservation and mitigating against climate change & to protect birds and wildlife	• SFAS 2025
SMR 1 Nitrate Vulnerable Zones	• Reduce the pollution of waters caused by nitrates from agricultural sources and to prevent such pollution occurring in the future	• RPS GAECs Detailed guidance
SMR 2 Conservation of wild birds	• limit further greenhouse gas emissions (must not ploughing/reseeding rough grazing or other semi-natural areas; not draining wetlands; not removing/burning scrub and gorse; not carrying out muirburn outside the burning season	• RPS GAECs Detailed guidance
SMR 3 Conservation of flora and fauna	• Conservation of land designated as a Special Area of Conservation	• RPS GAECs Detailed guidance
SMR 4 Food and feed law	• Limit further greenhouse gas emissions by using feed additives correctly	• RPS GAECs Detailed guidance
SMR 10 Restrictions on the use of plant protection products	• Correct use of plant protection products to minimise their risk to humans, animals and the environment:	• RPS GAECs Detailed guidance

Appendix C Overview of GAEC Implementation in the EU: country-level practices and opportunities for Scotland

This table provides a *high-level* overview of EU GAECs that most closely align with the Scottish GAECs, highlights the countries implementing the highest number of farm practices under these standards, and presents a selected Member State (based on similarity to Scotland climate and agriculture) to illustrate key farm practices and potential opportunities relevant to Scotland.

GAEC	Associated/most closely related GAEC (EU)	Countries implementing the most farm practices under the GAEC	Country chosen for comparison	Farm Practices codes implemented - high level description of basic practices	Farm Practices codes implemented - high level description of more niche practices	Potential opportunities to investigate for Scotland
GAEC 1	GAEC 4 - Establishment of buffer strips along water courses	• Czech Republic • Denmark • Greece • France • Hungary • Italy • Luxembourg	Denmark	• Maintenance and conservation of unproductive buffer strips along water courses • Bans or restrictions of ploughing on limited areas of the arable field • Ban of plant protection products along water courses • Ban on fertilisation along water courses	• Ban of some crop species • Soil management	• Soil management • Bans or restrictions of ploughing on limited areas of the arable field • Ban of some crop species
GAEC 4	GAEC 6 - Minimum soil cover to avoid bare soil in	• Bulgaria • Germany • Croatia • The Netherlands	The Netherlands	• Intermediate cash crops • Catch crops • Crop residues left on soil, leaving stubbles on the field • Winter cover crop	• Ban of ploughing of grassland • Mulching • Summer cover crop	• Intermediate cash crops • Catch crops • Winter cover crop • Green cover on permanent crops

	periods that are most sensitive	• Slovakia.		• Green cover on permanent crops • Soil cover		• Soil cover • Ban of ploughing of grassland • Mulching • Summer cover crop
GAEC 5	GAEC 5 - Tillage management, reducing the risk of soil degradation and erosion, including consideration of the slope gradient	• Austria • Germany • Luxembourg	Luxembourg	• Maintenance and conservation of unproductive buffer strips along water courses • Terraces • Presence of landscape features • Other unproductive areas and strips (excluding fallows) • Low input systems • Low tillage • No tillage • Restriction on tillage (timing, direction in slopes...) • Tillage • Other practices to combat erosion • Soil management • Buffer strips against soil erosion	• Ban of ploughing of grassland • Grassland management • Grassland and grazing • Maintenance and conservation of terraces • Presence of other unproductive areas and strips • Machinery use	• Maintenance and conservation of unproductive buffer strips along water courses • Terraces • Presence of landscape features • Other unproductive areas and strips (excluding fallows) • Low input systems • Low tillage • No tillage • Restriction on tillage (timing, direction in slopes...) • Tillage • Other practices to combat erosion • Soil management • Buffer strips against soil erosion • Ban of ploughing of grassland

						• Grassland management • Maintenance and conservation of terraces • Presence of other unproductive areas and strips • Machinery use
GAEC 6	GAEC 2- Protection of wetland and peatland 1.	• Austria • Denmark • Greece • Sweden • Spain • Germany • Lithuania	Sweden	• Wetland maintenance and conservation • Peatland maintenance and conservation • Low tillage • Tillage • Soil management • Drainage restrictions	• Restriction on tillage (timing, direction in slopes.) • Crop residues left on soil, leaving stubbles on the field	• Crop residues left on soil, leaving stubbles on the field
	GAEC 3- Ban on burning arable stubble, except for plant health reasons	• Belgium (F) • Greece • Malta • Portugal	Belgium (F)	• No burning of crop residues	• Biodiversity plan	• Biodiversity plan
GAEC 7	GAEC 8- Minimum share of agricultural area devoted to non-productive areas or features	• Austria • Belgium (W) • Cyprus • Greece • Germany • France • Hungary • Italy	Belgium (W)	• Ban and restrictions of fertilisers on limited areas of the field other than along water courses • Mowing or grazing obligations on limited areas of the field other than along water courses • Maintenance and conservation of hedges/wooded strips	• Seeded areas/strips	• Mowing or grazing obligations on limited areas of the field other than along water courses • Maintenance and conservation of field margins • Maintenance and conservation of patches

		• Romania		• Maintenance and conservation of isolated trees • Maintenance and conservation of group of trees/field copses • Maintenance and conservation of trees in line • Maintenance and conservation of field margins • Maintenance and conservation of patches • Maintenance and conservation of unproductive buffer strips along water courses • Ponds • Small wetlands • Ditches • Streams • Stone walls • Terraces • Other landscape features • Seeded flower areas/strips • Strips for other aims • Other unproductive areas and strips (excluding fallows) • Landscape • Bans or restrictions on the use of plant protection products on limited areas of the field other than along water courses • Land laying fallow		• Maintenance and conservation of unproductive buffer strips along water courses • Other landscape features • Seeded flower areas/strips • Strips for other aims • Other unproductive areas and strips (excluding fallows) • Landscape • Land laying fallow • Cultivation of Nitrogen fixing/protein crops • Bans or restrictions of ploughing on limited areas of the arable field • Other bans or restrictions on limited areas of the field other than along watercourses • Other obligations on limited areas of the field other than along watercourses • Seeded areas/strips

				• Cultivation of Nitrogen fixing/protein crops • Bans or restrictions of ploughing on limited areas of the arable field • Restriction of timing of activities (seasonal or daily) for wildlife • Other bans or restrictions on limited areas of the field other than along watercourses • Other obligations on limited areas of the field other than along watercourses		
Other EU GAECs						
GAEC 1		• Czech Republic • Luxembourg • Denmark	Luxembourg	• Grassland management • No conversion of grassland into other uses	• No tillage	
GAEC 7	•	• Czech Republic • Germany • Spain • Ireland • Luxembourg • Poland • Portugal	Ireland	• Crop rotation • Intermediate cash crops • Catch crops	• Crop diversification	•
GAEC 9	•	• Czech Republic	Luxembourg	• Ban of ploughing of grassland	• Limitation in timing and other	•

		• France • Croatia • Luxembourg • Portugal		• No conversion of grassland into other uses • Interventions in Natura 2000 areas	limitations for plant protection products other than along water courses • Low tillage	

Appendix D List of organisations engaged in the workshops

The following organisations participated in the first workshop:

- NFU Scotland
- SAOS
- RSPB Scotland
- AHDB Scotland
- Nature Friendly Farming Network
- SAC Consulting
- Land Workers Alliance
- Rural Payments Agency England

The following organisations participated in the second workshop:

- Scottish Government
- Historic Environment Scotland
- SEPA
- RPID
- Crofting Commission
- Scottish Forestry
- NatureScot

Appendix E SWOT and PESTLE analysis for the 3 selected opportunities

8.1 Opportunity 1: Enhancement of buffer areas for nature and water pollution

8.1.1 Opportunity 1 - SWOT analysis

Strengths	Weaknesses
• **Supports Outcome 3 Climate change mitigation and adaptation**: Enhanced buffer areas can reduce nutrient and sediment losses during extreme rainfall events, supporting adaptation to climate change. Permanent vegetation within buffers may also provide modest carbon sequestration benefits and improve soil stability. • **Supports Outcome 4 Nature Restoration:** Wider and well-managed buffer areas can provide additional riparian habitat, contributing to biodiversity gains alongside improvements in water quality. • **Targeted design is supported by evidence-based improvements in protecting water against pollution:** Tailoring buffer width and management to soil type, slope and watercourse characteristics can improve pollutant interception compared with uniform minimum standards. • **Alignment with best practice:** Alignment with countries that apply wider and more differentiated buffer requirements supports cross border consistency with established best practice. • **Climate resilience & adaptation:** Permanently vegetated buffer strips can soil stability and may contribute to longer term soil carbon storage while improving resilience to extreme weather.	• **Increased management and compliance complexity for farmers:** Requirement expansion would likely add to the number of management rules farmers must consider, increasing the complexity of day-to-day compliance and recordkeeping. • **Cognitive burden:** Differentiated buffer widths or conditions based on location, soil or watercourse type may increase the cognitive burden on farmers, particularly where rules vary within a single holding. • **Knowledge gaps may require significant advisory support and training:** Implementing more targeted buffer designs may highlight knowledge gaps around soil, hydrology, and best practice, increasing demand for advisory support and training. • **Monitoring burden:** More variable or site-specific requirements could increase the complexity of monitoring and enforcement for regulators, particularly where buffer standards differ across holdings. • **Uneven impacts on smaller holdings with water courses:** Smaller holdings or crofts with a high proportion of land adjacent to watercourses may experience disproportionate impacts from wider buffer requirements compared with larger farms.

	• **Alignment with existing statutory requirements**: Many buffer distances are set within existing legislation, meaning current rules must at least meet statutory minima and revisions are likely to focus on maintaining consistency with existing legal requirements.
Opportunities	Threats
• **Alignment with future environmental goals:** Enhancing buffer areas could align with future longer term environmental and climate objectives by supporting integrated approaches to water quality, biodiversity, and climate resilience. • **Positive public perception and market benefits:** Visible action to protect watercourses and nature may positively influence public perception of farming and support market, or assurance scheme benefits linked to environmental performance. • **Stacked environmental benefits i.e. beyond protecting water against pollution:** Beyond reducing water pollution, enhanced buffer zones can deliver multiple co-benefits such as carbon sequestration, biodiversity gains and improvements in soil organic matter.-benefits such as carbon sequestration, biodiversity gains and improvements in soil organic matter. • **Innovation and research funding to identify how to maximise the benefits:** Support targeted innovation and research funding, including pilot projects or academic partnerships, to identify how buffer design and management can maximise environmental benefits. • **Adopt proven models:** Drawing on existing approaches implemented in other countries allows Scotland to adopt proven models and lessons learned rather than developing measures from scratch.	• **Farmer resistance (cost, complexity, maintenance and land loss)**: Enhanced buffer requirements may face resistance from farmers if perceived as increasing costs, management complexity, maintenance obligations, or loss of productive land. • **Policy uncertainty**: Ongoing policy reform creates uncertainty over whether Cross Compliance will be retained in the long term, potentially limiting confidence in investing in enhanced requirements. • **Enforcement challenges:** More complex rules may make it harder to demonstrate non-compliance consistently and to apply penalties fairly and proportionately. • **Budget constraints for advisory and monitoring services:** Additional advisory, mapping and monitoring requirements may place pressure on public budgets and delivery bodies, particularly in the context of wider resource constraints. • **Non-compliance:** Increased rule complexity may raise the risk of unintentional non-compliance • **Stakeholder pushback and loss of trust:** If perceived as costly, impractical or disproportionately affecting smaller businesses, enhanced requirements may generate stakeholder resistance and reduce trust in future reforms.

• **Demonstration of leadership on environmental protection:** Strengthening buffer requirements would demonstrate leadership in environmental protection by going beyond minimum standards while building on measures that are already well understood. • **Opportunity to refine requirements to suit locally specific physical conditions:** Refine buffer and management requirements to better reflect local physical conditions, such as soil type, slope, hydrology, and watercourse characteristics, improving effectiveness and proportionality. • **Allow direct drilling into Buffers to establish more deep routed plants:** Allowing direct drilling within buffer areas could support the establishment of deeper rooted plant species, enhancing soil structure, water infiltration, and long-term nutrient interception without additional soil disturbance. • **Opportunity to introduced infield measures / buffers to address soil erosion:** Infield measures or buffers could be used alongside watercourse buffers to target erosion hotspots within fields, providing additional flexibility to address soil loss at source rather than relying solely on edge of field controls.	• **Perception of competitive disadvantage with overseas markets:** Stronger environmental requirements may be perceived as placing domestic producers at a competitive disadvantage compared with overseas markets operating under less stringent standards. • **Misalignment with EU following future changes:** Future changes to EU conditionality or related legislation could create divergence or misalignment, requiring further revisions to maintain consistency or comparability. • **Categorisation of water courses:** farmers will need clear and consistently applied definitions of which watercourses are in scope to avoid confusion and implementation challenges • **Requirement for additional risk mapping:** Enhanced or targeted buffer requirements may necessitate further risk mapping or spatial data to clearly demonstrate compliance • **Reduction of productive land area:** Widening buffer strips may reduce the area of productive land available for in-field soil health improvement activities, potentially limiting farmers' ability to implement other beneficial practices within cropped fields. • **Risk to small crofts and field viability**: On small crofts or fields, wide buffer requirements could render some parcels impractical to manage, increasing the risk of land abandonment and a reduction in active land management.

8.1.2
8.1.3

8.1.4
8.1.5 Opportunity 1 – PESTLE analysis

Political	Economic

• **Alignment with current EU rules:** Aligning enhanced buffer requirements with existing EU GAEC standards supports policy coherence and helps maintain consistency. However, there is a risk of future misalignment with the EU and risk of competitive disadvantage. Future changes to EU conditionality or environmental legislation could result in misalignment, potentially creating a perceived or actual competitive disadvantage for Scottish producers over time.
  • **Policy delays:** Further policy development, consultation, or alignment with wider agricultural reforms may delay implementation.
	• **Increased costs for farmers**: land loss, maintenance- Enhanced buffer requirements may result in direct costs for farmers through loss of productive land and ongoing management and maintenance of buffer areas
	• **Long term economic benefits from reduced pollution and damage:** Improved buffer areas may deliver long term economic benefits through reduced water treatment costs, lower soil loss, and decreased flood damage to infrastructure and farmland.
	  • **Cost for government:** Enhanced requirements could increase costs for government, including the provision of advisory services, monitoring and enforcement, data management, and administrative oversight.
	  • **Concerns about fairness across farm types and locations:** Costs and impacts may vary between upland and lowland areas, farm sizes, and farming systems, raising concerns about fairness and proportionality if measures are applied uniformly.

Social	**Technological**
• **Public expectation for stronger environmental standards**: There is growing public expectation for farming to deliver stronger environmental standards • **Positive perception of farming as environmentally responsible:** Well-designed buffer areas can enhance the visual landscape and biodiversity, supporting a more positive public perception of farming as environmentally responsible	• **Opportunity for precision mapping and remote sensing:** Advances in precision mapping and remote sensing could support more accurate identification of watercourses, buffer requirements and higher risk areas, improving targeting and compliance. • **Opportunity for digital advisory and monitoring tools:** Precision mapping and remote sensing could support more

• **Possible farmer resistance:** More complex or costly requirements may generate resistance among farmers, particularly where impacts on profitability or land use are perceived as significant. • **Concerns about fairness (practicality in upland vs lowland areas):** Differences in practicality between upland and lowland areas may raise social concerns about fairness if requirements are not sufficiently flexible or context specific • **Ongoing croft abandonment linked to economic viability**: There is an existing trend of croft abandonment where agricultural income is insufficient to cover costs, and additional land use restrictions could exacerbate this issue.	accurate identification of watercourses, buffer requirements and higher risk areas, improving targeting and compliance. • **Improved fertiliser spreading accuracy:** Advances in fertiliser spreading technology can improve application accuracy • **Use of satellite tracking collars to manage grazing pressure:** The use of satellite tracking collars on cattle can control grazing to avoid sensitive areas such as water margins and historic sites.
Legal	Environmental
• **Enforcement challenges:** Legally robust enforcement may be challenging where buffer requirements are complex. • **Risk of disputes over interpretation of rules:** Unclear or ambiguous legal wording could lead to disputes overrule interpretation • **Requirement for clear, context specific rules and definitions:** From a legal perspective, clear and precise definitions of buffer width, species composition, and management requirements are essential to ensure enforceability and legal certainty •	• **Improved water quality (zones and strips), soil quality and biodiversity (strips):** Enhanced buffer zones and strips can improve water quality by reducing nutrient and sediment runoff, while also supporting soil condition and increasing on-farm biodiversity. • **Climate adaptation:** Vegetated buffer strips can help slow overland flow, reduce soil erosion, and contribute to reduced flood risk under extreme rainfall events. • **Climate mitigation:** Permanent vegetation within buffer strips can contribute to climate mitigation through soil carbon sequestration, alongside associated benefits for soil and water quality. • **Habitat connectivity:** Buffer strips can act as linear habitats, improving connectivity between fragmented habitats and supporting wider ecological networks.

	• **Potential for invasive species:** If poorly managed, buffer areas may create conditions that allow invasive or undesirable species to establish and spread. • **Increased runoff risk under a changing climate:** Changing climate, with heavier rainstorms may increase the risk of run off - stakeholders suggest buffers should be mandatory against all watercourses to intercept soil

8.2 Opportunity 2: Extension of management requirements to reduce erosion risk

8.2.1 Opportunity 2 - SWOT analysis

Strengths	Weaknesses
• **Supports Outcome 3 Climate change mitigation and adaptation:** Restrictions on tillage in erosion-prone areas can reduce soil loss and sediment runoff during extreme weather events, supporting both climate mitigation and adaptation objectives. • **Prohibiting tillage during high-risk times of year and on high-risk land is supported by evidence:** limiting tillage on steep slopes and during high-risk periods reduces soil erosion, sediment transport and associated impacts on water quality. • **Supports climate resilience & adaptation:** Reducing erosion through targeted land management can improve soil structure and infiltration, helping to moderate runoff and reduce downstream flood risk.	• **Increased compliance complexity for famers:** Extending management requirements may increase compliance complexity for farmers, particularly where rules differ by land type, slope, or time of year. • **Cognitive burden:** Seasonal restrictions and spatially targeted rules could increase the cognitive burden on farmers, especially on holdings with varied topography or land use. • **Knowledge gaps may require significant advisory support and training:** Introducing new or expanded erosion controls may highlight knowledge gaps around slope thresholds, soil erosion risk, and appropriate mitigation measures, increasing the need for advisory support and training. • **Monitoring burden:** More differentiated erosion controls may increase monitoring and enforcement requirements, particularly where compliance depends on timing, slope measurements or site-specific conditions. • **Risk of overly prescriptive rules given variable local conditions**: It is a difficult GAEC to change as circumstances can vary significantly - Examples are of large fields with slope exposed to wind and erosion - overly prescriptive rules may fail to address the most significant real world erosion risks. • Mismatch between Rural Payments & Inspections Division (RPID) and SEPA classification of non-compliance: Differences in how

	RPID and SEPA classify breaches or non-compliance may create confusion
Opportunities	Threats
• **Alignment with future environmental goals:** Strengthening erosion related management requirements supports longer term environmental goals by integrating soil protection, climate resilience, and water quality objectives. • **Positive public perception and market benefits:** Clear action to reduce erosion and protect soils may strengthen public confidence in sustainable land management and support market or assurance scheme expectations. • **Stacked environmental benefits i.e. beyond protecting soil from erosion:** In addition to reducing erosion, targeted land management can improve soil structure, support biodiversity, enhance water quality, and contribute to flood risk reduction. • **Innovation potential:** Extending erosion controls could encourage the uptake of innovative approaches such as precision grazing or virtual fencing • **Evidence based development using farm level data:** Evidence-based development using data/examples of common issues found during farm visits • **Targeted approach rather than a one size fits all model:** A targeted approach allows erosion measures to focus on higher risk fields or areas, improving effectiveness and proportionality across different farm and croft systems. • **Opportunity to address in-field soil erosion:** Opportunity to tackle in-field soil erosion, which is recognised as a significant and widespread issue in parts of Scotland.	• **Farmer resistance due to increased regulatory complexity, and reduced flexibility to manage land as see fit:** Additional or more restrictive erosion controls may face resistance from farmers if they reduce flexibility to manage land in response to local conditions. • **Policy uncertainty:** Uncertainty around future agricultural policy and the long-term role of Cross Compliance may reduce confidence in implementing enhanced requirements. • **Enforcement challenges:** Where erosion rules are highly site specific or time limited, demonstrating noncompliance and applying proportionate penalties could present enforcement challenges. • **Budget constraints for advisory and monitoring services:** Expanded erosion management requirements may increase demand for advisory support, monitoring, and administration • **Non-compliance:** Greater complexity in erosion related rules may increase the likelihood of unintentional noncompliance. • **Stakeholder pushback and loss of trust:** If requirements are perceived as overly restrictive, there is a risk of stakeholder pushback that could undermine trust in future agricultural policy reforms. • **Perception of competitive disadvantage:** Stronger erosion control requirements may be perceived as placing Scottish producers at a competitive disadvantage relative to producers operating under less stringent regimes.

• **Inclusion of protection of scheduled monuments:** Including scheduled monuments within areas where erosion should be avoided would support alignment with Historic Environment Policy for Scotland and help protect cultural assets at risk from soil loss. • **Strengthen restrictions on steep ground adjacent to watercourses:** Further restrictions on working or ploughing steep ground near watercourses could reduce erosion and sediment delivery to water, particularly during high-risk periods. • **Measures to minimise bare soil over winter**: Promoting practices that minimise bare soil over winter targets one of the periods when erosion risk is highest, particularly under wetter and more variable weather conditions. • **Improved tramline management:** Better tramline management offers a practical way to reduce runoff pathways and soil erosion • **Promoting good practice rather than solely prohibitive rules:** Opportunity to promote good practice rather than just a solely restrictive set of requirements	• **May require risk map:** Implementing slope-based tillage restrictions may require detailed risk mapping to identify relevant slope thresholds

8.2.2 Opportunity 2 - PESTLE analysis

Political	Economic
• **Alignment with current EU rules:** Aligning enhanced buffer requirements with existing EU GAEC standards supports policy coherence and helps maintain consistency. However, there is a risk of future misalignment with the EU and risk of competitive disadvantage. Future changes to EU conditionality or environmental legislation could result in	• **Long term economic benefit from reduced soil loss and improved soil fertility:** Reducing erosion through targeted management can deliver long term economic benefits by maintaining soil fertility, sustaining productivity, and reducing the need for inputs or remediation. • **Cost for government:** Implementing enhanced erosion controls may increase costs for government, including

<table>
<tr><td>misalignment, potentially creating a perceived or actual competitive disadvantage for Scottish producers over time.
• Policy delays: Further policy development, consultation, or alignment with wider agricultural reform processes may delay implementation</td><td>expenditure on advisory services, monitoring and administration.
• Additional costs to farmers: Strengthened erosion management requirements may result in additional costs for farmers, such as installing or maintaining fencing to control livestock access to erosion prone or sensitive areas.</td></tr>
<tr><td>Social</td><td>Technological</td></tr>
<tr><td>• Public expectation for stronger environmental standards: There is increasing public expectation for farming to deliver stronger environmental standards, including sustainable food production and improved protection of soils.
• Positive perception of farming as environmentally responsible (soil protection): Visible action to prevent soil erosion can reinforce a positive public perception of farming as environmentally responsible and committed to long term land stewardship.
• Possible farmer resistance due to complexity: More complex or site-specific erosion requirements may lead to resistance from some farmers, particularly where rules are perceived as difficult to understand or implement.</td><td>• Opportunity for digital advisory and remote monitoring tools: Digital advisory platforms and remote monitoring tools could support farmers in understanding site specific erosion requirements and help streamline compliance and monitoring.
• Use of soil monitoring technologies to monitor erosion risk: Soil monitoring technologies, such as sensors could help identify and monitor areas at higher erosion risk and support more targeted land management decisions.</td></tr>
<tr><td>Legal</td><td>Environmental</td></tr>
<tr><td>• Enforcement challenges: Legally robust enforcement may be difficult where erosion related requirements are highly site specific or conditional, increasing the risk of inconsistent compliance decisions.
• Risk of disputes over interpretation of rules: Ambiguity in how erosion controls are interpreted (e.g. slope thresholds or</td><td>• Improved water and soil quality: Reducing soil erosion through targeted land management can improve both soil condition and water quality by limiting sediment and nutrient runoff into watercourses.
• Climate adaptation: Improved soil structure and ground cover can increase resilience to heavier rainfall, flooding and periods of drought by enhancing infiltration and water retention.</td></tr>
</table>

management obligations) could lead to disputes, appeals, or challenges. • **Requirement for clear, context specific rules and definitions:** Clear legal definitions of erosion risk, including how thresholds are defined and applied in different landscapes, will be essential to ensure certainty, enforceability, and fairness.	• **Climate mitigation:** Reduced disturbance of soils in erosion prone areas can support soil carbon retention while delivering co-benefits for soil and water quality. • **Soil habitat enhancement:** Protecting soils from erosion helps maintain soil biological activity and structure, supporting healthier soil habitats and ecosystem function.

8.3 Opportunity 3: Incorporation of hedgerow maintenance requirements

8.3.1 Opportunity 3 - SWOT analysis

Strengths	Weaknesses

• **Supports Outcome 3 Climate change mitigation and adaptation:** Well-maintained hedgerows can contribute to climate mitigation through carbon storage and support adaptation by reducing wind exposure, runoff and soil loss.
  • **Supports Outcome 4 Nature Restoration:** Enhanced hedgerow maintenance supports nature restoration by improving habitat quality, connectivity and species diversity across agricultural landscapes.
  • **Supports Outcome 1 High quality food production (includes animal health and welfare):** Hedgerows provide shelter for livestock, helping to reduce weather stress and support animal health and welfare**.**
• **Hedgerow maintenance is supported by evidence-based improvements to protect the landscape feature:** Evidence shows that active hedgerow management, including appropriate cutting regimes and species composition, improves hedgerow condition and long-term landscape function.
• **Alignment with best practice:** Aligning hedgerow maintenance requirements with approaches used in other EU countries supports cross border consistency and reflects established best practice beyond minimum baseline standards.
	• **Increased management and compliance complexity for farmers:** Introducing hedgerow maintenance requirements may increase management and compliance complexity for farmers.
	• **Knowledge gaps may require significant advisory support and training:** More detailed hedgerow management standards may highlight knowledge gaps around appropriate cutting regimes, species composition, and invasive species control, increasing the need for advisory support and training.
	• **Monitoring burden:** Moving from passive protection to active hedgerow maintenance may increase monitoring and enforcement demands, particularly where compliance depends on management timing or hedgerow condition.
	• **Difficulty prescribing active maintenance rules across diverse hedgerow contexts:** Prescribing active hedgerow maintenance rules is challenging due to the wide variation in hedgerow type, age, condition and location
	• **Opportunity to include cutting date restrictions to protect birds:** Including clearer hedgerow cutting date restrictions within GAEC 7 could strengthen protection for nesting and breeding birds

Opportunities	Threats

• **Alignment with environmental goals-** Strengthening hedgerow maintenance requirements supports future wider environmental goals by contributing to climate action, nature restoration, and landscape resilience.
• **Positive public perception and market benefits:** Well-maintained hedgerows provide visible evidence of environmental stewardship, which may support positive public perception and market or assurance scheme expectations.
  • **Stacked environmental benefits:** In addition to protecting hedgerows themselves, improved management can deliver co-benefits such as carbon sequestration, biodiversity enhancement, air quality improvements, and reduced flood risk.
  • **Digital tools (e.g. remote sensing and mapping) to reduce inspection costs:** Remote sensing, mapping and digital tools could be used to support monitoring of hedgerow condition and management, potentially reducing inspection costs and administrative burden.
	• **Farmer resistance:** More detailed hedgerow maintenance requirements may face resistance from farmers if they are perceived to increase management complexity, costs, or ongoing time commitments.
	• **Policy uncertainty:** Uncertainty over the long-term role of Cross Compliance may reduce confidence in introducing enhanced hedgerow maintenance requirements.
	  • **Enforcement challenges:** Active management standards may make it more difficult to demonstrate non-compliance objectively and to apply penalties consistently and proportionately.
	  • **Budget constraints for advisory and monitoring services:** Implementing and supporting enhanced hedgerow maintenance may place additional demands on advisory, monitoring and enforcement resources, within existing budget constraints.
	  • **Non-compliance:** Increased complexity around hedgerow management rules may raise the risk of unintentional non-compliance.
	  • **Additional complexity in definitions and scope:** Further clarity would be required on hedgerow definitions, including what constitutes a hedge and how native or invasive species are classified, to avoid inconsistency and dispute.

8.3.2 Opportunity 3 - PESTLE analysis

Political	Economic

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- **Alignment with current EU rules:** Aligning enhanced buffer requirements with existing EU GAEC standards supports policy coherence and helps maintain consistency. However, there is a risk of future misalignment with the EU and risk of competitive disadvantage. Future changes to EU conditionality or environmental legislation could result in misalignment, potentially creating a perceived or actual competitive disadvantage for Scottish producers over time.
- **Policy delays:** Further policy development, consultation, or alignment with wider agricultural and environmental reforms may delay implementation.

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- **Costs for farmers:** Introducing active hedgerow maintenance standards may create direct costs for farmers, including gap filling, replanting, and ongoing management.
- **Long term economic benefit:** Well-maintained hedgerows can deliver long term economic benefits by helping reduce soil and wind erosion, supporting natural pest control, and protecting wider farm productivity.
- **Cost for government:** Enhanced hedgerow maintenance requirements may increase public sector costs associated with advisory support, monitoring, administration, and enforcement.

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<tr><td>Social</td><td>Technological</td></tr>
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- **Public expectation for stronger environmental standards:** There is growing public expectation for attractive, well maintained rural landscapes that reflect stronger environmental standards and stewardship.
  - **Positive perception of farming as a steward of heritage, biodiversity and livestock welfare:** Active hedgerow maintenance can reinforce positive public perceptions of farming as a custodian of cultural heritage, biodiversity and livestock welfare.
  - **Possible farmer resistance due to added workload:** Additional hedgerow maintenance requirements may lead to resistance among some farmers if they increase workload or ongoing management demands.

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- **Opportunity for digital advisory and remote monitoring tools:** Digital advisory platforms and remote monitoring tools could support farmers in understanding hedgerow maintenance requirements.
- **Use of remote sensing and drones to monitor hedge condition and gaps:** Remote sensing and drone technologies could be used to identify hedgerow condition, gaps, and discontinuities.

</td></tr>
<tr><td>Legal</td><td>Environmental</td></tr>
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• **Enforcement challenges:** Enforcing hedgerow maintenance requirements may be legally challenging where standards are qualitative or condition based, increasing the risk of inconsistent compliance decisions. • **Risk of disputes over interpretation of rules and maintenance standards:** Variation in how hedgerow condition or maintenance standards are interpreted could lead to disputes, appeals, or legal challenge. • **Requirement for clear, context specific rules and definitions:** Clear legal definitions of what constitutes a hedgerow, acceptable maintenance activities, permitted gap sizes, and native or invasive species will be essential to ensure enforceability, consistency, and legal certainty.	• **Improved water and soil quality (erosion control):** Well-maintained hedgerows can help reduce soil and surface runoff, supporting improved soil condition and protecting water quality by limiting sediment and nutrient losses. • **Biodiversity support:** Active hedgerow management can enhance habitat quality for a wide range of species, supporting farmland biodiversity. • **Climate adaptation:** Hedgerows can improve climate resilience by reducing wind exposure, moderating microclimates, and helping manage runoff during heavy rainfall and periods of heat stress. • **Climate mitigation**: Healthy hedgerows contribute to climate mitigation through carbon storage in woody biomass and soils, alongside associated improvements in soil and water quality. • **Habitat connectivity:** Linear hedgerow networks provide important habitat corridors that support species movement and connectivity, particularly for birds, pollinators and other wildlife. • **Potential for invasive species if poorly managed/ non-compliance:** If maintenance is poorly implemented or compliance is low, hedgerows may create opportunities for invasive or undesirable species to establish and spread.

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