TRADE POLICIES AND EMISSIONS REDUCTION: ESTABLISHING AND ASSESSING OPTIONS

Agriculture and deforestation

Progress report for Climate Change Committee

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1. INTRODUCTION

1.1. BACKGROUND

The Climate Change Committee (CCC) provides recommendations to the UK government on policies to enable decarbonisation, including trade policy. The CCC's June 2022 Progress Report will provide further recommendations to the UK government on trade policies in the areas of agriculture, land use and forestry.

1.2. AGRICULTURE AND LAND USE

Agriculture, Forestry and Other Land Use (AFOLU) activities account for 23% of total net anthropogenic emissions of greenhouse gases (GHGs) globally each year[1]. In the UK 15% of emissions are from food consumption and approximately half of this comes from imports. Without robust measures to address embedded carbon in imported agricultural products, emissions from global agriculture are likely to increase. Measures to further constrain emissions are therefore a high priority globally, for which both regulatory and voluntary policy options such as labelling, assurance and due diligence schemes are important options.

However, reducing carbon emissions from domestic production can lead to "carbon leakage". Carbon leakage can occur if the competitiveness impacts that arise from carbon policies leads to emissions reduction from domestic producers combined with increases in emissions in other jurisdictions where carbon policy is either less ambitious or does not exist[2]. This can lead to a net increase in global emissions.

The introduction of Environmental Land Management (ELM) schemes in place of the previous EU Common Agriculture Policy (CAP) regime in England, proposed Sustainable Farming Scheme in Wales, and CAP replacements under consideration in Scotland and Northern Ireland are likely to result in an uptick of land allocated to environmental services instead of purely agricultural production. If UK production falls or becomes less competitive with imports as a result, and if the UK's consumption of food remains the same, then the concern arises that environmental harms relating to the agricultural industry may be outsourced overseas. In the context of GHG emissions, this is carbon leakage. If, on the other hand, UK consumption of higher emission foods such as meat and dairy fell due to a mix of dietary change and reduced food waste at the same time as the implementation of ELM, as recommended in the CCC's 2020 Land Use Report[3], there may be fewer associated emissions elsewhere.

Agriculture's carbon footprint is affected by the inputs consumed as well as production itself. These include animal feed, fuels, agrochemicals and inorganic fertiliser. Of particular relevance to this study is the consumption of fertilisers, the production and transportation of fertilisers is associated with substantial GHG emissions.

1.3. FORESTRY

At COP26, more than 100 world leaders representing 85% of the world's forests promised to end and reverse deforestation by 2030[4]. The initiative is also backed by $20 billion in public and private finance over five years and support for wider supply chain reforms towards sustainable commodity trade[4].

Shortly after COP26, the Environment Act 2021[5] passed into UK law. The Act addresses UK-driven deforestation overseas by prohibiting larger UK businesses from using commodities associated with wide-scale deforestation and produced on land illegally occupied or used. Businesses in scope will be required to undertake a due diligence exercise on their supply chains and to report on this exercise annually. Businesses in scope that do not comply may be subject to fines and other civil sanctions. Secondary legislation is required

[1] IPCC, 2019, Summary for Policymakers. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems, available from: https://www.ipcc.ch/srccl/chapter/summary-for-policymakers/

[2]CCC, 2020, Industrial Decarbonisation: Net Zero Carbon Policies to Mitigate Carbon Leakage and Competitiveness Impacts, available from: https://www.theccc.org.uk/wp-content/uploads/2020/12/Energy-Systems-Catapult-Industrial-Decarbonisation-and-Mitigating-Carbon-Leakage.pdf

CCC, 2020, Land Use: Policies for Net Zero, available from: https://www.theccc.org.uk/publication/land-use-policies-for-a-net-zero-uk/

[3] CCC, 2020, Land Use: Policies for Net Zero, available from: https://www.theccc.org.uk/publication/land-use-policies-for-a-net-zero-uk/

[4] CCC, 2021, COP26: Key outcomes and next steps for the UK, available from: https://www.theccc.org.uk/publication/cop26-key-outcomes-and-next-steps-for-the-uk/

[5] https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

to implement the due diligence provisions. A public consultation sought views on some of the key areas that will be included within the secondary legislation. The consultation closed in March 2022. The UK is also recommended to explore further measures to strengthen the impacts on mitigating deforestation[4].

In November, the EU published its proposal for a regulation on deforestation-free products[6] which introduces mandatory due diligence rules on companies to ensure that only compliant commodities and products enter the EU market, together with benchmarking. The lessons learnt from the EU proposal and the study that supported it are of relevance to the UK policy development.

It is noteworthy that similar initiatives exist on the corporate level. For instance, the Taskforce on Nature-related Financial Disclosures (TNFD) published the Finance Sector Roadmap: Eliminating Commodity-Driven Deforestation which applies globally[7]. The roadmap aims to provide a broad range of financial institutions with guidance on eliminating deforestation, land conversion, and associated human rights abuses from their portfolios, with a target date of 2025. In the UK, the proposed UK Sustainable Disclosure Requirements (SDR)[8] intend to provide an industry-wide standard for key sustainability-related information. The SDR sets out two tiers of proposed disclosures which build upon the FCA's climate-related disclosure requirements, including the impact firms and investment products are having on the environment and society.

1.4. OBJECTIVES OF THE STUDY

This study aims to increase the Committee's understanding of the trade policy options available to:

- Reduce emissions, improve sustainability practices and reduce the risk of carbon leakage in the UK agriculture sector.
- Halt UK-driven deforestation.

To meet these objectives, the following tasks are undertaken[9]:

- Task E: Identify and set out an assessment of relevant policy options that could reduce agriculture consumption emissions and encourage sustainable practices in the UK land sector.
- Task F: Set out an assessment of policy options to support the COP26 agreement to halt deforestation by tackling UK demand for products from deforestation.

Chapter 3 presents the findings on task E, and Chapter 4 presents the findings on task F.

2. METHODOLOGY

The methodology of this study is based on a literature review and expert contributions. The following sub-sections outline the steps taken in each task.

2.1. OPTIONS FOR AGRICULTURE

2.1.1. Selection of options

We conducted a rapid review of recent literature to understand the most up to date recommendations on limiting carbon leakage from agricultural products and inputs, to ensure the work focused on pressing issues. This included the review by the OECD, resources from the Global Resource Initiative (GRI) and Trade and Agriculture Commissions' available reports. This was supported by detailed expert opinions from the project team. The policy tools collected were compared with the team working on task A to ensure consistency and similar terminology where possible. We used the term 'policy tools' to reflect the inclusion of both voluntary and regulatory mechanisms. Voluntary and/or private mechanisms such as labelling are an existing feature of agricultural and consumer policy. The team working on task A concentrated on regulatory mechanisms. The final list included the following core options:

[6] https://ec.europa.eu/environment/publications/proposal-regulation-deforestation-free-products_en

[7] https://tnfd.global/resource/finance-sector-roadmap-eliminating-commodity-driven-deforestation/

[8] https://www.fca.org.uk/publication/discussion/dp21-4.pdf

[9] This work forms part of a wider CCC study programme and we have maintained the labelling of the original tasks. Tasks A-D are delivered by the University of Sussex.

- Price-based mechanisms, such as carbon border adjustment mechanisms (CBAMs), consumer and producer carbon tax, emissions trading schemes;
- Tariff-based mechanisms and core environmental standards applying to imports and product bans;
- Promoting sustainable choices such as standards and disclosure-based labelling, promoting sustainable choices;
- Due diligence and procurement policy.

Additional options which we considered important to consider but are either partially overlapping with the core options, or less impactful include:

- Financial Aid, such as domestic subsidies, foreign investment;
- Establishing robust standards and reporting systems (domestic standards, frameworks and benchmarks);

The latter group have been analysed in less detail.

2.1.2. Feasibility and policy assessment

The first step was to assess the **feasibility of the options**. This is related to:

- Legality – Assessing the fit with existing international treaties (WTO/GATT)/bilateral trade agreements being agreed post-Brexit;
- Data sources and assumptions – Identification of data sources and assumptions required to implement the policy;
- Documentation, verification and validation – Documentation and verification ensure that the implementation and impact of the options can be monitored, and provide transparency;
- Implications for UK farm production – Assessment of impacts on domestic production.

After this, we conducted a **policy assessment** to understand the potential of the option to manage carbon leakage and its overall ambition level. Factors considered included:

- Product scope – Identification of which agricultural products can be included in the scope of the option
- Level of ambition regarding carbon leakage and wider environmental impacts – Assessment of the potential, best case scenario effectiveness of the policy on carbon leakage and other environmental impacts
- Realistic expectation – Identifying the realistic expectations for the effectiveness of the policy on carbon leakage and other environmental impacts, concerning the key difficulties and risks.
- Implementation time – Providing insights as to the time needed for the policy to be rolled out.
- Cost burden – Assessing who will bear the cost of the policy.

2.2. OPTIONS FOR DEFORESTATION

The assessment of additional measures to address deforestation associated with UK trade was conducted in three steps, as follows.

2.2.1. Identification of key commodities and exporting countries

The first step was to conduct a literature review and analyse existing data to understand:

- Which are the key commodities that the UK imports that pose a risk of deforestation overseas?
- Which are the key exporting countries where the deforestation risk occurs?

We reviewed three key sources for this task. These include two reports by WWF and RSPB (2017, 2020)[10] which summarises the UK's land footprint for seven commodities in the 2011-2015 and 2016-2018 periods,

[10] WWF and RSPB (2020) Riskier business, Available from: https://www.3keel.com/wp-content/uploads/2020/08/RiskierBusiness_July2020_V7_0.pdf
WWF and RSPB (2017) Risky business, Available from: https://www.wwf.org.uk/sites/default/files/2017-10/WWF%20and%20RSPB%20-%20Risky%20Business%20Report%20-%20October%202017.pdf

and a dataset by Pendrill et al (2020)[11] which uses a land-balance model to attribute deforestation across 135 countries in the tropics to the expansion of cropland, pastures and forest plantation and the commodities produced on this land, and to trace these commodities to consumption using a physical trade model.

2.2.2. Review of existing measures, and their strengths and weaknesses

The next step was to review existing measures in the UK and assess their strengths and weaknesses. The measures we assessed include:

- Due diligence, as defined under the Environment Bill 2021
- The G7 2030 Nature Compact
- The Forestry, Agriculture, Commodity and Trade (FACT) Dialogue
- Voluntary certification schemes and standards

2.2.3. Selection and assessment of additional options

The final step was to select and assess additional options which can supplement the current UK context and help mitigate deforestation associated with UK trade. The options we considered include:

- Tackling imports by introducing 'zero-deforestation' pledges
- Maximising alternative sources e.g. recycling
- Promoting sustainable choices
- The role of standards and certification schemes
- Measures to increase and capture forest rent
- Direct regulation of land use
- Benchmarking system
- Sustainable import guarantee

We reviewed literature sources, and together with expert judgement, we assessed their feasibility and effectiveness qualitatively.

3. AN ASSESSMENT OF POLICY OPTIONS AIMED AT REDUCING AGRICULTURE CONSUMPTION EMISSIONS AND ENCOURAGING SUSTAINABLE PRACTICES

3.1. SUMMARY OF FEASIBILITY AND EFFECTIVENESS

The feasibility and policy effectiveness assessments of the policy options outlined in section 2.1.1 are presented in Table 1 and Table 2 respectively below. All the policies mentioned are complex and the assessments vary between products. The Red-Amber-Green (RAG) rating is included to help compare the policy tools available for limiting carbon leakage from agricultural products but is intended to be used with the text in section 3.2 to fully understand the ratings given. For example, understanding a "medium" rating for legality requires the context of likely WTO challenges for different types of products.

Section 3.2 analyses the first four policy options in more detail, while a brief overview is given of other policies that are not strictly trade-related but act as enablers to the trade-related measures.

[11] Pendrill et al, 2020, Deforestation risk embodied in production and consumption of agricultural and forestry commodities 2005-2017, Available from: https://zenodo.org/record/4250532#.Yj4WserP2Ul

Table 1: Feasibility overview

Policy tools	Legality	Data sources & assumptions	Documentation, verification & validation	UK farm production implications
CBAM	Medium	Medium	Medium	High
ETS	Medium	Medium	Medium	High
Carbon tax	Medium	Medium	Medium	High
Consumer tax	Low	Low	Low	High
Tariff reduction/ bands	High	Low	Low	Medium
Products bans or CES	Medium	Low	Low	Medium
Consumer engagement	High	Medium	Medium	Medium
Due diligence	High	Medium	Medium	Medium
Procurement strategies	High	High	Medium	Medium
Financial Aid	High	High	Medium	Medium
Standards and reporting	High	High	High	Medium

Table 2: Effectiveness overview

Policy tools	Level of ambition	Realistic expectation	Environmental scope	Product scope	Implementation time	Cost burden
CBAM	High	Low	Low	Low	Medium	Producers and importers. May trickle down to consumers.
ETS	High	Low	Low	Low	Medium	Producers and importers. May trickle down to consumers.
Carbon tax	High	Low	Low	Low	Medium	Producers and importers. May trickle down to consumers.
Consumer tax	High	Low	Low	Low	Medium	Producers and importers. May trickle down to consumers.
Tariff reduction/ bands	High	Medium	High	Medium	Short	Producers overseas would cover th e cost. The cost of some imports might rise if production methods changed.
Products bans or CES	High	Medium	High	Medium	Medium	Producers overseas would cover the cost. The cost of some imports might rise if production methods changed.
Consumer engagement	Medium	Medium	High	Medium	Short	Producers, importers, the UK government, and taxpayers
Due diligence	High	Medium	High	Medium	Medium	Producers (to align their products with the due diligence) and importers (to set up due diligence systems). Costs can trickle down to the consumers. The impact on smaller producers and importers will be disproportionately larger.
Procurement strategy	Medium	Medium	High	Medium	Short	UK government and taxpayers, with producers bearing some costs if they choose to change production methods
Financial Aid	Medium	Medium	Medium	Medium	Medium	UK government and taxpayer
Standards and reporting	High	Medium	High	High	Long	UK government and taxpayer

3.2. POLICY TOOLS

3.2.1. Price based mechanisms

Feasibility

Policy tools	Legality	Data sources & assumptions	Documentation, verification & validation	UK farm production implications
CBAM	Medium	Medium	Medium	High
ETS	Medium	Medium	Medium	High
Carbon tax	Medium	Medium	Medium	High

Effectiveness

Policy tools	Level of ambition	Realistic expectation	Environmental scope	Product scope	Implementation time
CBAM	High	Low	Low	Low	Medium
ETS	High	Low	Low	Low	Medium
Carbon tax	High	Low	Low	Low	Medium

Price based mechanisms are suggested frequently in the literature[12], including in the Trade and Agriculture Commission report[13] and by the OECD[14]. They include a carbon tax, emissions trading schemes, CBAMs, and consumer taxes. In the analysis, we discuss the differences between imposing a price as a tax on production, a consumption tax, or through an emissions trading scheme on the production of agricultural products. The literature is generally unspecific in recommending which products are in scope although we consider that the most feasible product group are fertilisers and ingredient chemicals of fertilisers. The EU-ETS covers ammonia and nitric acid, which are key components of some fertilisers[15] and fertilisers are included in the EU's proposed carbon border adjustment mechanism.[16] The OECD[14] suggest a consumer carbon tax on ruminant meat as a method of limiting carbon leakage, although they acknowledge there is minimal research on this.

The general principle of these mechanisms is to ascribe a cost associated with the carbon emissions of a product and therefore internalise that impact. This would encourage sustainable agricultural practice by creating a financial incentive for producers to adopt production methods with lower emissions, which would be subject to a lower cost than those with higher emissions. For products that compete (i.e. substitution), it means a level playing field in which impacts across the life cycle are accounted for and paid for. For competition

[12] IEEP and Tulip, 2022, Designing Environmental Regulation of Agricultural Imports: Options and Considerations for the UK, available from: https://www.wwf.org.uk/sites/default/files/2022-02/Designing_Environmental_Regulation_Agricultural_Imports.pdf

[13] TAC (2021) Final Report, Available from: https://www.gov.uk/government/publications/trade-and-agriculture-commission-tac

[14] OECD (2021) Carbon leakage and agriculture: A literature review on emissions mitigation policies , Available from: https://www.oecd.org/environment/carbon-leakage-and-agriculture-9247f1e7-en.htm

[15] Directive 2003/87/EC (2003) Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02003L0087-20200101&from=EN

[16] European Commission (2021) Carbon Border Adjustment Mechanism: Questions and Answers, Available from: https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661

between geographies, the pricing can be done in a way that is equal for domestic producers and importers, also creating a level playing field.

A **carbon tax** is a price on carbon emissions that aims to internalise the associated negative environmental externalities. This creates incentives for agents to abate emissions at the lowest possible cost. This is most cost-effective when applied directly to emissions, although its application to emission-intensive inputs such as fertilisers and fossil fuels may be more feasible in practice.[14]

An **emissions trading scheme** (or cap-and-trade scheme) is an instrument that caps emissions to a pre-determined level and allocates emissions permits among agents (e.g. firms or farms), allowing firms with low abatement costs to sell permits to firms with high abatement costs. Permits may be allocated based on performance benchmarks, past emissions or auctioned, and may subsequently be traded in secondary markets. The cost of permits acts as a financial disincentive for high emissions practices and the financial benefits of selling permits acts as an incentive to adopt more climate friendly practices than competitors.

This approach is economically equivalent to a carbon tax and is therefore equally efficient at mitigating emissions and internalising the environmental externalities associated with pollution. These cap-and-trade schemes have so far excluded agriculture, except for emissions from energy and fuel use for some large-scale producers in some cases. In New Zealand, companies carrying out import, manufacture or purchase of nitrogen fertiliser, the slaughter of ruminant animals, dairy processing, or export of cattle, sheep or pigs must report those activities under the ETS but are not required to surrender credits.[17]

A carbon border adjustment mechanism (CBAM) would be an international/broader component of a system of pricing carbon. It is the imposition of a carbon cost on imported goods so they include the costs they would have incurred had they been subject to the destination market's emissions regulations. This cost can be in the form of a tax or ETS charge. This would reduce carbon leakage by ensuring domestic products and imports are subject to climate-related costs of the same stringency. This aims to reduce emissions by encouraging producers outside the destination market to reduce the emissions associated with their products so they can still access the destination market with minimal additional costs. The EU's planned CBAM is the main international example as it covers key ingredients of fertiliser, which is a major and GHG intensive agricultural input.

A consumer tax is applied to products that are deemed to be less environmentally friendly than others. This aims to reduce global emissions by encouraging consumers to purchase products with a lower climate impact and choose to make their diet more sustainable.

With respect to **feasibility** considerations, there are some legal issues to consider. All of the price-based mechanisms discussed in this section work by imposing additional costs on imported agricultural products and may as a result create a competitive disadvantage for imports from particular countries. Accordingly, they will need to be carefully designed to ensure they are either compatible with the non-discrimination requirements of WTO law or fall within an exception to those requirements. While it is in principle perfectly possible to design WTO-compatible price-based mechanisms, the risk of legal challenge before WTO dispute settlement – and potentially bilateral trade and investment dispute settlement – is high.

In practice, particular attention should be paid to:

- Using an objective, evidence-based and sufficiently detailed methodology to measure the environmental harms associated with a product, and to calibrate imposed costs with those harms. Note that similar taxation of products that cause different levels of harm may in this context be just as discriminatory as dissimilar taxation of equivalent products: decisions to exclude certain kinds of harm (e.g., indirect emissions) from the methodology therefore also need to be adequately justified.
- Ensuring that the price-based mechanism applicable to imports is accompanied by substantially equivalent measures to reduce the carbon emissions associated with domestic production.
- Creating a fair and objective process for considering equivalent costs incurred in the country of production, e.g. where an exporting country has its own emissions trading scheme.
- Ensuring monitoring and verification systems, including any cooperation arrangements with selected trusted foreign jurisdictions, are designed and applied in a non-discriminatory and even-handed manner.

[17] Environmental Protection Authority (2022) Primary industries, Available from: https://www.epa.govt.nz/industry-areas/emissions-trading-scheme/industries-in-the-emissions-trading-scheme/primary-industries/

It is worth noting that the EU's CBAM proposal has been designed very carefully with WTO legality in mind. Notably, it excludes an export element (i.e., the rebate of ETS costs for exported goods). Views continue to differ as to its legality, and much may depend on elements yet to be worked out.

The price-based mechanisms above rely on accurate, precise measurements of emission; specifically the emissions associated with a tonne of that product. Verification of emissions associated with a product or material must be done by a third-party verifying body similar to EU-ETS. This is easier for chemicals and minerals but difficult for agri-food products as they are complex and production methods, are so important for determining the emissions. It is difficult to measure emissions on individual farms other than by recourse to generalised emission factors applied to activity data; these do not capture specifics of accurate emissions measurement. The biological complexities not accounted for include differences between individual animals through inherent variability in biological systems and responses to climate and feedstocks, as well as land type and condition. Proxies would have to be used to quantify emissions for animal products or crops. Using emissions factors, associated with activity data or satellite data on deforestation to estimate emissions from agriculture could be used as proxies, although without high degrees of granularity in the activity information and dis aggregation of emissions factors the degree of uncertainty in this approach would be relatively high and it may be subject to WTO challenges. It should also be noted that the verification process for the cost of verification may exclude smaller producers.

With respect to **effectiveness**, applying CBAMs to fertilisers and incorporating fertiliser ingredients like nitric acid and ammonia into the UK ETS are deemed to be the most feasible options.

Nitric acid and ammonia, which are used to make fertiliser, are already covered under **EU-ETS** although fertiliser itself is not.[15] There are already structures in place for providing emissions data from these for the EU-ETS monitoring, reporting and verification which could be used to inform a similar structure in the UK.

Fertilisers are included in the EU's recent **CBAM** proposal[16]; this policy could be monitored and used to inform decisions about CBAMs in the UK. Successful application of **taxes** on fertiliser products entering the UK market could in principle prevent products with a higher carbon footprint from displacing domestically produced products and could lead to sectoral adjustments by steering UK producers towards products where they have a competitive advantage in carbon terms. These mechanisms could be applied to the fertiliser components mentioned above relatively quickly compared to other policies, as the EU model of verification could be followed and incorporated into the UK ETS. It is worth mentioning there is some risk of retaliation from trade partners who may choose to impose their measures and standards on UK exports to their countries.

The application of any price-based mechanisms to arable and livestock products, especially for meats with major variations in production methods and contexts, such as beef, is considered difficult to implement and vulnerable to WTO challenges. Applicability of carbon taxes to agri-food commodities looks unlikely in the short term given technical and other barriers, but measurement and data barriers may decline over time. **Consumer taxes** that treat all meat identically could also be considered unfeasible, as taxing two products equally, such as beef reared on cleared rainforest land and sustainably reared beef, would be deemed discriminatory. CBAM and an ETS are worth considering, but only for fertiliser and fertiliser ingredients at this stage..

Price based mechanisms generally are not designed to cover environmental issues other than emissions so are not an appropriate policy tool for a wider spectrum of objectives at this point. However, if applied they could have indirect environmental consequences like improved resource efficiency and possibly a shift in the composition of livestock production. Producers/importers would cover the cost initially, which may be reflected in consumer prices. Alternatively, importers to the UK may choose to absorb the cost themselves to price themselves competitively to improve or maintain market share.

3.2.2. Tariff based mechanisms

Feasibility

Policy tools	Legality	Data sources & assumptions	Documentation, verification & validation	UK farm production implications
Tariff reduction/ bands	High	Low	Low	Medium

Policy tools	Legality	Data sources & assumptions	Documentation, verification & validation	UK farm production implications
Products bans or core environmental standards	Medium	Low	Low	Medium

Effectiveness

Policy tools	Level of ambition	Realistic expectation	Environmental scope	Product scope	Implementation time
Tariff reduction/ bands	High	Medium	High	Medium	Short
Products bans or core environmental standards s	High	Medium	High	Medium	Medium

Tariff-based mechanisms, which offer lower or zero tariffs on selected imported products on the basis of certain environmental criteria can be used to improve the overall sustainability or carbon footprint of products entering the UK market. It should be noted that there are agri-food products which are currently subject to relatively high tariffs (such as beef, dairy and sugar subject to MFN tariffs on entering the UK) and others that are subject to relatively low tariffs (e.g. soybean and wheat). Tariff-based mechanisms are generally more suitable for the former category., where there is more scope for tariff reduction. Tariff-based mechanisms to reduce carbon leakage can be implemented through new free trade agreements (FTAs) between the UK and exporters it negotiates with, or through the revision of existing FTAs, as recommended by the Trade & Agriculture Commission[18].

The reduction or complete removal of tariffs on the imports of products which meet certain environmental criteria is a feasible measure to incentivise sustainable production in exporting countries when it comes to products with high tariffs.

Alternatively, **tariff banding can be used.** Tariff banding is when tariff rates are simplified into specific bands rather than using a continuous range of numbers from zero onwards. Existing tariffs would be rounded down to the nearest band.[19] The allocation of tariff bands could theoretically be based on the extent to which a product complies with environmental standards, thereby giving products with lower emissions and a lower environmental footprint access to domestic markets.

Both tariff reductions and tariff banding require certain enablers which specify the minimum environmental or technological standard required. The enables for this option are explained in Box 3-1

Where the existing tariffs are low, **products bans or core environmental standards** (also referred to as environmental mirror clauses) can be used. This could be done through Trade and Sustainability Chapter in the FTA in which the parties agree to restrict trade to compliant products, or where exporting countries agree to apply the same high environmental standards as the UK.

While not a tariff-based mechanism, it is worth mentioning sustainable import guarantees. These were recommended by the GRI[20], and are currently considered by the UK Government[21]. The provide a guarantee on trade loans used to source agricultural products which will allow the banks to offer a cheaper interest rate (cost of financing) on the loan. As such, they represent an alternative to tariff-based mechanisms. This

[18] [18] Trade and Agriculture Commission (2021), *Final Report*, London, p.85.

[19] Department for International Trade (2020) Public Consultation on the UK Global Tariff. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/865087/Public_Consultation_on_the_UK_Global_Tariff_-_updated_accessible.pdf

[20] https://www.efeca.com/wp-content/uploads/2020/03/GRI-Taskforce-Final-Recomendations-Report.pdf

[21] https://www.efeca.com/wp-content/uploads/2021/03/SIG-scoping-study-Full-Report-published.pdf

measure is currently investigating with respect to mitigating deforestation, and the lessons learnt could be applied in the broader carbon management context.

Box 3-1 Enablers to tariff-based mechanisms

- **Core environmental standards (CES)**[22] [23] [24]: are the use in trade policy of standards applicable to UK primary producers that potentially are vulnerable to being undermined by imports of agri-foods from regions that do not apply standards of equal stringency. Lower standard imports may have a cost advantage, reducing the competitiveness of UK producers and risking a growing market share for imports of a lower standard and potentially higher GHG footprint, thus creating carbon leakage. WWF and others are advocating the identification of CES in this sense (i.e. not the full suite of environmental standards applying to agriculture but a selection of them) and requiring relevant agri-food imports into the UK, e.g. beef, to have to meet the same or equivalent standards. CES would be a binding requirement on imports. Usually CES are proposed as a policy of its own. However, they could be used in partnership with a preferential tariff regime as indicated in the current draft.
- **Non-product-related processes and production methods (nprPPms)** are often of particular concern in climate and environmental terms as they refer to the way in which a foodstuff is produced, e.g. with a small or large number of pesticides, rather than the attributes of the product itself. Under WTO law, there are major constraints applying to discrimination in trade policy between products on the basis of production processes, which are difficult or impossible to detect in the product at the border. Discrimination on the basis of product composition, e.g. the level of pesticide residues in a fruit, is more acceptable. Most nprPPms are concerned with production methods and processes (including the feed regime for ruminants for example) rather than product characteristics such as pesticide residues. Hence there are more barriers to the introduction of trade measures based on production methods. This is a potentially significant barrier to the deployment of nprPPms. Equally it would be challenging to utilise standards based on nprPPms in preferential tariff policies.

With respect to **feasibility,** liberalising access to UK markets for only those agricultural products produced per defined environmental standards (and not for others) risks being treated as discriminatory under WTO law, and accordingly needs to be carefully designed. Such liberalisation is generally acceptable where it is the result of a free trade agreement between two or more countries of the kind permitted under WTO law. In other circumstances, however, the following principles apply:

- The underlying standards used to distinguish liberalised imports should be designed to address genuine environmental concerns, be evidence-based and even-handed, and be applied in a non-discriminatory and justifiable manner. The use of relevant, suitable and open international standards – where they exist – may in some cases provide a degree of protection against WTO challenges.
- Careful attention should be paid to the environmental harms associated with liberalised goods: where these are inadequately accounted for by the regulatory measure, it can result in discrimination.
- Standards applied to imports should also be applied equivalently to domestically produced goods, in an even-handed and objective manner.
- Monitoring and verification systems, including any cooperation arrangements with selected trusted foreign jurisdictions or with private certification schemes, must be designed and applied in a non-discriminatory and even-handed manner.
- Provided these conditions are met, the content and scope of environmental standards would be a matter for the UK to define as it sees fit, in accordance with its values.

Outright bans on the importation or sale of non-compliant imports are inherently more trade-restrictive than preferential liberalisation, and so can be considered discriminatory under the WTO.

Not all current UK environmental standards applying to agriculture could be formulated into operational standards for this purpose. Many standards apply generically to farm and farmland management, concerning production methods in a broad sense rather than to individual products. Product bans, import guarantees, tariff

[22] Dimbleby, H., 2021, National Food Strategy: Independent Review, Available from: https://www.gov.uk/government/publications/national-food-strategy-for-england

[23] IEEP, 2020, Environmental standards for UK agriculture in a new trade policy framework, Available from: https://ieep.eu/publications/environmental-standards-for-uk-agriculture-in-a-new-trade-policy-framework

[24] WWF and 3Keel, 2021, Thriving within our planetary means: Reducing the UK's footprint of production and consumption by 2030, Available from: https://www.wwf.org.uk/sites/default/files/2021-06/Thriving_within_our_planetary_means_full_report.pdf

reductions, non-regression clauses, tariff rates and quotas are all options. However, FTAs where both countries agree to certain standards are legally feasible.

The data sources to support this mechanism will depend on the objectives and standards chosen. Data on linkages between specific traded products, compliance with standards, environmental outcomes and perhaps costs to show impacts on competitiveness would be required. This has precedent for pesticides or fertiliser use, but quantifying biodiversity loss/preservation is more difficult and may be country-specific for each trading partner. It is necessary to verify whether standards in trading partners are equivalent where they are claimed to be. This would be a significant task, especially if there are multiple standards and multiple traded products involved. The comments on the difficulty in measuring emissions from agricultural products and practices from the previous section also apply here. Difficulties quantifying emissions would make products difficult to inspect at the border and therefore difficult to assess compliance.

A successful application would protect UK producers in the key products affected and add pressure to uphold standards domestically. It should be noted that these standards will differ between the four devolved nations. The selection of products in scope would depend on the standards available or the core standards developed and how transparent they could be. The feasibility issues discussed would have an impact on these decisions.

The **effectiveness** of these types of measures depends entirely on the content of the standards, and how well they can be monitored and enforced. In principle, this can be a highly effective (but potentially very trade-restrictive) measure for ensuring a 'level playing field'. Tariff-based mechanisms are not primarily focused on carbon leakage but other environmental concerns. The core climate standards upon which tariff reduction mechanisms are based could be part of a wider package of core environmental standards related to biodiversity, pesticide use etc. These mechanisms have high potential to be applied to both carbon leakage and other environmental problems and are perhaps appropriate as an accompaniment to a carbon focused approach like CBAM.

With respect to CES for low-tariff products, despite possible WTO challenges, these type of measures are currently investigated in the EU in the so-called "mirror clauses". This type of mechanism would take some time to analyse, formulate, and implement. The timelines would be linked to the development of new FTAs as and when they are negotiated.

It should be noted that not all measures recommended in the literature to address carbon leakage are as effective as others. The TAC report[13] has suggested non-regression clauses, which are a feature of some new-generation FTAs. In essence, they prohibit either party from weakening or failing to enforce, their existing environmental laws in a manner affecting trade or investment. They do not generally say anything about the minimum content of those laws, so clearly these provisions have only limited effect on carbon and environmental leakage. They do not address the situation where the exporting country has lower standards than the importing country. In some agreements, these provisions are not subject to dispute settlement.

Even the most ambitious examples, such as the Environment chapter of the UK - New Zealand agreement, often reaffirm commitments which already exist elsewhere, and contain many generally worded obligations. FTA sustainability commitments are important, but should be sought to reduce emissions additional to those covered in other agreements and must be an accompaniment to other more concrete and direct means of addressing carbon leakage.

Producers overseas would initially cover the cost of meeting standards. The cost of some imports might rise if production methods change and producers paid the cost of verification and documentation. It would not directly affect the cost of domestic production.

3.2.3. Consumer engagement

Feasibility

Legality	Data sources & assumptions	Documentation, verification & validation	UK farm production implications
High	Medium	Medium	Medium

Effectiveness

Level of ambition	Realistic expectation	Environmental scope	Product scope	Implementation time
Medium	Medium	High	Medium	Short

Consumer engagement can include several options such as **disclosure-based labelling, certification schemes and promoting sustainable choices**. Labels may be strictly informative, simply characterising a product's origin or environmental footprint, or could be more normative such as traffic lights showing a lower/higher carbon profile.

Disclosure based labelling would specify environmentally relevant information such as the product's carbon intensity or details of its processes of production, similar to energy efficiency ratings on buildings. This aims to encourage consumers to choose products that emit less emissions than competitors, thereby encouraging producers to lower their emissions to remain competitive. This option could be voluntary or mandatory.

Certification schemes are voluntary third-party guidelines and assessments of products, practices, and supply chains measured on a series of criteria and requirements. Meeting and complying with the appropriate criteria and industry standards gains the product or company approval and certification, thereby increasing its competitiveness. Aimed at producers, manufacturers, traders and retailers, certification schemes can help companies identify weaknesses in their environmental policies and practices and signal to consumers that the product has high environmental standards. They encourage action beyond national and international regulation and so can be used to complement more rigid regulations.

Promoting sustainable choices was recommended by the GRI Taskforce[25], who recommend that action be taken to support a consumer transition to more sustainable and healthy diets, and the food and drink industry to reduce food waste in supply chains. This may reduce the global emissions and environmental impacts of British diets, but is not specifically aimed at reducing carbon leakage.

With respect to **feasibility**, provided they are not supported by governmental measures, private certification schemes are not directly subject to WTO law and are therefore not at risk of WTO challenge[26]. Similarly, public education campaigns concerning the environmental impacts of food consumption choices raise no WTO legal issues, provided they do not explicitly promote the consumption of domestic over imported goods in ways that go beyond the provision of unbiased information.

To be feasible, mandatory labelling measures that seek to disclose the environmental harms associated with the production of particular goods must be carefully designed. They must not create a commercial disadvantage for imported goods of particular origin without adequate justification. The labelling requirements imposed must be necessary and rationally designed. Capturing emissions from any product faces the same challenges of data availability as other policy measures described in this report. Difficulties in estimating emissions associated with an agricultural product like beef remain and would be compounded if there was a desire to extend labelling to a product like a sandwich which could contain meat, dairy and cereal products. Verifying claims from producers faces similar problems of data availability and long, complex supply chains. Many labelling schemes rely on nprPPMs (see section 3.2.2) instead of taking a life cycle assessment approach, which can be used to signal how climate friendly a product is if not to quantify the emissions from production itself. Again, this does not make mandatory disclosive labelling unfeasible, but it would not be possible to adopt in a short space of time, even if the quantification of emissions was required to be less precise than for a CBAM.

It should also be noted that a mandatory labelling process would have to navigate the multiplicity of labels that already exist, which are differentiated vertically by how stringent they are and horizontally by what measures of sustainability they are certified against.[27] Some companies also design their own certification schemes or choose to only stock products certified with a particular label, to create consistency for their customers and

[25] GRI, 2020, Global Resource Initiative Taskforce: Final recommendations report 2020, Available from: https://www.gov.uk/government/publications/global-resource-initiative-taskforce

[26] It is, nevertheless, important to encourage private standard-setting bodies to comply with the Code of Good Practice set out in the WTO TBT Agreement

[27] OECD (2016) Environmental labelling and information schemes: policy perspectives. Available from: https://www.oecd.org/env/policy-persectives-environmental-labelling-and-information-schemes.pdf

reduce labelling noise.[27] If an all-encompassing label could be designed, care should be taken to ensure it does not add to the noise of the multiple labels that already exist. Making labelling compulsory may also exclude smaller producers who cannot afford the verification process.

A description of existing certification schemes in the UK is available in section 4.2.2. There are established certification models of varying sophistication such as Fairtrade. Larger companies may have a major influence on labels, especially if voluntary. Specific, tailored models of labelling can be controversial and will likely be subject to scrutiny. There are also established models for the verification of existing labels and certification schemes. However, the calculation and attribution of GHG emissions from agri-food products is complex and therefore may pose challenges to the monitoring of the impacts of these options.

Impact on the agriculture sector in the UK would depend on uptake and impact of labels and how they portray UK produce. There may be more trust by consumers in the UK produce and label systems which could bias towards domestic production.

With respect to **effectiveness,** disclosure-based labelling and certification schemes would be appropriate for agriculture commodities sold to consumers such as ruminant meat or cereals, providing the appropriate verification process could be established. As they rely on consumer uptake, they will be most appropriate for products purchased directly by consumers rather than agricultural inputs like fertiliser or feedstock.

Disclosure based labelling is a requirement to disclose information, not a requirement to meet certain underlying standards of environmental friendliness. As such, it is likely to be significantly less effective than mandatory standards-based measures. However, disclosure of such matters on a label may well be appropriate as part of a larger policy package. Disclosure labelling could be possible for other possible environmental impacts and there is some potential to capture a range of different environmental issues, either individually or in more synthetic appraisals.

A disclosure based, traffic light style labelling system for GHG emissions embedded in food products is a novel idea, but there is some research on nutritional labelling that can be used to judge how effective it may be. Research has shown that nutritional labelling does not always help consumers understand the nutritional content of the product, and that lifestyle and brand loyalty also affect purchasing choices.[28] However, the evidence is that nutritional labelling as seen on packaging in the UK is an effective way of encouraging consumers to make healthier, lower energy purchasing choices and that a traffic light system is the most effective way of doing this.[29] Authoritative and widely adopted labels such as organic could have more impact than competing private labels. Competition between different private ecolabelling schemes has at times led to a weakening of standards. This can be addressed by credibility devices such as membership in the ISEAL Alliance.[30]

Certification based labelling already exist for private standards like Rainforest alliance, Fairtrade etc. Certification standards have the potential to be more effective than disclosure-based labelling as they demand changes in production methods. An example of how certification schemes were incorporated into RED II in Europe can be seen in Box 3-2. WWF**Error! Bookmark not defined.** point out that standards-based labelling will raise the top end of the market but would not address poor performance from producers who choose not to participate but offer products at a cheaper option. Furthermore, private, voluntary sustainability standards are hard to meet for small scale producers in the developing world and so will increase inequality, especially if companies have to comply with multiple standards at the same time. This does not limit the effectiveness of the measure but is certainly a negative impact.

Box 3-2 Certification schemes for RED II

Certification schemes can take many forms and are covered in section 4. One approach not elaborated there but potentially worth noting in a broader agricultural context is the model introduced in the EU Renewable Energy Directive.

[28] Blythe, J. M. and Johnson, S. D. (2018) Rapid evidence assessment on labelling schemes and implications for consumer IoT security. Dawes Centre for Future Crime at UCL. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/949614/Rapid_evidence_assessment_IoT_security_oct_2018_V2.pdf

[29] Song J, Brown MK, Tan M, MacGregor GA, Webster J, Campbell NRC, et al. (2021) Impact of color-coded and warning nutrition labelling schemes: A systematic review and network meta-analysis. PLoS Med 18(9): e1003765. https://doi.org/10.1371/journal.pmed.1003765

[30] ISEAL, 2022, Defining credible practice, Available from: https://www.isealalliance.org/

In this case, all Member States were required to ensure that the share of national energy supply from renewable sources in the transport sector was at least 10% by 2020. Most of this in practice would be biofuel (due to limited alternatives). However, biofuels from any source, domestic or imported, would only count towards this target, which was binding on Member States, if they met EU specified sustainability standards, which covered several aspects of feedstock production, including those from crops. Voluntary certified supply chains meeting these standards had to be certified by the European Commission, whether the material was imported or produced within the EU. It remained legal to import biofuels that did not meet these standards but they would not count towards the target for renewables under the Directive, making such imports unattractive.

This model could be applied to agricultural supply chains if there were binding requirements of the kind developed for biofuels at a future date in the UK. Costs would be spread between producers, importers, the UK government, and taxpayers

Consumer engagement involves educating consumers about the climate impact of their food consumption choices could/should certainly be an important part of any policy package, but it cannot be effective without providing them with information about the climate impact of particular products. Therefore, it needs to be part of a larger package of measures centred on labelling and/or other supply chain governance initiatives which provide consumers with meaningful information on the sustainability of food supply chains. The TAC report[13] and the GRI[25] both suggest consumer engagement as a method of limiting carbon leakage as food is such an evocative subject is for the British public. For both labelling and educating consumers there is some potential to capture a range of different environmental issues, either individually or in more synthetic appraisals.

Another potential risk to the effectiveness of this measure is that purchasing decisions of major distributors affect what appears on supermarket shelves, which may skew the effect of consumer choices and make it difficult to monitor the extent of consumer interaction with said labels.

All labels require preparation and negotiation, but it is potentially faster to use voluntary, private measures that do not require governmental action or international negotiations. Costs would be borne by producers, importers, the UK government and taxpayers. There are costs related to data gathering and the verification of labels that may create barriers to entry for smaller producers. However, disclosure standards in particular do not require meeting higher standards and the costs of change in production methods are indirect impacts. Labelling may shift consumer patterns and so influence the market in favour of higher-cost products such as organics or free-range eggs.

3.2.4. Due diligence and public procurement

Feasibility

Policy tools	Legality	Data sources & assumptions	Documentation, verification & validation	UK farm production implications
Due diligence	High	Medium	Medium	Medium
Procurement strategies	High	High	Medium	Medium

Effectiveness

Policy tools	Level of ambition	Realistic expectation	Environmental scope	Product scope	Implementation time
Due diligence	High	Medium	High	Medium	Medium
Procurement strategy	Medium	Medium	High	Medium	Short

Due diligence is defined as *'a comprehensive appraisal of a business undertaken by a prospective buyer, especially to establish its assets and liabilities and evaluate its commercial potential'*[31]. In the context of GHG emissions, due diligence requirements will require traders to undertake appraisal of suppliers by reference to a set of defined sustainability standards. These may be privately defined sustainability standards, nationally defined standards, or international standards, for example, the EU's proposed new corporate sustainability due diligence law[32].

The GRI Taskforce[25] recommended mandatory due diligence on business and finance invested in agriculture and sectors that affect land-use change, requiring businesses to collect information on exposure to specific risks and impacts within their supply chains. This aims to encourage low emissions and environmentally friendly practices by requiring these companies to assess and take action to mitigate those risks and impacts and to publicly report on the steps they are taking.

There is existing experience with due diligence focusing on land-use change and deforestation. For example, the UK Environment Bill 2021[33] has set a minimum target of 10% of biodiversity net gain on any new development. However, further requirements can be imposed to target specifically GHG emissions from production (e.g. through the use of fertilisers) and the overall environmental impacts of the production. The EU is currently conducting an impact assessment for a Sustainable Corporate Governance regulation which would aim at broader due diligence. There is no experience with due diligence aimed at fertilisers, but it would be challenging to impose due diligence on finite component resources such as phosphorus, which is produced primarily in Northern Africa.

Public procurement strategies could include mandatory sustainable commodity requirements for the public sector. The GRI[25] recommend expanding this from solely the central government to the broader public sector, including prisons, schools and the military, building on existing policies for palm oil and timber. This must comply with the UK's obligations under the WTO Government Procurement Agreement as there are debates about the extent to which procurement policies for social and environmental purposes are consistent. Sustainable procurement policies would generally be permitted provided they are designed and implemented in ways that are transparent, impartial, non-arbitrary, justifiable, and necessary – or where they are covered by derogations in a Party's schedule. The key difference with due diligence requirements is that these would apply only to public procurement, whereas due diligence targets private companies.

Also suggested by the GRI[25] is a Sustainable Food Service Action Plan to engage the private sector. This would allow the government to work with industry to help them better understand and address deforestation and land conversion risks within their supply chains and give them tools and guidance to support businesses in addressing supply chain risks specifically for products associated with deforestation. It is suggested this measure focuses on SMEs and the eating out sector, as they may need the most support. The cost burden of this would be borne by the UK government and taxpayers, and an indirect burden would fall to producers if they chose to change production methods.

With respect to **feasibility** considerations, due diligence and procurement requirements are likely to be less vulnerable to WTO challenges than price-based measures or preferential liberalisation of environmentally sustainable products. This is in part because trade impacts of due diligence requirements may be the result of the actions of importers/distributors, rather than directly from the measure itself. Nevertheless, it is conceivable that due diligence requirements may have significant commercial impacts, and work to the competitive detriment of imports of particular origins. To reduce the risk of a challenge of *de facto* discrimination, the due diligence regime should still be established in such a way that all elements of it (standard-setting, monitoring, verification, etc.) apply to all products of all origins objectively, and do not impose differential burdens or costs on products of different origins without adequate justification and evidence.

The sustainability standards need to be robust and clear for them to be implemented correctly. Furthermore, they need to be accessible and have clear guidelines for land managers to achieve the standard.

Implementing this effectively requires checks on importers' due diligence systems, and the evidence collected regarding the imports. It may be challenging to verify the overall environmental impacts of production overseas;

[31] https://www.oed.com/

[32] European Commission, 2022, Corporate sustainability due diligence, Available from: https://ec.europa.eu/info/business-economy-euro/doing-business-eu/corporate-sustainability-due-diligence_en

[33] UK Government, 2021, Environment Act 2021, Available from: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

a similar issue to the implementation of goods and services liberalisation based on CES. This is the core of due diligence requirements, so it may restrict its application or at least limit the speed of adoption.

The EU study[34] on due diligence shows that due diligence is less effective when working with countries with higher corruption. For example, it is an ineffective measure when sourcing sustainable timber from Myanmar. There is limited evidence for broader due diligence but the difficulties in verification can limit the effectiveness.

Due diligence that is based on specific standards rather than the laws of the producer country may impact agriculture in the UK. The extent of these impacts would depend on the stringency of the standards and how far they differ from the current practices in each of the devolved nations.

In terms of public procurement, it is generally anticipated that this would work together with certification schemes, thus simplifying the collection of evidence requirements, and improving the feasibility.

In terms of **effectiveness**, due diligence and public procurement are particularly suited to specific supply chains and particular objectives rather than wider spectrum ones. Products currently under consideration for the proposed Due Diligence on Forest Risk Commodities (DDFRC) law that are also produced in the UK include beef, leather and maize.[35] The UK public procurement strategy already applies to palm oil in the context of deforestation but could be expanded to other agricultural products in the context of reducing carbon emissions.

Carbon leakage is only relevant to the products that can be produced in the UK, so this must not be conflated with procurement measures to reduce deforestation or land-use change for products not produced domestically such as coffee and cocoa. An appropriate product is beef; in this case, due diligence will be a means to address carbon leakage, but only if it is defined with respect to agreed environmental standards and rather than legality under national laws in the exporting country.

If the sustainability standards target land conversion it will have positive impacts on biodiversity and indigenous rights in the context of tropical rainforests. Wider due diligence can target the use of fertilisers.

Public procurement strategies are limited only to products which are purchased by the UK public sector.

The EU study[36] on due diligence shows that due diligence is less effective when working with countries with higher corruption. For example, it is an ineffective measure when sourcing sustainable timber from Myanmar. There is limited evidence for broader due diligence but the difficulties in verification can limit the effectiveness. Importers should be given sufficient time to set up due diligence systems and revise their supply chains as necessary. Limitations will also arise from establishing which standards to use and specifying a verification process. In general, public procurement strategies are quicker to implement than due diligence requirements in the private sector

The cost will be spread between producers (to align their products with the due diligence) and importers (to set up due diligence systems). Costs can trickle down to the consumers. The impact on smaller producers and importers will be disproportionately larger than on larger producers and importers.

[34] European Commission, 2021, Proposal for a regulation on deforestation-free products, Available from: https://ec.europa.eu/environment/publications/proposal-regulation-deforestation-free-products_en

[35] DEFRA, 2021, Implementing due diligence on forest risk commodities: Consultation document, Available from: https://consult.defra.gov.uk/international-biodiversity-and-climate/implementing-due-diligence-forest-risk-commodities/supporting_documents/implementingduediligenceconsultationdocument.pdf

[37] WWF and RSPB (2020) Riskier business, Available from: https://www.3keel.com/wp-content/uploads/2020/08/RiskierBusiness_July2020_V7_0.pdf

3.2.5. Other policy suggestions

Here is a range of other policy suggestions which enable the but do not necessarily address the problem of carbon and environmental leakage.

Financial aid

Feasibility

Legality	Data sources & assumptions	Documentation, verification & validation	UK farm production implications
High	High	Medium	Medium

Effectiveness

Level of ambition	Realistic expectation	Environmental scope	Product scope	Implementation time
Medium	Medium	Medium	Medium	Medium

This includes channelling finance abroad to support sustainable agriculture practices in areas the UK supplies from[12] [14] [25] and subsidies or abatement payments to British farmers to ensure the cost of sustainable production remains low[14]. The first measure aims to drive down the cost of sustainable methods of production in exporting countries through either public, private, or blended finance directly invested in sustainable land-use systems. Experts emphasised the importance of diplomatic strategy to ensure any policy measures implemented in the UK succeed at reducing emissions globally and financial aid would play a part in this.

Domestic subsidies or abatement payments are also recommended to encourage domestic actors to continue using lower emissions production techniques and adopting better practices.[14] Financial support aims to prevent a "race to the bottom" where domestic farmers compromise on emissions in an attempt to keep costs competitive with imports. It is estimated these will have a lower impact on net emission reduction than a price-based mechanism, but there are minimal studies on agriculture to support this.[14] The cost would be borne by the UK government and taxpayers.

Measurement standards

Feasibility

Legality	Data sources & assumptions	Documentation, verification & validation	UK farm production implications
High	High	High	Medium

Effectiveness

Level of ambition	Realistic expectation	Environmental scope	Product scope	Implementation time
High	Medium	High	High	Long

A common theme throughout section 3 of the report is that data on emissions from agriculture are difficult to acquire and verify. There are no scalable ways to measure emissions in a way that would give confidence that these measures would survive a WTO challenge. Measures that only permit imports to enter the UK market if they meet certain internationally defined standards of sustainability rely on robust standards in the first place. IEEP[Error! Bookmark not defined.], the TAC report[13], WWF[Error! Bookmark not defined.] and the GRI Taskforce[25] point out that more robust data and standards to benchmark against are needed for many of these policies to become effective. These can be called measurement standards or in the context of an ETS, monitoring, reporting and

verification (MRV). Stakeholders consulted in this study emphasised the importance of developing MRV further.

In addition to the lack of data availability, there is no clear global standard for climate that the agricultural sector could work towards. For example, there is no equivalent of the organic standard for climate performance that could better enable the implementation of other policies and no scalable way of discussing climate targets as CO2eq/t of product, something which hinders the application of carbon taxes to agricultural commodities. The TAC report[13] recommends the establishment of global standards framework for the environment, led by the UK to allow standardised reporting and clear standards of performance to aim for. It is envisaged that the UK would cooperate with a number (small or large) of other countries and parties to develop such standards. These would likely encompass other environmental metrics as well as GHG emissions, such as biodiversity, water pollution and air quality.

Such a model could be implemented in the short term by cooperating with some like-minded partners to produce a new set of international sustainability standards relevant for specific environmental harms, with the UK regulating imports based on those standards. However, it raises the question of whether they are likely to survive a WTO challenge. The answer is that it is only legally beneficial to base measures on international standards if the international standards meet several conditions, such as the standard-setting process being open to the relevant bodies of all WTO Members at all stages. That said, the more transparent, inclusive, coherent, evidence-based and generally accepted the process of standard-setting, the more likely the standards will be judged to satisfy the core WTO tests of non-discrimination, non-arbitrariness, necessity, etc.

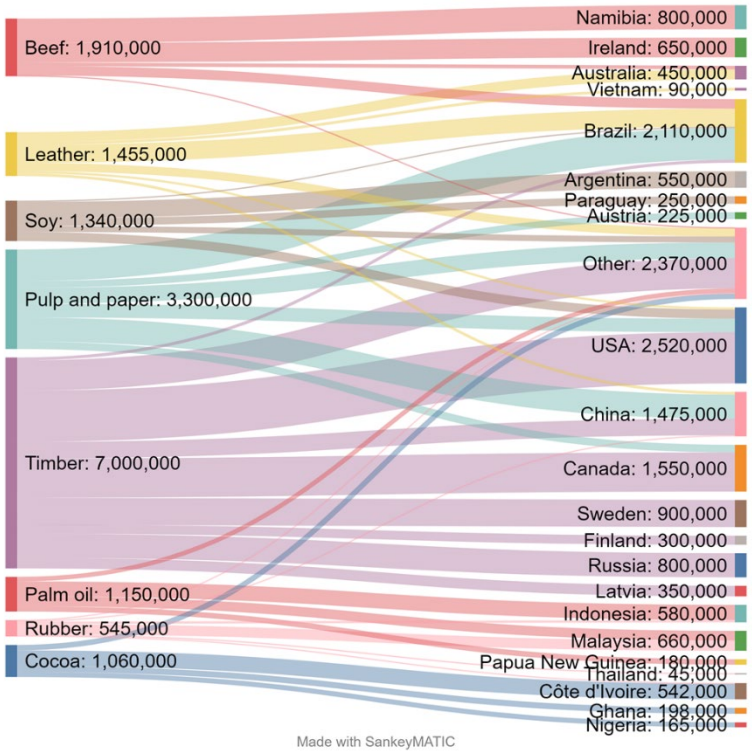
The aim of this measure would be to act as an enabler for other policies to be adopted and would not reduce carbon leakage or lead to more environmentally friendly global farming practices on its own. However, advancing data accessibility is a key step to effecting more sustainable agricultural practices. Cooperation to produce truly harmonised international standards for ‘sustainable production’ would be a truly long-term endeavour.

4. AN ASSESSMENT OF POLICY OPTIONS TO HALT DEFORESTATION BY TACKLING UK DEMAND FOR PRODUCTS FROM DEFORESTATION'

4.1. KEY DEFORESTATION COMMODITIES AND EXPORTING COUNTRIES

Research conducted by WWF and RSPB[37] identified seven key commodities for which the UK has a large land footprint overseas, and that could be linked to deforestation in exporting countries. These include **timber, beef, pulp and paper, leather, soy, palm oil, rubber and cocoa**. According to their research, between 2016 and 2018, an average annual area of 21.3 million hectares was required to supply the UK's demand for these commodities, which represented an increase of 15% compared to the 2011-15 period. Figure 1 shows the UK's land footprint for each of the commodities, per exporting county. As per the figure, the largest exporters of these commodities include Brazil, Canada, China, and the USA. It should be noted that not all exporting countries are associated with a high risk of deforestation.

Figure 1 UK land footprint in exporting countries (ha/yr., 2016-2018)



Source: Own compilation based on WWF and RSPB (2020) Riskier business[38]

We performed further analysis on the *tropical deforestation risk* (in hectares) associated with UK imports to identify key risk commodities and export countries. The analysis was based on a dataset by Pendrill et al (2020)[39]. Using 2017 data, the analysis showed that the 10 commodities with the highest risk of tropical deforestation were **palm oil, beef, soy, timber, coffee, cocoa, rubber, sugar, pepper and nutmeg,** amounting to 14,470 ha/yr annual risk (90% of the annual tropical deforestation risk[40] posed by UK imports).

[37] WWF and RSPB (2020) Riskier business, Available from: https://www.3keel.com/wp-content/uploads/2020/08/RiskierBusiness_July2020_V7_0.pdf
WWF and RSPB (2017) Risky business, Available from: https://www.wwf.org.uk/sites/default/files/2017-10/WWF%20and%20RSPB%20-%20Risky%20Business%20Report%20-%20October%202017.pdf

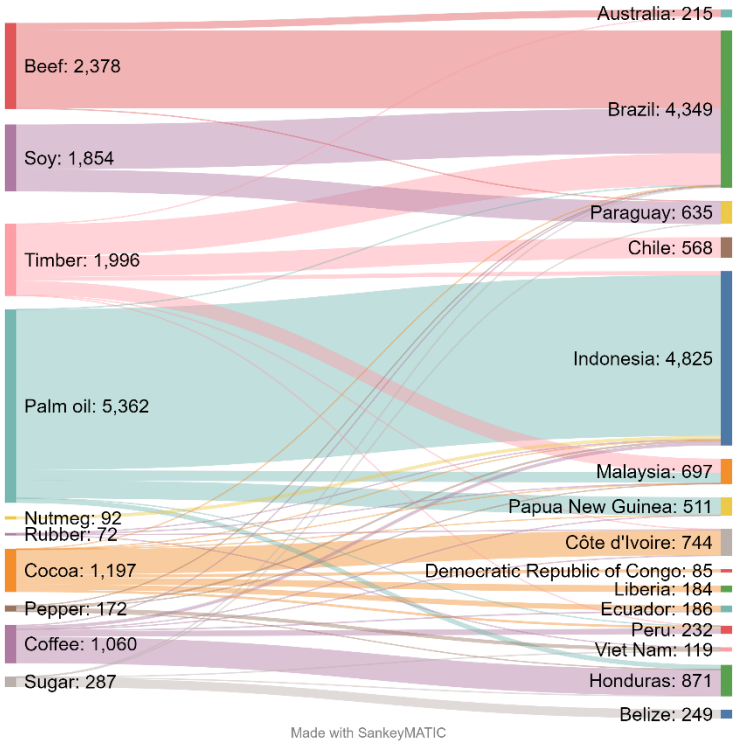
[38] https://www.3keel.com/wp-content/uploads/2020/08/RiskierBusiness_July2020_V7_0.pdf

[39] Pendrill et al, 2020, Deforestation risk embodied in production and consumption of agricultural and forestry commodities 2005-2017, Available from: https://zenodo.org/record/4250532#.Yj4WserP2Ul

[40] Estimated at 15,964 ha/yr

The top five high-risk countries identified included Indonesia, Brazil, Honduras, Côte d'Ivoire, Malaysia and Papa New Guinea. The deforestation-related carbon footprint risk associated with the UK imports of these 10 commodities from 15 exporting countries is equal to 8.3 million tCO2eq annually, compared to 9.2 million tCO2eq from the overall tropical deforestation risk posed by the UK (90%). It should be noted that a key limitation of this analysis is that it is restricted to tropical deforestation, and therefore does not include exports from countries with large tree covers such as Canada, Russia and the United States.

Figure 2 Risk of deforestation associated with UK imports of 10 key commodities (ha/yr., 2017)



Source: Own compilation based on Pendrill et al (2020)[41]

Note: Timber includes all timber products, including pulp and paper

4.2. EXISTING MEASURES IN THE UK

4.2.1. Policy measures in the UK

Below are details of the three main trade-related policy measures that are currently in action in the UK.

Due Diligence on Forest Risk Commodities (DDFRC)

Products	Focus	Lead	Extent	M/V?	Legally Binding?	Active	Stringency on Deforestation
Forest Risk Commodities (e.g., beef & leather, cocoa, coffee, maize, palm oil, rubber and soy)	Risk Assessment, Risk Mitigation, Reporting	Department for Environment, Farming and Rural Affairs (DEFRA)	UK	Mandatory	Yes	No	Medium

Note: M = Mandatory; V = Voluntary

[41] Pendrill et al, 2020, Deforestation risk embodied in production and consumption of agricultural and forestry commodities 2005-2017, Available from: https://zenodo.org/record/4250532#.Yj4WserP2Ul

Under the Environment Act 2021, the UK government introduced legislation proposing a law that would apply to large businesses to ensure that 'forest-risk commodities' (FRCs), defined as commodities that can cause wide-scale deforestation, have been produced legally, on the basis that large proportions of these globally produced products are linked to illegal deforestation[42]. The proposed law, the Due Diligence on Forest Risk Commodities (DDFRC), would ensure that FRCs and FRC derived products used by businesses in scope are produced in accordance with local laws, and that said businesses must undertake due diligence steps to ensure this. Those that do not comply would face fines of up to £250,000, in line with the Ivory Act.

The implementation of the DDFRC obligation has recently gone through a second round of consultations, considering which commodities should be initially regulated, which businesses are under the scope, how businesses conduct due diligence exercises, transparency, enforcement, monitoring and compliance. This second round of consultation closed on the 11th of March 2022. Consequently, specific details are currently unknown, to will be fleshed out in secondary legislation.

Strengths and Weaknesses

The DDFRC will be an important piece of legislation to prevent FRCs from entering the UK market. The commodities it applies to are wider in scope (undefined, but it is suggested to include beef, cocoa, coffee, leather, maize, palm oil, soya and rubber[43]) than the EU version (Deforestation-Free Productions (DFP_ Regulation), with the possibility of extending that scope, to mining and extractive commodities for example. The due diligence mechanism will require regulated entities to establish due diligence systems to identify information about the FRC, assess related risks and mitigate them, and to issue reports on an annual basis.

However, the DDFRC only applies to "larger businesses", the size of which is to be confirmed. This will likely be based on annual turnover or by different thresholds for each commodity, and companies underneath the set threshold(s) will not be considered within the law. Further, the semantics of the Environment Act simply prohibits the use of FRCs and products derived from FRCs; in practice, the interpretation of this will be important to consider. Additionally, the mechanism only focuses on illegal deforestation, where products related to deforestation are deemed "illegally produced" within their country of origin, according to local laws. This would undermine deforestation protections where deforestation still occurs 'legally'. The DDFRC does not include the finance sector within its scope, although new mechanisms such as the TNFD and SDRs hope to cover this. Finally, the DDFRC is not as wide in scope as the EU's DFP Regulation, as it does not cover third party rights in the concept of law.

G7 2030 Nature Compact

Products	Focus	Lead	Extent	M/V?	Legally Binding?	Active	Stringency on Deforestation
N/A	Supply Chains, Target Setting, Sustainable Forest Management	G7	G7 countries (Canada, France, Germany, Italy, Japan, the UK, and the United States)	Mandatory	No	Yes (2021)	Medium

At the 2021 G7 Leader's Summit, countries agreed on a shared G7 2030 Nature Compact. This agreement seeks to address pressing global challenges related to climate change and biodiversity loss. Amongst other things, deforestation is considered under Pillar One, focused on leading the transition to the sustainable and legal use of natural resources. This will commit G7 countries to a range of things, including:

- Tackling deforestation, including by supporting sustainable supply chains and demonstrating clear domestic action,

[42] Due diligence on forest risk commodities. Consultation document. August 2020. DEFRA.

[43] https://sustainability.freshfields.com/post/102hdup/deforestation-long-awaited-changes-are-on-the-way-in-the-uk-and-the-eu-a-compa

- Champion the collaborative effort between consumer and producer countries to advance global and regional sustainable supply chains, protecting, conserving, and sustainably managing forests and other ecosystems, and
- Supporting agreement and delivery of targets to prevent the loss, fragmentation and degradation of ecosystems and to restore significant areas of degraded and converted ecosystems[44].

Strengths and Weaknesses

Deemed as "crucial"[45] and "historic"[46], the G7 2030 Nature Compact aligns with other agreements such as the Leaders' Pledge for Nature[47] and the UN's prospective 'Nature Positive by 2030'[48] goal that is being called to be discussed at COP15 UN Biodiversity Summit in Kunming, China. The wider policy ambitions set out in the Compact are integrated and comprehensive, as well as being rooted in science and economics. The targets and options within the agreement will be kept under review to ensure its delivery by 2030. However, commitments in the Compact need to be embedded within national plans where appropriate for the ambitious targets to be achieved, and progress cannot be commented on at the current time.

Forestry, Agriculture and Commodity Trade (FACT) Dialogue

Products	Focus	Lead	Extent	M/V?	Legally Binding?	Active	Stringency on Deforestation
Agricultural & Forestry Commodities (incl. beef, soy, cocoa and palm oil)	Trade and Market Development, Smallholder Support, Traceability and Transparency, RDI	The UK, Indonesia (in association with the Rainforest Alliance)	Endorsed countries (see Table 3)	Voluntary	No	Yes (2021)	Low

During COP26 in Glasgow, the FACT Dialogue was launched by the UK and Indonesia as co-chairs in association with the Rainforest Alliance; 28 countries have endorsed the joint statement that commits them to working on protecting forests and other ecosystems across the globe while promoting trade and sustainable development[49]. The government-government dialogue aims to bring together some of the largest consumers and producers of internationally traded agricultural and forestry commodities (AFCs) to agree and act upon principles for collaborative action, developing a roadmap for international trade and sustainable land use.

The FACT Dialogue's 'Roadmap for Action'[50] focuses on several themes, led by different working groups (WGs). The Trade and Market Development WG seeks to incentivise the sustainable production and trade of AFCs and support jobs and livelihoods, building a better understanding of common and specific needs and mapping how the dialogue can support other international processes. Colombia is the co-facilitator of this WG. The Smallholder Support WG aims to improve conditions and security of livelihoods for small-scale farmers and support best practice efforts towards reducing deforestation through policy reforms and increasing access and availability of finances. Malaysia and Ghana are the co-facilitators of this WG. The aims of the Traceability and Transparency WG are to enhance collaboration with a focus on technology, digital innovation and institutions, and to facilitate increased trade in sustainable products. It will also seek to inform international guidelines on data sharing and data management on AFCs. Ghana is also the co-facilitator of this WG. Finally, the Research, Development and Innovation (RDI) WG will identify how to accelerate innovation relevant to the FACT Dialogue, disseminate research on best practices and work across the other themes, strengthen the capacity of national institutions for further research, and support the financing of AFC and trade RDI to promote sustainable and climate-resilient practices. Brazil is the co-facilitator of this WG.

[44] https://www.g7uk.org/wp-content/uploads/2021/06/G7-2030-Nature-Compact-PDF-120KB-4-pages.pdf
[45] https://wwf.panda.org/wwf_news/?2926466/WWF-welcomes-crucial-Nature-Compact-by-2030-expected-to-be-agreed-at-the-G7-today
[46] https://www.campaignfornature.org/g7-nations-agree-to-historic-nature-compact
[47] https://www.leaderspledgefornature.org/
[48] https://www.nature.org/en-us/newsroom/cbd-oewg-geneva-ngos-urge-negotiators-nature-positive-goal/
[49] https://www.factdialogue.org/about-fact
[50] https://www.factdialogue.org/fact-roadmap

Strengths and Weaknesses

The FACT Dialogue has important talking points on reducing deforestation and AFCs, allowing countries to contribute to the conversation and have their say in future actions. The collaboration between a wide range of countries that produce and consume AFCs will help to set standards for the future and encourage and support more sustainable practices (although notably the United States, Russia, Canada and China are not present, all big producers of AFCs that are imported to the UK[51]). Moving forward, the FACT Dialogue will ideally see more countries becoming involved and contributing toward its goals.

However, due to its nascency, there are currently no actionable targets, resolutions or agreements that have come out of the dialogue. While the roadmap contains lists of actions for each WG, it will take time to see how the platform and its endorsers work together toward realising each action. As it was only started at COP26 in November 2021, there has not been any significant progress, and therefore there are no specific outcomes.

Table 3 compares the three mechanisms described above.

[51] WWF and RSPB (2020) Riskier business, Available from: https://www.3keel.com/wp-content/uploads/2020/08/RiskierBusiness_July2020_V7_0.pdf

Table 3: Comparison table of existing mechanisms in the UK (and abroad) that seek to reduce FRC imports into the UK market.

Mechanism Name	Products	Focus	Lead	Extent	Mandatory/ Voluntary?	Legally Binding?	Active	Stringency on Deforestation
Due Diligence on Forest Commodities	Forest Risk Commodities (e.g., beef & leather, cocoa, coffee, maize, palm oil, rubber and soy)	Risk Assessment, Risk Mitigation, Reporting	Department for Environment, Farming and Rural Affairs (DEFRA)	UK	Mandatory	Yes	No	Medium
G7 Nature Compact 2030	N/A	Supply Chains, Target Setting, Sustainable Forest Management	G7	G7 countries (Canada, France, Germany, Italy, Japan, the UK, and the United States)	Mandatory	No	Yes (2021)	Medium
Forestry, Agriculture and Commodity Trade (FACT) Dialogue	Agricultural & Forestry Commodities (incl. beef, soy, cocoa and palm oil)	Trade and Market Development, Smallholder Support, Traceability and Transparency, RDI	The UK, Indonesia (in association with the Rainforest Alliance)	Endorsed by: Belgium, Brazil, Colombia, Cote D'Ivoire, Democratic Republic of Congo, Denmark, France, Gabon, Germany, Ghana, Indonesia, Italy, Japan, Liberia, Malaysia, Netherlands, Nigeria, Norway, Paraguay, Peru, Republic of Congo, Republic of Korea, Spain, United Kingdom, and Uruguay.	Voluntary	No	Yes (2021)	Low

4.2.2. Certification schemes and standards applicable to the UK Market

Certifications and standards are voluntary third-party guidelines and assessments of products, practices, and supply chains measured on a series of criteria and requirements. Meeting and complying with the appropriate criteria and industry standards gains the product or company approval and certification, a clear indication for consumers of the product's environmental and social standards. Aimed at producers, manufacturers, traders and retailers, certification schemes can help companies identify weaknesses in their environmental policies and practices and enable them to demonstrate commitments toward good environment, ethical, social and food safety practices. Certification schemes enable action where national and international legislation does not go far enough, demanded by non-governmental organisations (NGOs), consumers and businesses alike, and target mainstream adoption of better production practices for a range of products and materials. There are also several initiatives such as the State of Sustainability Initiatives (SSI) project and Sustainable Commodity Initiative (SCI) facilitated by the UN Conference on Trade and Development (UNCTAD) and the International Institute for Sustainable Development (IISD) that seek to address problems such as the legitimacy and performance of the large number of standards and certificates that exist.

Roundtables have been set up for several AFCs, namely soy and palm oil, that bring together industry stakeholders and relevant actors on a national or global scale to develop, implement and verify standards for the sustainable production, trade and use of the said product. Like certification schemes, roundtables are generally led by a single or assembly of NGOs which set the criteria for the value chain; roundtables also provide a platform for multistakeholder dialogue on the product. Table 4 provides details on a range of relevant private certifications currently in use that are applicable to UK businesses.

Types of Certifications

Bodies that govern certification schemes permit certified products to be traded through one of the following types of supply chain models:

1. Identity Preserved (IP) – the certified (sustainable, responsible) product, from a single identifiable certified source, is kept separate from ordinary products throughout the supply chain.
2. Segregated – the product, from different certified sources, is kept separate from ordinary products throughout the supply chain.
3. Mass Balance – products from certified sources are mixed with ordinary products throughout the supply chain.
4. Credits – the supply chain is not monitored for the certified product presence, but manufacturers and retailers buy credits from certified producers to cover the amount/number of the product that they use.

Certification schemes and standards have a range of strengths, the main ones being enabling the consumer to make informed decisions and the influence of consumers' purchasing choices on production. Further, they can be used as an instrument to enable producers and actors to make essential improvements in the way commodities are produced, how the environment is managed and other relevant requirements that can cover social, economic and human rights criteria. While there are positive effects on the prices of certified goods within the supply chain, there is debate as to whether income from the sale of produce is higher for certified farmers than for non-certified farmers; overall, household income is not higher for certified farmers, according to a review on schemes in low and middle-income countries[52]. This is often the case if there is a market power imbalance at the wholesale level. Context matters substantially for the causal chain between the interventions of certification schemes and the well-being of producers and workers.

Listed below are other strengths and weaknesses.

Strengths:

- Stimulating innovation for new and more sustainable products
- Developing new markets that cater for more sustainable consumer interests
- Greater economic support for sustainability
- Creating and establishing new networks of production and value chains
- Monitoring companies' and product's environmental claims, enabling standardisation and comparability
- Educational opportunities for producers and consumers alike

[52] Oya, C., Schaefer, F., Skalidou, D., McCosker, C. and Langer, L., 2017. Effects of certification schemes for agricultural production on socio-economic outcomes in low-and middle-income countries: a systematic review. Campbell Systematic Reviews, 13(1), pp.1-346.

- Influencing consumer behaviour towards more environmentally friendly products

Weaknesses:

- Potential for greenwashing when non-third-party certifications are used
- Difficulty with verifying whether a commodity is attributed to deforestation or not. For instance, if land-use changes regularly in an area that has been previously deforested, there is debate as to whether any commodity from that land can be attributed to deforestation. Further, there can be issues when the apparent direct driver of deforestation was a land-use change that was subsequently and quickly replaced by a new crop that is associated with the commodity in question. Some certification schemes work around this by applying a date to the schemes to create a threshold for deforestation, but not all do this, resulting in a low stringency on deforestation.
- Certifications are voluntary, meaning that there is no requirement for companies to take part in them
- Possible consumer disinterest in paying a premium for sustainable products
- Possible redundancy if several certifications certify the same characteristics, or, a weakening of the signal to consumers if there are lots of certifications that seem the same, but do not have the same standards
- Preventative costs for certification, particularly for smaller producers
- As most certification schemes are private, the issues covered by each certification vary. In relation to FRCs and deforestation, some schemes are more stringent and have more principles and criteria that prevent deforested products from being certified, or those related to high conservation value areas for example, and enforce better environmental management, whereas some do not. Others go further and contain requirements for social and economic issues such as human rights and fair wages.

Table 4: Compilation of a range of certification standards that are applicable to commodities entering the UK market.

Scheme Name	Products	Extent	Deforestation Principles & Criteria (P&Cs)	Stringency on Deforestation
Government Buying Standard (GBS)	Palm Oil	UK public sector	• *From the end of 2015, all palm oil (including palm kernel oil and products derived from palm oil) used for cooking and as an ingredient in food must be sustainably produced*[53]	Low
Round Table on Responsible Soy (RTRS)	Soy	Global	• *No expansion of cultivation onto land cleared of native habitat after May 2009, except for land in line with RTRS-approved maps or systems. If no RTRS-approved maps are available, expansion cannot occur into native forests or high conservation value areas (HCVAs).* • *Cultivation may expand into land cleared before May 2009 that has been used for agriculture within the past 12 years unless the regenerated vegetation has reached the definition of native forest*[54]*.*	High
Roundtable on Sustainable Palm Oil (RSPO)	Palm Oil	Global	• *The 2018 RSPO included new requirements to ensure the effective contribution of RSPO in halting deforestation by incorporating the High Carbon Stock Approach (HCSA) Toolkit into the revised standard.* • *7.12. Land clearing does not cause deforestation or damage to any area required to protect or enhance High Conservation Values (HCVs) or High Carbon Stock (HCS) forest. HCVs and HCS forests in the managed area are identified and protected or enhanced*[44]*.*	High
Fairtrade	Cocoa	Global	• *3.2.33. Members must avoid negative impacts on protected areas and in areas with high conservation value within or outside the farm or production areas from the date of application for certification. The areas that are used or converted to production of the Fairtrade crop must comply with national legislation in relation to agricultural land us*[44]*.*	Medium
Utz	Cocoa	Global	• *I.D.113. No deforestation or degradation of primary forest occurs or has occurred since 2008.* • *I.D.114. No deforestation or degradation of secondary forest occurs unless a legal land title and/or landowner permission is available; government permits are available (if required), and there is a report produced by an environmental expert confirming that the appropriate clearing techniques are used and that there is compensation with reforestation activities of at least equal ecological value*[44]*.*	Medium
Rainforest Alliance	Cocoa, palm oil	Global	• *2.2 Critical Criterion. From the date of application for certification onwards, the farm must not destroy any natural ecosystem. Additionally, from November 1, 2005, and onwards no high-value ecosystems must have been destroyed by or due to purposeful farm management activities.* • *If any natural ecosystems have been destroyed by or due to purposeful farm management activities between November 1, 1999, and November 1, 2005, the farm must implement the following analysis and mitigations: conduct an analysis of the ecosystem destruction to document the scope and ecological impact of the destruction; develop a mitigation plan with advice from a competent professional that is*	High

[53] https://www.gov.uk/government/publications/sustainable-procurement-the-gbs-for-food-and-catering-services/government-buying-standard-for-food-and-catering-services

[54] https://www.wwf.org.uk/sites/default/files/2017-10/Risky%20Business%20-%20October%202017.pdf

			consistent with applicable legislation and that compensates for the negative impact; and, implement the activities of this mitigation plan, including for example the set aside of a significant percentage of the farm area for conservation purposes[44].	
Forest Stewardship Council (FSC)	Timber, Rubber, Pulp, Paper	UK	No direct P&Cs on deforestation. The FSC P&Cs exclude certification of plantations established on areas converted from the natural forest after November 1994, unless the plantation is a small part of the certified area, or if the management organisation was not responsible for the conversion. • *The FSC has more rigorous requirements on some key outcome requirements (e.g., maintenance of High Conservation Values, workers' rights) and process aspects (e.g., multi-stakeholder engagement and formulation of audit teams) than the PEFC (below). The FSC also has more certified areas in the tropics than PEFC and is supported by leading environmental NGOs.* • *For paper and board manufactured in the UK derived from reclaimed fibre, products often carry a recycling mark. The FSC has an on-product recycled label for paper products, which can contain any balance of reclaimed materials as long they are independently verified as such, but this does not guarantee the wood in the recycling proportion comes from a forest managed in compliance with the FSC P&Cs[55].*	Medium
Programme for the Endorsement of Forest Certification (PEFC) (UK)	Timber	Global	The PEFC P&Cs exclude certification of plantations established on areas converted from the natural forest after 2010, unless the plantation is a small part of the certified area, or if the management organisation was not responsible for the conversion. P&Cs are broadly similar to the FSC above.	Medium
ProTerra Foundation Certification Program	Soy	Global	• *No conversion of native vegetation or HCVAs, including primary forests, after 2004 ('core' or mandatory requirement).* • *Certified organisations must adhere to any additional limits (regarding land conversion) posed by governmental regulations and international conventions (non-mandatory requirements).* • *In certain limited circumstances in specific regions, measures to compensate for HCVAs that have already been cleared between 1994 and 2004 must be used to augment other indicators (core requirement)[44].*	High
ADM Responsible Soy Standard	Soy	Global	• *Prohibition on development in High Carbon Stock Forests and HCVAs.* • *No burning.* • *No crops are produced in areas with legal deforestation or legal conversion of HCV native vegetation after March 1, 2015, in accordance with ADM´s Commitment to No Deforestation.* • *Farmers must be able to demonstrate rights to use the land, which will be checked for possible claim areas, illegal deforestation, and areas of drained swamps[56].*	High

[55] https://my.fsc.org//en-my/certification/principles-and-criteria

[56] https://assets.adm.com/Sustainability/ADM-Sustainable-Soy-Standard_180911_120112.pdf

Feed Material Assurance Scheme (FEMAS)	Soy	Europe	• *No soy cultivation on land that is illegally deforested after the cut-off date mentioned in the relevant national legislation.* • *Areas secured by law must be protected. If alteration has taken place areas must be restored or compensated through legally approved actions*[44].	Low
European Feed Manufacturers' Federation (FEFAC)	Soy	Europe	• *No soy cultivation on land that is illegally deforested after the cut-off date mentioned in the relevant national legislation.* • *Areas secured by law must be protected. If alteration has taken place areas must be restored or compensated through legally approved actions*[44].	Low
The standard for Sustainable Cattle Production Systems	Beef, Leather	Global	Follows the Rainforest Alliance P&Cs (above): Criterion 2.2 (No destruction of forests) enables cattle farms to use the trademark statement "deforestation-free"[57].	High
Global Roundtable for Sustainable Beef (GRSB)	Beef	Global	• *Prioritizes the work of eliminating illegal deforestation and illegal conversion. Beef farmers and ranchers will have access to greater financing from members within the Roundtable and may receive recognition for their contribution to the discontinuation of deforestation*[48].	Low
Sustainable Natural Rubber Initiative (SNR-i)	Rubber	Global	• *The Organisation should demonstrate compliance with relevant local legal requirements and ensure that rubber tree plantations are only established on land that has been officially identified as suitable for rubber plantations or agricultural purposes.* • *The Organisation should ensure that legally protected areas and protected species habitats are respected.* • *The Organisation should ensure that new natural rubber plantations are not established within protected areas*[58].	Low
Global Platform for Sustainable Natural Rubber (GPSNR)	Rubber		Requirements will be announced on 30/03/2023[59].	N/A
International Federation of Organic Agriculture Movements (IFOAM) Organic standard	Soy, palm oil, cocoa	Global	IFOAM Organic states that farming areas installed on land that has been obtained by clearing of HCVAs in the preceding 5 years shall not be considered compliant with this standard. IFOAM does not provide a cut-ff date fixed in time[60].	Medium

[57] SAN-T-LS-3.5-V1 - Technical Module P5 (rainforest-alliance.org)
[58] http://snr-i.org/file/file/SNR-i_KPI_document_June_EN_for_Ref.pdf
[59] GPSNR Reporting Requirements – Global Platform for Sustainable Natural Rubber
[60] MEKON-ECOLOGY-2017-Certification-standards-Deforestation.pdf (mekonecology.net)

4.3. ASSESSMENT OF ADDITIONAL OPTIONS

Table 5 presents an overview of the additional options considered, as well as their effectiveness and feasibility. Further detail for each option is provided in subsequent sub-sections.

Table 5: Summary table on assessment of additional options on effectiveness and feasibility

Option	Definition	Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Tackling imports by introducing 'zero-deforestation' pledges	Expanding existing due diligence to go beyond illegal deforestation and include all deforestation.	Revision of the Environment bill to expand scope needed.	High	Strong evidence exists that a large proportion of deforestation is legal. Due diligence is considered one of the best options for tackling deforestation from trade.[61]	Medium	Traceability and verification of whether a product is deforestation-free may be more challenging for importers.	The cost would be spread between producers and importers and may trickle down to consumers. Disproportionate impact on small producers.
Country risk profile benchmarking system	Thresholds based on deforestation rates as a share of the country's forest area or absolute deforestation figures are set up to classify exporting countries into three categories of risk: low, standard and high risk. Simplified due diligence for low risk, and more complex due diligence for high risk.	Revision of the Environment bill to account for the different due diligence requirements.	Medium	The country risk benchmarking system has the potential to reduce deforestation from trade by another 16%, according to the Study to Support EU policy on forestry and deforestation[62]	High	The measure relies upon deforestation data which is widely available.	The government will bear the cost of setting up the benchmarking system. The cost would be spread between producers and importers and may trickle down to consumers. The measure will reduce costs when dealing with low-risk countries. Disproportionate

[61] It should be noted that the EU impact assessment for its Regulation on Deforestation suggests that due diligence combined with deforestation-free definition can reduce at least 29% of trade-driven deforestation. This was the most effective option assessed in the impact assessment.

[62] Trinomics, Wood, Ricardo, UNEP-WCMC, WUR, Tyrsky (2021) Study to support the EU policy on forestry and deforestation. [Not available online]

Option	Definition	Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
							impacts on small producers.
Standards and certification schemes	Introduce mandatory requirements as part of the GBS that all FRCs should be certified as sustainably produced, across all public bodies.	Revision of the Public Procurement Policy to expand the scope of sustainability criteria for GBS.	High	Mandatory requirements for GBS would commit public bodies to procure certified sustainable products, and further support market transition.	Medium	Reporting requirements and traceability and verification of commodities will be necessary for this option, which can be challenging for importers.	Producers, importers, the UK government, and taxpayers
	Introduce mandatory time-bound targets for the corporate sector on certified sustainable commodities.	Standalone policy to supplement existing policies.	High	Mandatory targets for corporations would commit companies dealing with high FRCs to procure certified sustainable products.	Medium	Reporting requirements and traceability and verification of commodities will be necessary for this option, which can be challenging for importers.	Producers, importers, UK industry, and taxpayers
Maximising alternative sources such as recycling	Making use of available and emerging alternative sources for FRCs. A wide range of mechanisms is available for this option, depending on the commodity.	Depends on the commodity.	Medium	Depends on the commodity. Some products have more viable alternative sources than others. Effectiveness rating would depend on the product, but most are largely medium effectiveness. Recycling only applies to timber and rubber.	Medium	Depends on the commodity. Limited to palm oil, soy, timber and rubber. There are varying degrees of possibility for the recycling and substitution of commodities.	UK government and traders
Promoting sustainable choices	Campaigns to encourage the public to make more sustainable choices.	Standalone policy to supplement existing policies.	Medium	While campaigns can support consumer behaviour changes, they are not fully effective, and the industry must play a role in changing the consumption of FRCs.	High	The measure relies on the reach of campaigns and the availability of relevant data. There may be a tendency by the public to favour British produce, which would not be feasible if the campaign were government produced.	Consumers, producers and importers

Option	Definition	Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
	Mandatory 'Deforestation Free' disclosure-based labelling for all FRCs to enable the consumer to make educated and confident choices about what products they buy	Standalone policy to supplement existing policies.	Medium	Disclosure-based labelling is not as effective as certification and standards-based labelling.	Medium	The measure relies on the availability of relevant data, and the transparency of disclosure-based labels.	Consumers, producers and importers
Sustainability import guarantee	A financial incentive to help to reduce the cost of sustainably sourced commodities versus conventionally sourced commodities. It is intended that by reducing the price difference between sustainable and conventionally sourced commodities, the SIG will incentivise the switch to more sustainable commodity sourcing[63]	Standalone policy to supplement existing policies.	Medium/ High	An incentive for sustainable production. Further evidence is required to assess effectiveness, but overall medium to high impact is expected.	Medium	Limited to palm oil, soy and cocoa but could be rolled out to other commodities. Large commodity importers are not significant users of bank facilitated trade finance which may be a feasibility challenge.	The UK government and the taxpayers.
Measures to increase and capture forest rent	Capturing and increasing 'protective forest rent' through payments for environmental services (PES)	Standalone policy to supplement existing policies.	High	Studies show that PES are effective in preventing deforestation. However, challenging to implement in the absence of clear land ownership.	Low	The option would need to be introduced and implemented in exporting countries. The UK can only influence exporting countries to introduce such legislation through bilateral agreements which are slow to implement and have a small uptake.	Exporting country government to set up the scheme. However, profits will be received from renting forests.
Direct regulation of land use	Direct regulation of levels of forested land in comparison to	Standalone policy to supplement	Medium/ High	High potential but requires substantial monitoring, enforcement and possibly the	Low	The option would need to be introduced and implemented in exporting	Exporting country government

[63] https://www.efeca.com/wp-content/uploads/2021/03/SIG-scoping-study-Full-Report-published.pdf

Option	Definition	Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
	a benchmark or a target. Several legal routes exist.	existing policies.		use of remote sensing. Issues of illegal deforestation will likely persist in the absence of adequate enforcement and financial incentives not due to the economic value of forest products and agricultural commodities.		countries. The UK can only influence exporting countries to introduce such legislation through bilateral agreements which are slow to implement and have a small uptake.	

4.3.1. Tackling imports by introducing 'zero-deforestation' pledges

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Revision of the Environment bill to expand scope needed.	High	Strong evidence exists that a large proportion of deforestation is legal. Due diligence is considered one of the best options for tackling deforestation from trade.[64]	Medium	Traceability and verification of whether a product is deforestation-free may be more challenging for importers.	The cost would be spread between producers and importers and may trickle down to consumers. Disproportionate impact on small producers.

Tackling imports by introducing 'zero-deforestation' pledges represents a revision of the current due diligence requirements under the Environment Bill 2021 to go beyond 'illegal deforestation' and capture all deforestation. According to a report by Forest Trends, at least 30% of tropical deforestation was legal in the 2013-2019 period[65]. This indicates that the current requirements in the UK fail to target a significant proportion of trade-driven deforestation and would be significantly strengthened by deforestation-free requirements.

The introduction and implementation of the strengthened due diligence requirements would not represent a significant additional burden on current requirements. The strengthened due diligence would require a clear definition of forest, deforestation, and deforestation-free. Box 1 presents the definitions put forward by the EU Proposal for a regulation on deforestation-free products.

Box 4-1 Definitions put forward by the EU Proposal for a regulation on deforestation-free products

Forest is defined as: "Land spanning more than 0.5 ha with trees higher than 5m and a canopy cover of more than 10% (land-cover criteria), or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use."

Deforestation is defined as: "the conversion of forest to other land use, including conversion to plantations, independently whether human-induced or not."

Deforestation-free is defined as: "A product/commodity that has neither caused nor contributed towards deforestation or forest degradation."

It should be noted that the mechanism could be further expanded to cover wetland destruction, as wetlands are another major carbon sink.

The key feasibility challenge with this measure is traceability for importers and being able to prove that a product is deforestation-free. As with the existing due diligence mechanism, the cost would be spread between producers and importers and may trickle down to consumers. Further premium might be paid by consumers to reflect the value of a product that is deforestation-free.

Resource shuffling (the potential allocation of deforestation-free commodity production outside of the UK (for example) towards the UK market, while overall deforestation rates of production in the exporting country remains constant) should be a consideration here. As a result of resource shuffling, the enforcement of due diligence on FRCs could cause an increase in additional deforestation-free imports to the UK to satisfying due diligence requirements, without reducing imports that are related to deforestation. However, it should be noted that the same challenge is inherent to the due diligence requirements on illegal deforestation, as defined in the Environment Bill.

[64] It should be noted that the EU impact assessment for its Regulation on Deforestation suggests that due diligence combined with deforestation-free definition can reduce at least 29% of trade-driven deforestation. This was the most effective option assessed in the impact assessment.

[65] https://www.forest-trends.org/wp-content/uploads/2021/05/Illicit-Harvest-Complicit-Goods_rev.pdf

4.3.2. Country risk profile benchmarking system

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Revision of the Environment bill to account for the different due diligence requirements.	Medium	The country risk benchmarking system has the potential to reduce deforestation from trade by another 16%, according to the Study to Support EU policy on forestry and deforestation[66]	High	The measure relies upon deforestation data which is widely available.	The government will bear the cost of setting up the benchmarking system. The cost would be spread between producers and importers and may trickle down to consumers. The measure will reduce costs when dealing with low-risk countries. Disproportionate impacts on small producers.

The EU Proposal for a regulation on deforestation-free products proposes that a country benchmarking system is used to assign a risk level to countries considering deforestation and forest degradation linked to relevant commodities. These assessments would be based on objective, comparable and scientific data. Thresholds based on deforestation rates as a share of the country's forest area or absolute deforestation figures will be set up to classify countries as low, standard and high risk. According to the impact assessment study, this would significantly strengthen the effectiveness of the due diligence requirements and has the potential to prevent an additional 16% of deforestation. This indicates that the measure is effective, and should be considered in the UK as well.

The implementation of this measure would include two aspects:

- Setting up a benchmarking database that assigns risk ratings to exporters and updates regularly.
- Setting up the different due diligence requirements for each risk level.

The government will bear the cost of setting up the benchmarking system. Concerning implementation, the cost would be spread between producers and importers and may trickle down to consumers. The measure is likely to reduce costs when dealing with low-risk countries. An alternative would be to follow the EU benchmarking system, which would ensure consistency and standardisation, and would reduce costs.

A risk related to this option is linked to . Furthermore, there is the potential for resource shuffling, where deforestation commodities are sold to countries with better benchmarking rating that does not implement similar policies as the UK. This would mean that while the UK footprint is reduced, there is no impact on deforestation levels overall.

It should be noted that the European Parliament proposed a draft revision to the European Commission's proposal, which includes only benchmarking for low-risk countries[67]. The proposal has received a mixed reception at the EU level[68].

4.3.3. The role of standards and certification schemes

Extend the scope of mandatory Government Buying Standards (GBS)

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Revision of the Public Procurement Policy to expand the scope of	High	Mandatory requirements for GBS would commit public bodies to procure	Medium	Reporting requirements and traceability and verification of commodities will be	Producers, importers, the UK

[66] Trinomics, Wood, Ricardo, UNEP-WCMC, WUR, Tyrsky (2021) Study to support the EU policy on forestry and deforestation. [Not available online]

[67] https://www.europarl.europa.eu/doceo/document/ENVI-PR-729953_EN.pdf

[68] https://www.endseurope.com/article/1751228/deforestation-regulation-cautious-welcome-parliaments-draft-report

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
sustainability criteria for GBS.		certified sustainable products, and further support market transition.		necessary for this option, which can be challenging for importers.	government, and taxpayers

Government departments and related organisations must meet minimum mandatory standards under GBS when buying goods and services as part of sustainable procurement. Further, the government encourages the wider public sector to meet best practice standards, which go further than the minimum mandatory standards. In terms of FRCs, the GBS currently only requires palm oil to be sustainably produced, which has been mandatory since 2015. However, there is little information available on the uptake of this standard within government departments because of a lack of reporting and transparency[69].

Under the Greening Government Commitments 2021-2025, the government aims to continue to buy more sustainable and efficient products and services and is reviewing tackling deforestation based on the GRI recommendations. The government's response to this recommendation was to consult upon a new Sustainable Food Service Sector Action Plan, which will be delivered through the RSPO and RTRS[70]but has yet to be published (despite being set for publication by 2021).

To go further and tackle deforestation on a wider scale, the government should:

- Introduce a revised version of the GBS to widen its scope and require all FRCs, in addition to palm oil, to be certified as sustainably produced and deforestation-free.
- Make the GBS mandatory and extend it to all public bodies, which can support market transition and reinforce other measures' uptake, such as the DDFRC.

This can be achieved through a revision of the public procurement policy. This is in line with suggestions from WWF and RSPB. With regard to only food products, the public sector is a huge buyer of food: it is estimated that the public sector (including the NHS, prisons and schools) serves 1.9 million meals a year at a cost of £2.4 billion[71]. Tackling procurement within the public sector on forest risk food commodities alone would certainly have an extensive impact.

The government will bear the cost of revising policy and GBS standards. Concerning implementation, the cost would be spread between producers, importers and the taxpayer. The key feasibility challenges here will be maintaining thorough certification and reporting requirements for transparency, and the traceability and verification of commodities, which can be challenging for importers.

Mandatory targets for certification schemes within the corporate sector

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Standalone policy to supplement existing policies.	High	Mandatory targets for corporations would commit companies dealing with high FRCs to procure certified sustainable products.	Medium	Reporting requirements and traceability and verification of commodities will be necessary for this option, which can be challenging for importers.	Producers, importers, UK industry, and taxpayers

Credible sustainability certification is a key option to reduce imported FRCs. Despite efforts from companies involved in high-risk commodity supply chains, which have included industry-led initiatives and commitments to address deforestation, there has not been any significant progress on scaling up commitments to certification schemes. 117 out of 350 (33%) global companies that have the greatest influence on deforestation in FRC supply chains do not have any deforestation commitments, while only 99 (28%) have deforestation

[69] https://www.3keel.com/wp-content/uploads/2020/08/RiskierBusiness_July2020_V7_0.pdf

[70] https://www.gov.uk/government/publications/global-resource-initiative-taskforce-government-response/government-response-to-the-recommendations-of-the-global-resource-initiative

[71] https://www.nationalfoodstrategy.org/the-report/

commitments for all commodities that they are assessed for[72]. Many voluntary commitments from corporations to end deforestation by 2020 have failed, and many targets have been weakened or removed altogether.

To support increased uptake of certification schemes and standards within the UK, the government should introduce:

- A regulatory framework to set mandatory time-bound targets for certified commodities in the corporate sector.

This would ensure that a larger quantity of FRCs entering the UK market would be certified as sustainable and aligns with the DDFRC and the UK's global footprint target.

The government will bear the cost of introducing a regulatory framework to set mandatory targets for the industry. With respect to implementation, the cost would be spread between producers and importers. There are costs related to data gathering and the verification of certification schemes that may create barriers to entry for smaller producers. The key feasibility challenges include maintaining thorough disclosure and reporting requirements for transparency, and the traceability and verification of commodities, which can be challenging for importers. Resource shuffling should be considered here. The introduction of mandatory targets for certification schemes for FRCs within the corporate sector could result in resource shuffling and an increase in additional deforestation-free imports to the UK to satisfying certification targets, without reducing imports that are related to deforestation.

4.3.4. Maximising alternative sources

The substitution and recycling of materials can be used to maximise alternative sources. There is a range of alternative sources available that may be able to support replacing some FRCs.

Substitution of palm oil and palm oil products

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Standalone policy to supplement existing policies.	Low	Palm oil does not have any good, environmentally and economically feasible alternatives. The main potential alternative, insects as animal feed, would only cover a small proportion of the palm oil used in the UK across a range of sectors. Other measures are more effective, such as certification schemes.	Low/ Medium	Incentivising the uptake of insects for animal feed in the UK would likely require changing perceptions of insects as feed, market investment, feed standards, high industry uptake and incentives to foster market adoption.	UK government and traders

Palm oil, including palm kernels, is used across a wide range of industries from food and cosmetics to construction and agriculture. In 2017, palm oil contributed to 5,362 ha risk in the UK annually[73], with the majority of imports coming from Indonesia, Malaysia and Papua New Guinea. Due to its unique properties, vegetable oil is highly challenging to duplicate. In cosmetic brands, palm oil alternatives include blends of rapeseed, sunflower and coconut oils; both rapeseed and sunflower are sustainable substitutions for palm oil, although they do require large swathes of land and high volumes of water for production and take longer to produce. Coconut oil is noted as being worse than palm oil in terms of impact on the environment and deforestation, mainly due to only being grown in tropical locations[74]. Other alternatives for cosmetic uses include oils from shea, jojoba, kokum, and jatropha. Many of these are not as cheap or readily available as palm oil and are in small supply from a limited number of countries, although recent reports indicate there is a

[72] https://forest500.org/sites/default/files/forest500_2022report_final.pdf
[73] https://www.3keel.com/wp-content/uploads/2020/08/RiskierBusiness_July2020_V7_0.pdf
[74] https://www.science.org/content/article/claim-coconut-oil-worse-biodiversity-palm-oil-sparks-furious-debate

new market potential for shea products in Europe, which holds promise for the future of palm oil alternatives in the UK[75].

Infeed for livestock and pets, insects are being used as an alternative to palm oil, replacing the high nutritional value oil with similarly nutritious (and with higher protein content) mealworms that can be grown sustainably on food waste[76]. There is already a large market for insect-based feed, valued at $667.9 million USD in 2017[77].

Palm oil is heavily used in fuel. In 2017, over half of the palm oil imported to the European Union (EU) was used for biofuel; by 2019, the EU announced that palm oil-derived biofuels must be phased out due to their environmental impact. One alternative is algae. Certain algal species such as chlorella produce an oil called biocrude, which can be distilled to be used in diesel, shipping, and aviation fuels[78]. However, algae are costly to grow and feed off sugar (only 4% of the world's sugar supply is sustainably grown[79]). Further, the market for algae-based oils is yet to be able to compete with palm oil.

Palm oil has an incredibly high yield: one hectare of palm oil will reliably produce 4 tonnes of oil per annum. This is compared to 0.67 tonnes/ha/yr for rapeseed, 0.48 tonnes/ha/yr for sunflower, and 0.38 tonnes/ha/yr for soy. In an ideal scenario, palm oil cultivators can produce over 25 times the oil as soy within the same area of farmland. Consequently, any mechanisms that prevent or ban palm oil production would cause a catastrophic rise in deforestation rates, since anything that replaces palm oil will need large areas of land to be grown on[80].

The most effective ways to prevent high-forest-risk palm oil from entering the UK market would be to:

- Introduce mandatory targets for certification, supported through the Sustainable Import Guarantee (below).

  Incentivise the uptake of insect-based alternatives for livestock feed. Invest in research, development and innovation for sustainable palm oil alternatives.

Substitution of soy and soy products

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Standalone policy to supplement existing policies.	High	Soy has a wide range of feasible alternatives for the feed and fuel sectors in the UK. Many of these are already in use.	High	Incentivising the uptake of soy alternatives will require new industry standards, incentives to foster market adoption, high industry uptake	UK government and traders

Soy is used in a range of products, including food, feed, and fuel. In 2017, palm oil contributed to 1,854 ha risk in the UK annually[81], with imports coming from Brazil and Paraguay. Soybean meal is a favoured high-protein feed for livestock, with over one million tonnes used for UK pig, poultry and dairy cows every year. UK farmers should aim to reduce their reliance on imported feeds such as soybeans. Grass, which the UK has a ready supply of, and crops such as fodder beets, carrots, turnips and kale are all suitable replacement feeds[82]. As with palm oil, insects are also a good alternative for livestock feed, with WWF stating that adopting insects as animal feed could replace over half a million tonnes of soy from the UK's footprint[83].

Soybean is used as a feedstock for biofuels. A report by Transport & Environment recommended that the EU should label soy as a high indirect land-use change (ILUC) risk feedstock in the Renewable Energy Directive

[75] https://www.cbi.eu/market-information/natural-ingredients-cosmetics/shea-butter/market-potential

[76] Benzertiha, A., Kierończyk, B., Rawski, M., Kołodziejski, P., Bryszak, M. and Józefiak, D., 2019. Insect oil as an alternative to palm oil and poultry fat in broiler chicken nutrition. Animals, 9(3), p.116.

[77] https://www.futuremarketinsights.com/reports/insect-feed-market

[78] Tseng, Y.H., Mohanty, S.K., McLennan, J.D. and Pease III, L.F., 2019. Algal lipid extraction using confined impinging jet mixers. Chemical Engineering Science: X, 1, p.100002.

[79] http://www.corbion.com/about-corbion/corbion-stories/on-the-road-to-sustainable-sugar-cane

[80] https://www.bbc.com/future/article/20200109-what-are-the-alternatives-to-palm-oil

[81] https://www.3keel.com/wp-content/uploads/2020/08/RiskierBusiness_July2020_V7_0.pdf

[82] Wilkinson, J.M. and Young, R.H., 2020. Strategies to reduce reliance on soya bean meal and palm kernel meal in livestock nutrition. Journal of Applied Animal Nutrition, 8(2), pp.75-82.

[83] https://www.wwf.org.uk/press-release/insects-animal-feed-report

(RED) II, and phase soybean feedstock out by 2030[84]. There are additionally other alternative feedstocks to soybean. Firstly, first-generation biodiesels can be produced from recycled waste and residues, such as animal fat waste from the food industry, or fish-cleaning waste, and other second-generation biodiesels (agricultural products such as oilseed, coarse grain, and plants) such as sunflower or rapeseed can be used, which already have strong existing supplies in the UK and Europe. Secondly, bioethanol can be used as an alternative, which is produced from high-sugar content coarse grain or plants such as corn and wheat; first-generation bioethanol is also available, such as from used cooking oils[85].

The government should seek to:

- Incentivising the uptake of alternatives for the feed and fuel sectors to reduce the UK's reliance on soy and soy products.

Recycling of timber and timber products

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Revision of the Environment Bill to amend ambitions and targets. Revision to the Resource and Waste Strategy to amend targets for timber recycling.	Medium/ High	Facilitating the recycling of timber and investing in recycling facilities and services would increase recycling rates.	Medium	Effectiveness of campaigns relies on data availability. Improvement of recycling services will require financial and capacity building support.	UK government and traders

Only 20% of timber used in the UK is grown domestically. In 2017, timber imports from Brazil, Chile and Malaysia contributed to 1,996 ha risk for the UK annually[86]. However, in 2020, over 4.5 million tonnes of wood waste was produced in the UK, of which 4 million tonnes were recycled[87]. Around 65% of this recycled wood waste is chipped and burnt in power stations to produce electricity. Several civil sector organisations support wood recycling across the UK, such as Community Wood Recycling, which states that much more waste timber should be sorted, with reusable wood separated and not chipped. Further, not all recycling centres and locations in the UK accept timber waste, preventing the public from recycling wood. Some recycling labels exist in the UK, mainly for paper and board products derived from reclaimed timber fibre. These include the FSC on-product recycled label (certification standard) and the Mobius Loop and National Association of Paper Merchants labels (disclosure-based labels; discussed below). However, these are not all third-party verified, and the Mobius Loop often indicates that a product can be recycled but might not be made from recycled material itself.

The government should seek to:

- Introduce campaigns to encourage the public to recycle more timber.
- Facilitate financial and capacity-building support for local authority recycling centres and other locations across the UK, to ensure they have the capacity to recycle timber.
- Facilitate financial and capacity-building support for civil sector recycling organisations.

[84] https://www.transportenvironment.org/wp-content/uploads/2021/07/2020_11_TE_soy_study_briefing.pdf
[85] https://www.agflow.com/commodity-trading-101/where-to-source-soybean-other-feedstocks-for-biodiesels-renewable-fuels/
[86] https://www.3keel.com/wp-content/uploads/2020/08/RiskierBusiness_July2020_V7_0.pdf
[87] https://communitywoodrecycling.org.uk/what-we-do/waste-wood-in-the-uk/

Substitution and recycling of rubber and rubber products

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Revision of the Environment Bill to amend ambitions and targets. Revision to the Resource and Waste Strategy to amend targets for rubber recycling.	Medium	Substitution of rubber is not feasible given the current available alternatives. Facilitating the recycling of rubber and investing in recycling facilities and services would increase recycling rates. Other measures such as certification schemes would be effective in conjunction with recycling schemes.	Medium	Effectiveness of campaigns relies on data availability. Improvement of recycling services will require financial and capacity building support	UK government and traders

Rubber products are split into three main categories: tyres, industrial rubber goods, and consumer rubber goods. Approximately 55 million waste tyres are generated annually in the UK[88]. Tyres and rubber products contain pollutants and heavy metals that can be harmful to the environment if not disposed of correctly. Consequently, the recovery and recycling of tyres and rubber products have been mandatory in the UK since 2002, which has catalysed many opportunities for tyre recycling and recovery in the UK. Recycled tyres and rubber have many uses, from football pitches and gravel substitutes to low carbon fuels and filters in wastewater treatment plants.

There is a range of alternative rubber sources including guayule, a native shrub in a plateau region of Mexico, and Russian or Kazak dandelion, a plant that produces high-quality rubber that is found in Kazakhstan but can be grown elsewhere. Currently, 1% of the world's rubber comes from guayule; however, in comparison to traditional natural rubber, the quality is lower and the process for extraction is longer. Kazak dandelions only contain rubber that is useful for extraction in the roots, making it too expensive to feasibly extract useful amounts of rubber at this time[89].

As with palm oil, there are not many viable alternatives to rubber, and as with timber, there are already mechanisms that enforce the recycling of rubber and rubber products. The government should seek to:

- Strengthen rubber certification schemes, considering mandatory options for the industry (as detailed above).
- Campaigns to encourage the public to recycle more rubber.
- Introduce financial and capacity-building support for local authority recycling centres and other locations across the UK, to ensure they have the capacity to recycle rubber.
- Invest in research, development and innovation for sustainable rubber alternatives.

[88] https://www.gov.uk/government/publications/2010-to-2015-government-policy-waste-and-recycling/2010-to-2015-government-policy-waste-and-recycling

[89] Van Beilen, J.B. and Poirier, Y., 2007. Establishment of new crops for the production of natural rubber. TRENDS in Biotechnology, 25(11), pp.522-529.

4.3.5. Promoting sustainable choices

Consumer education and engagement through campaigns

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Standalone policy to supplement existing policies.	Medium	While campaigns can support consumer behaviour changes, they are not fully effective, and the industry must play a role in changing the consumption of FRCs.	High	The measure relies on the reach of campaigns and the availability of relevant data. There may be a tendency by the public to favour British produce, which would not be feasible if the campaign were government produced.	Consumers, producers and importers

Promoting sustainable choices would encourage consumer behaviour change, shifting to a more sustainable rate of consumption and opting to purchase more sustainable commodities, facilitated through consumer education and engagement. The 2020 GRI report[90] recommended that consumer engagement should be one of the government's focuses, taking action to support a consumer transition to more sustainable and healthy diets and reduce end-use waste.

Educating consumers through campaigns about the impact of their food consumption choices on deforestation and land conversion should be an important part of any policy package, encouraging the consumption of sustainably certified FRCs and alternative commodities and supporting the reduction of meat consumption. However, it cannot be effective without providing them with information about the deforestation impact of products. Therefore, it needs to be part of a larger package of measures centred on certification and labelling alongside other supply chain governance initiatives that provide consumers with meaningful information on the sustainability and impact of FRC supply chains. This package of measures would include greater uptake in disclosure-based labelling (as detailed in section 3.2.2) and certification standards to give the consumers' confidence in their choices. Campaigns could be facilitated either by the government, supported by strategies such as the National Food Strategy or by commodity retailers who could be obliged by law to create a certain number of campaigns a year. Promoting sustainable choices and encouraging positive changes in consumer behaviour can have wider impacts on production and supply chains of other products. For instance, promoting consumers to reduce their meat consumption can have a domino-effect on the production and supply of soy feed products coming into the UK, with the potential to decrease deforestation rates in both beef and soy value and supply chains. By aligning consumption-related policies with production-supply chain policies there is likely to be a greater impact on deforestation rates.

While there may be a tendency for the public to favour British produce, government campaigns must not explicitly promote the consumption of domestic over imported goods in ways that go beyond the provision of unbiased information. Further, campaigns would be most appropriate for products purchased directly by consumers rather than agricultural inputs like fertiliser or feedstock. The government would bear the cost of this measure.

Mandatory 'Deforestation Free' disclosure-based labelling

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Standalone policy to supplement existing policies.	Medium	Disclosure-based labelling is not as effective as certification and standards-based labelling.	Medium	The measure relies on the availability of relevant data, and the transparency of disclosure-based labels.	Consumers, producers and importers

[90] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/881395/global-resource-initiative.pdf

Mandatory disclosure-based labelling is another measure to promote sustainable consumer choices by enabling the consumer to make informed and confident decisions about their choice of products. This option would specify environmentally relevant information such as whether the commodity is deemed deforestation-free, or details of its processes of production, similar to free-range or organic labels. Disclosure-based labelling differs from certification schemes as it would provide a direct signal to the customer that the producer is deforestation-free, whereas certification schemes' criteria can vary widely (as detailed in Table 3), and they can be often ambiguous as to their criteria for deforestation. However, disclosure standards do not necessarily require higher standards than certification schemes, particularly those that cover human rights and fair wage criteria, for example.

The government should:

- Propose and facilitate a framework to set time-bound targets for producers, importers and retailers to apply deforestation-free labelling requirements for FRCs entering the UK market.

This would shift consumer patterns and so influence the market in favour of more sustainable products. Disclosure-based labelling could cover business-to-consumer products, and/or business-to-business wholesale products. This aims to encourage consumers to choose products that are not linked to deforestation over competitor's products, thus encouraging producers to halt deforestation to remain competitive.

Similarly, for the option for mandatory certification schemes for industry (above), mandatory labelling measures that seek to disclose the environmental harms associated with the production of particular goods must be carefully designed. They must not create a commercial disadvantage for imported goods of particular origin without adequate justification. The labelling requirements imposed must be necessary and rationally designed.

The government will bear the cost of introducing a regulatory framework to set support retailers in introducing a deforestation-free labelling system. With respect to implementation, the cost would be spread between producers, importers and consumers. There are costs related to data gathering and the verification of certification schemes that may create barriers to entry for smaller producers. With respect to implementation, the cost would be spread between producers and importers. The key feasibility challenges here will be maintaining thorough disclosure and reporting requirements for transparency, and the traceability and verification of commodities, which can be challenging for importers.

4.3.6. Sustainable import guarantee

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Standalone policy to supplement existing policies.	Medium/ High	An incentive for sustainable production. Further evidence is required to assess effectiveness, but overall medium to high impact is expected.	Medium	Limited to palm oil, soy and cocoa but could be rolled out to other commodities. Large commodity importers are not significant users of bank facilitated trade finance which may be a feasibility challenge.	The UK government and the taxpayers.

The sustainability import guarantee is a financial incentive measure to help to reduce the cost of sustainably sourced commodities versus conventionally sourced commodities. It is intended that by reducing the price difference between sustainable and conventionally sourced commodities, the sustainable imports guarantee will incentivise the switch to more sustainable commodity sourcing[91]. It was recommended by the GRI Taskforce set up by the UK Government[92].

It should be noted that the UK government is assessing the case for implementing a Sustainable Import Guarantee and has set up a Working Group with the Green Finance Institute bringing together government

[91] https://www.efeca.com/wp-content/uploads/2020/03/GRI-Taskforce-Final-Recomendations-Report.pdf

[92] https://partnershipsforforests.com/wp-content/uploads/2020/04/GRI-Final-Recommendations-Full-Report-2020-v2.pdf

and banking sector representatives to look at this in more detail[93]. So far, the studies have focused on **palm oil, soybean and cocoa** but the scope may be extended.

The interim analysis shows that[94]:

- **The market for sustainable commodities would benefit from an incentive to complete the transition to 100% certified sustainable**. The analysis showed that the sustainable palm oil market is most matured, followed by the soybean market and finally cocoa. The analysis considered the import guarantee an effective method to increase sustainable certification.
- **Lessons learnt from existing sustainability frameworks could provide a basis for the sustainable import guarantee criteria,** thus simplifying the design of the mechanism.

The key barrier identified relates to the limited use of trade finance by large importers. According to the report, the three commodities are imported by a small number of large trading companies. Consulted importers reported that because they are very large with good financial ratings and sufficient liquidity, they can fund commodity trades from their balance sheet, using cash or raised finance, without using bank lending to finance their commodity trading. If palm oil, soy and cocoa importers and large manufacturers are not using trade finance, it may not be possible to apply a guarantee as currently envisaged[95].

Further areas for consideration mentioned by consulted importers include whether the guarantee can be applied further up the supply chain to support producers and whether it can be extended to processed products[96]. The measure can work together with a quota system requiring a proportion of the product to be sustainable, with the quota increasing each year.

4.3.7. Measures to increase and capture forest rent

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Standalone policy to supplement existing policies.	High	Studies show that PES are effective in preventing deforestation. However, challenging to implement in the absence of clear land ownership.	Low	The option would need to be introduced and implemented in exporting countries. The UK can only influence exporting countries to introduce such legislation through bilateral agreements which are slow to implement and have a small uptake.	Exporting country government to set up the scheme. However, profits will be received from renting forests.

Forests have economic, ecological and social values[97]. Forest rent is the economic return from forest ownership. The measure considered here specifically relates to increasing 'protective' forest rent (i.e. aiming to maintain forest cover) rather than 'extractive' (i.e. aiming to incentive the extraction of resources, and hence deforestation)[98]. This can be done through the creation of institutions such as community forest management or markets (e.g. environmental services). Because of its public goods nature, an increase in the protective rent has no impact on deforestation unless land users can capture some share of it. This can be done through the payment for environmental services (PES), which are payments to farmers or landowners who have agreed to take certain actions to manage their land. Studies have shown that PES have a high impact on maintaining forest cover[99]. However, large tracts of tropical forests are characterised by weak, unclear, and contested property rights, which would make the recipient of PES difficult to identify and would hinder the implementation of this measure[100]. Therefore, the measure would need to be implemented with direct regulation of land use.

[93] https://www.gov.uk/government/publications/global-resource-initiative-taskforce-government-response/government-response-to-the-recommendations-of-the-global-resource-initiative

[94] https://www.efeca.com/wp-content/uploads/2020/03/GRI-Taskforce-Final-Recomendations-Report.pdf

[95] https://www.efeca.com/wp-content/uploads/2020/03/GRI-Taskforce-Final-Recomendations-Report.pdf

[96] https://www.efeca.com/wp-content/uploads/2020/03/GRI-Taskforce-Final-Recomendations-Report.pdf

[97] https://www.researchgate.net/publication/319903347_Resource_Rent_Capture_in_the_Management_of_Indonesia's_Natural_Production_Forests_A_research_essay_in_partial_fulfilment_of_the_degree_of_Master_of_Forestry

[98] https://www.pnas.org/doi/10.1073/pnas.0912014107#sec-2

[99] https://journals.sagepub.com/doi/full/10.1177/21582440211040774

[100] https://www.pnas.org/doi/10.1073/pnas.0912014107#sec-2

In addition, there are questions with regard to the funding of this measure, which would be the government based but funds would need to be raised for it. A further challenge is forest degradation which may not be fully addressed by this measure. Finally, the protection of forests conflicts with national objectives of reducing poverty and hunger and increasing agricultural production which raises questions as to whether exporting countries would be willing to introduce protective forest rent capture measures.

From the UK's perspective, the key limitation of this option is that it would need to be introduced and implemented in exporting countries. The UK can only influence exporting countries to introduce such legislation through bilateral agreements. The experience of the EU with the Forest, Law, Enforcement, Governance, Trade (FLEGT) Regulation showed that while bilateral agreements can help improve governance and engagement in the forest sector in exporting countries, the actual impact on logging is minor, the uptake of the agreements is low and the implementation is slow.[101]

4.3.8. Direct regulation of land use

Fit in the current policy context	Effective-ness	Justification	Feasibility	Justification	Cost burden
Standalone policy to supplement existing policies.	Medium/ High	High potential but requires substantial monitoring, enforcement and possibly the use of remote sensing. Issues of illegal deforestation will likely persist in the absence of adequate enforcement and financial incentives not due to the economic value of forest products and agricultural commodities.	Low	The option would need to be introduced and implemented in exporting countries. The UK can only influence exporting countries to introduce such legislation through bilateral agreements which are slow to implement and have a small uptake.	Exporting country government

Land-use regulation falls into three broad categories[102]:

- restriction on the use of land through tort law, i.e. where the owner is liable for certain activities on the land such as illegal logging/deforestation
- private regulation by agreement, which defines the use of the land and runs with it when it changes ownership.
- public ownership or regulation through the powers of eminent domain (i.e. where the government takes private land for public purposes) and zoning (regulating the type of use of the land).

The specific method would depend on the legal system of the country where it is implemented. A further option would be to set national targets or reference levels for the forest cover. This option could be combined with the categories listed above.

An important consideration is that many of the countries with prevailing deforestation are already regulating land use, but weak enforcement leads to illegal logging, deforestation and land conversion to retrieve economic benefits[103]. The lack of compensation for private landowners who are asked to set aside their land for conservation is a perceived weakness. Overall, the design and enforcement of the regulation will determine its effectiveness. Remote sensing can be used as an effective means to monitor forest cover.

The key limitation of this option is that it would need to be introduced and implemented in exporting countries. As above, the UK can only influence exporting countries to introduce such legislation through bilateral agreements which are slow to implement and have a small uptake.

[101] https://ec.europa.eu/environment/forests/pdf/SWD_2021_329_1_EN_Summary%20EUTR-FLEGT%20Reg%20fitness%20check.pdf

[102] https://saylordotorg.github.io/text_business-law-and-the-legal-environment-v1.0-a/s36-04-regulation-of-land-use.html#:~:text=Land%20use%20regulation%20falls%20into,of%20eminent%20domain%20and%20zoning

[103] https://www.climatepolicyinitiative.org/wp-content/uploads/2017/10/Forest_and_Land_Use_Policies_on_Private_Lands-an_International_Comparison-1.pdf

5. CROSS CUTTING CONSIDERATIONS

While the main purpose of this report is to identify and offer a high-level assessment of a range of individual policy options that could be deployed to address possible carbon leakage associated with agricultural products within the UK and deforestation of deforestation risk commodities to the UK, a number of cross-cutting issues are worth noting prior to drawing any conclusions.

Combinations of measures

By design, this report has focused on the identification and assessment of individual policy measures, considering them independently of one another. However, combinations of measures are possible and may be the most effective form of intervention, not least in addressing both carbon leakage and deforestation in a combined strategy, which might include both a supply side and a consumer dimension. Multilateral initiatives can be taken forward alongside bilateral initiatives, which have prominence at the moment given the UK's active engagement with partners on the negotiation of FTAs. Neither excludes the use of unilateral measures in parallel, although attention would need to be paid to overall coherence. Furthermore, trade measures can be combined with consumer measures and more general sponsorship to help the supply side.

WTO

When considering trade measures, it is important to consider the compatibility of these with the UK's obligations under the WTO. This is an important consideration in assessing the legal and political acceptability of a number of different options. As noted already, there are some areas where the UK appears to have options which are compatible with WTO law, especially if measures are designed in a meticulous way and the requisite facts can be established with sufficient authority but this does not mean that a challenge under WTO law can be ruled out. One concrete example in relation to deforestation is the assessment [104]made in relation to the UK/Australia FTA by the Trade and Agriculture Commission in their recent report:

"In the event of any deforestation with an impact on agricultural exports to the UK, the UK has a limited set of legal options. As under WTO law, the FTA does not give the UK a right to protect Australian resources, including its forests. The situation is, however, different in the event of any net deforestation, if this contributes to climate change, a question which itself involves complicated factual and legal issues. While this is still untested, it is likely that the UK is entitled under WTO law, and the FTA, to restrict trade in order to combat climate change, to the extent that this can be seen as conserving an 'exhaustible natural resource' which is either a UK natural resource or part of the global commons. In any event, the UK would be able to raise the issue of deforestation with Australia in the FTA's Environment Working Group."

A general reform of the WTO rules is a difficult and long-term strategy. Building an international coalition around sustainability standards and metrics is itself an important part of the strategy of clarifying WTO rules. Such coalition would demonstrate international support for an approach which would make the adoption of this appraoch by the WTO panel more likely.

Strategic Engagement

Clearly there are differences between what can be negotiated between two trading partners in the context of an FTA and those policy options that would be introduced unilaterally or in cooperation with certain likeminded states and would impact on all the UK's trading partners. The readiness of trading partners to accept initiatives that restrict trade in certain respects is an important factor in their viability. Consequently, there are strong arguments in favour of adopting a wider programme of diplomacy and strategic engagement with trading partners when advancing trade policy options which impinge on them. This seems more likely to generate dialogue and constructive negotiation and reduce the likelihood of outright opposition than a process of incubating policy options within domestic UK institutions and then launching them on the wider international community in what may appear an unacceptably unilateral fashion.

A diplomatic strategy to advance a trade agenda with a sharper focus on climate and the avoidance of climate leakage could contain a number of elements. For example, it might include multilateral initiatives within the WTO and elsewhere, investment in building MRV mechanisms that are able to win the trust of trading partners as well as being technically robust, investment in partnerships and dialogue with individual trading partners

[104] https://www.gov.uk/government/publications/uk-australia-fta-advice-from-trade-and-agriculture-commission/trade-and-agriculture-commission-advice-to-the-secretary-of-state-for-international-trade-on-the-uk-australia-free-trade-agreement-web-version

and in the broader question of reconciling development and climate goals, the provision of targeted aid to help address specific challenges and related measures. It might involve the combined deployment of several of the individual measures reviewed in this report and careful consideration of the most helpful and effective sequencing of measures and supporting actions in relation to building consensus and avoiding legal challenge. Such an approach could be characterised by the demonstration of constructive intent and willingness to engage.

It should be noted that the UK is already providing diplomacy and sponsorship in the area of deforestation. However, it is important that the international engagement efforts are coordinated with any domestic trade measures to achieve the highest impact.

Resource shuffling

One limitation common to several trade-based measures, including due diligence and the imposition of CES requirements of imports, is that they may motivate the trading partner, or companies involved in exporting from the country concerned, to divert trade to other foreign or domestic markets rather than meet the conditions required to enter the UK market. Supplies to the UK may then switch to other, possibly less optimal, sources and net global GHG emissions remain unchanged. For example, companies sourcing forest related commodities may pull out of countries where there are difficulties in meeting environmental requirements and source elsewhere rather than investing in improved practices that would reduce net emissions. This is sometimes referred to as resource shuffling and clearly is a greater hazard if the UK acts alone, unless it is a large export market in global terms. Co-ordinated action by major players or global institutions is preferable to unilateral measures to reduce the risks of resource shuffling.

However, such co-ordinated action takes time to arrange and has an uncertain outcome and for these reasons there remains a rationale for unilateral or more narrowly supported initiatives, particularly where environmental change is needed urgently. Change often is initiated by unilateral proposals. Experience also suggests that many exporting countries tend to adopt the standards required by the most demanding market that they supply on any scale, as noted in the recent TAC report on the UK/Australia FTA.[105] There is also scope for deploying complementary measures to reduce the risks of resource shuffling, for example in the form of targeted aid to developing country exporters to assist the process of improved resource management, monitoring arrangements and institution building and so to enable compliance with more demanding UK requirements.

Consumer engagement

Consumer engagement measures include labelling, education, information provision, work with representative organisations etc. They can be linked closely to other measures such as enhanced sustainability standards for public procurement. There is a major role for a range of domestic actors in this sphere, including the food industry, retailers, schools, developers of labels and certification systems etc. Government can either stand back from the process or seek to strengthen it and ensure that it is as coherent as possible with trade related measures. Labels with a statutory underpinning, such as that for organics, potentially have a role within this spectrum. Generally, consumer engagement interventions are complementary to more trade policy focused measures and more informed consumers are essential to meeting climate and other environmental goals. In addition, dietary change has potentially high impact on reducing GHG emissions and deforestation and is an important element in solving these environmental challenges. Given this and the relatively low barriers to policy deployment there is a particularly strong rationale for this policy strand within an overall strategy.

Transportation of goods

Transport of goods, domestically and across borders, entails GHG emissions and other environmental costs. This is a consideration when seeking to reduce the environmental footprint of agri-foods, some of which are bulky and traded in substantial volumes. Some products, including flowers, are transported by air on a significant scale. Whilst largely outside the scope of this report there may be scope for initiatives that focus specifically on the reduction of emissions, either through international bodies such as the IMO, or through different channels.

[105] TAC 2022 op cit.

6. CONCLUSIONS AND RECOMMENDATIONS

This study has provided an overview of a catalogue of trade policies to manage carbon leakage from agricultural products, and deforestation from the imports of deforestation risk commodities. The conclusions for each topic are presented below in turn. Overall, trade measures have the potential to reduce carbon leakage and deforestation, and a combination of measures across the supply chain and on the consumer side would be most efficient to avoid resource shuffling.

6.1. AGRICULTURE

There is a wide panorama of potentially applicable policy measures related to trade in agri-foods and also largely complementary consumer focused policy options. Several of these are established already in some form or are in the process of development, such as CBAM in the EU. Others however are more theoretical and are relatively or completely untested. Further investment in research to develop the evidence base to permit targeted interventions and to examine aspects of potential policy measures in more depth would facilitate better policy choices.

Certain of these models are particularly or wholly associated with climate mitigation or other environmental objectives; ETS is a case in point. Others could be applied in pursuit of different non-market objectives, such as improved farm animal welfare or the reduced use of antibiotics in animal production (the topic of a recent EU measure that has yet to be applied).

The breadth of agri-food products that could realistically be covered varies considerably between options. At this stage, CBAMs seem much better suited to inorganic fertilisers and their principal ingredients than to other traded products. The scope for applying ETS to primary agricultural production seems limited without a much more robust evidence base but this may develop relatively rapidly, particularly if there is significant investment by the UK and other governments to build this up. On the other hand, there is scope for widening the use of certain measures. For example, the application of due diligence could be extended beyond the Government's current proposals for forest risk products.

There is scope for combining groups of policy measures, including the voluntary and mandatory, the unilateral and multilateral, the sharply focused (GHG emissions only for example) with those with a wider environmental compass. Consumer engagement policies can and should be developed and deployed alongside those more rooted in trade policy. Since some options could in principle be deployed relatively rapidly and on a unilateral basis, these have a place within a coherent strategy alongside more optimal policies, such as agreements on new global standards, the timescale for which is likely to be protracted.

Given the multiple environmental impacts of agri-food supply chains and the importance of farming and land use to meeting biodiversity objectives, policy measures that cover more than climate objectives have particular value. This strengthens the case for further investment in the development of potentially multi-objective options such as core environmental standards, even though the challenges are considerable. It is an important consideration in developing consumer engagement policies where there is also a need to address a number of non-environmental objectives as well.

WTO compatibility is a key issue for a number of untested policy options and some that are in use already. However, the need to respect WTO rules does not preclude most approaches if the design details are right and are rigorous on level playing field aspects.

There are strong arguments for UK to take the lead in setting up a global framework for assessing and addressing food sustainability standards globally, as the TAC recommended. This is a long-term project and does not preclude the deployment of other policies in the shorter term. Amongst other things it would be a concrete manifestation of sincere intent and would sit well within a broader strategy of engagement and international leadership on this issue.

Progress in this area depends on the development of a more robust evidence base, for example covering primary production in the UK and trading partner countries, documenting environmental footprints of different crops and livestock, allowing comparison between different standards and regulatory regimes, deepening understanding of impacts on production costs etc. This may fall between traditional agricultural, environmental and trade policy areas but needs to be advanced to underpin the type of policies reviewed here.

This should be progressed alongside a deeper investment in MRV systems suited to the particular characteristics of agri-food supply chains and associated land uses.

The acceptability and viability of trade related measures to the UK's trading partners is a critical issue. Experience suggests that they are more likely to be receptive to measures that have been floated and discussed in advance and presented within a programme of serious engagement rather than appearing more abruptly through a unilateral process. The extent to which development considerations have been addressed and incorporated into a potential suite of measures is one dimension of this. Developing a UK engagement strategy with appropriate diplomatic strands and a coherent overall approach, potentially combining a spectrum of different measures, would be a significant step in this direction. It would need to demonstrate sincere intent to address the environmental challenge in an even-handed way rather than an excessive focus on protecting the interests of UK producers.

6.2. DEFORESTATION

The analysis of deforestation risk commodities entering the UK market suggested that besides the traditional commodities of timber, beef, pulp and paper, leather, soy, palm oil, rubber and cocoa, other key tropical deforestation commodities may include coffee, sugar, pepper and nutmeg. Further analysis of trade data and land use change is required to understand the overall UK impact and which commodities are most important to target. This study has particularly not been able to provide insights regarding non-tropical deforestation risk commodities.

The analysis of the UK policy landscape to address deforestation indicated that additional measures could be implemented, particularly on the consumer side where no existing measures could be identified.

While this study is meant as a high-level assessment of available policy options, some recommendations can be drawn. For instance, increasing the scope of the existing due diligence mechanisms to cover all deforestation rather than just illegal deforestation is an important sentiment. Otherwise, the UK may not reduce its deforestation footprint substantially but simply switch to products from legal deforestation. Furthermore, for due diligence to be an effective measure, it requires similar action across countries. This has two-fold implications: Firstly, by setting the bar lower than the EU, the UK is opening up to resource shuffling of trade meant for the EU to the UK. Secondly, as a global leader, it is important for the UK to set an ambitious example.

While existing analysis has shown that the benchmarking system proposed by the EU has potential to reduce imports of deforestation linked commodities, the potential for resource shuffling is high. Therefore, such measure might be better suited when most global importers of forest risk commodities have put similar import rules in place.

While not considered in this report in the context of deforestation, FTAs may be used in the same way described for carbon emissions in agriculture here. However, a key consideration is ensuring that they go further than already existing measures and agreements. This is an area of further research.

The sustainable import guarantee could potentially help importers reduce the higher costs of due diligence compliant or in general sustainable commodities. Further research is required to understand how this approach can work in the context of current limitations linked to the narrow use of trade finance by key importers.

Making the Government Buying Standards mandatory and expanding them to all forest risk commodities can have a large impact, specifically in relation to food commodities and products due to the size of UK governments purchases of such products.

Targeting the UK consumer and encouraging them to make more sustainable choices, changing their diets, and extending the lifetime of a product is key to reducing UK's overall impact on deforestation.

Finally, it is important for these measures to go hand in hand with international cooperation, diplomacy and sponsorship. This would help encourage other world leaders to step up with similar initiatives, for trade partners to introduce domestic policies, and for small producers to receive support to meet the higher production costs associated with sustainable production. As above, it is important that domestic and international action is coordinated to achieve the best results.

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