

Title: Improvements to animal welfare in transport IA No: RPC Reference No: Lead department or agency: Defra Other departments or agencies: N/A		Impact Assessment (IA)			
		Date: 18 December 2020			
		Stage: Consultation			
		Source of intervention: Domestic			
		Type of measure: Primary and secondary legislation			
		Contact for enquiries: AnimalWelfare.Consultations@defra.gov.uk			
Summary: Intervention and Options		RPC Opinion: RPC Opinion Status			
Cost of Preferred (or more likely) Option (in 2019 prices)					
Total Net Present Social Value	Business Net Present Value	Net cost to business per year	Business Impact Target Status		
-£58.7m	-£58.7m	£6.8m	34.1		
What is the problem under consideration? Why is government intervention necessary?					
<p>The transport of animals on long journeys may have adverse impacts on an animal's welfare. Such journeys give rise to negative externalities, information asymmetries, but in the context of animal welfare it is difficult to capture this in a normal economic framework as the value of animal welfare is tricky to ascertain. The current rules aimed at protecting animal welfare in transport are derived from directly applicable European Union (EU) law, Council Regulation (EC) No 1/2005. Available scientific evidence indicates that all forms of transport are considered stressful for animals and may negatively impact on welfare. The United Kingdom (UK) and Welsh Governments¹ want to minimise journey times wherever possible and ensure that animal welfare regulations reflect the latest scientific evidence where possible. Government intervention is therefore necessary to improve animal welfare and adequately reflect the most recent review of the scientific evidence base on improvements to transport conditions.</p>					
What are the policy objectives and the intended effects?					
<p>The policy objectives are: to improve the welfare of animals in transport; to achieve this in a proportionate way; and to meet the UK Government's manifesto commitment to end excessively long journeys of animals for slaughter and fattening. The intended outcomes are to improve the welfare of animals through improving welfare standards in transport where animals are at greater risk of stress and other poor welfare conditions. The second objective ensures this is achieved in a proportionate way, examining the burden on animal transporters, the wider industry and permitting longer movements where this is justified for animal welfare reasons. The third objective is to implement the UK Government's manifesto commitment.</p>					
What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)					
Option 0: Baseline scenario – do nothing.					
Option 1: Implement improvements to animal welfare for all journeys to, from and within England and Wales, based on the Farm Animal Welfare Committee's (FAWC) recommendations on journey times and transport conditions. Exports and imports to and from England and Wales, as well as transit journeys through either country will be within scope.					
Option 2: End live animal exports (excluding poultry) in England and Wales for slaughter and fattening where the animal would be slaughtered within 6 months of arrival, for export journeys beginning in or transiting through either country.					
Option 3 (Preferred Option): Implement improvements to animal welfare for all journeys to, from and within England and Wales based on FAWC's recommendations on journey times and transport conditions, in addition to ending live animal exports (excluding poultry) in England and Wales for slaughter and fattening where the animal would be slaughtered within 6 months of arrival, for export journeys beginning in or transiting through either country. This is a combination of Options 1 and 2 and is the preferred option as it best meets the policy objective.					
Option 4 (non-regulatory): A voluntary assurance and associated labelling scheme recommending that producers follow transport guidelines as set out in Option 1.					
Will the policy be reviewed? It will be reviewed. If applicable, set review date: 5 years after introduction					
Does implementation go beyond minimum EU requirements?			Yes		
Is this measure likely to impact on international trade and investment?			Yes		
Are any of these organisations in scope?		Micro	Yes	Small	Yes
		Medium	Yes	Large	Yes

¹ UK and Welsh Governments referred to jointly as 'the Government' from hereafter unless otherwise stated.

What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded: Negligible	Non-traded: Negligible
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I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY Date:

Summary: Analysis & Evidence

Policy Option 1

Description: Implement improvements to animal welfare for all journeys to, from and within England and Wales, based on the Farm Animal Welfare Committee's (FAWC) recommendations on journey times and transport conditions. Exports and imports to and from England and Wales, as well as transit journeys through either country will be within scope.

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2021	Time Period Years: 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -73.8	High: -36.9	Best Estimate: -55.3

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0	4.3	36.9
High	0	8.6	73.8
Best Estimate	0	6.4	55.3

Description and scale of key monetised costs by 'main affected groups'

In this option journeys above the proposed FAWC maximum journey times, for any purpose, would not be permitted. Changes to requirements for temperature conditions and ventilation, space and headroom allowances and sea transport based on FAWC's recommendations would also apply. Exports and imports to and from England and Wales, as well as transit journeys through both countries will be within scope.

There are three direct impacts arising from these changes: a reduction in exports and imports (due to the reduced maximum journey times), a reduction in long domestic journeys and an increase in costs due to the proposed changes to the requirements for temperature conditions and ventilation, space, headroom allowances and sea transport. Due to data limitations only the impact of reduced exports and imports have been monetised, for which we assume no exceptions apply. To be clear, we have not estimated the increased costs from reduced domestic journeys or for temperature conditions and ventilation, space, headroom allowances and sea transport. The monetised total cost is therefore likely an underestimate. We are intending to collect further evidence in the consultation to help estimate all these impacts and the impact of any exceptions that may apply.

Using data on the volume of live animal exports and imports, from the EU Trade Control and Expert System (TRACES) data, it is estimated that the exports and imports of live animals could reduce by around 30% per annum as a result of this policy. The cost of this reduced trade is estimated to be around £55.3m across the 10-year appraisal period (2021-2030), around £6.4m per annum. These costs reflect the loss of not being able to export or import and arise from an assumed 15% price differential² between live animals sold domestically and in the EU, to calculate the loss of profit. This is an assumed differential as we currently don't have evidence on the journey costs or profit margins from selling overseas. See Annex A for further information.

Other key non-monetised costs by 'main affected groups'

We lack data on the impact of proposals for temperature conditions and ventilation, space and headroom allowances and sea transport, and we would therefore seek to gather data on costs to industry from these recommendations through the public consultation.

Transporters and farmers are likely to be impacted by a reduction in the number of domestic long journeys. Although, based on initial analysis of available Cattle, Sheep and Pig movement data, the impact is expected to be small. This impact is expected to displace activity from one area of England and Wales to another, rather than lead to a loss of economic activity. However, there could also be some displacement and competition impacts from the proposals for temperature, ventilation, headroom, space and journey time requirements. Although, given the limited expected domestic impact of the journey times requirement, any competition implications should also be small. Due to data limitations, the scale of this displacement and distributional impact have not been monetised. However, we would like to find out more about the potential impacts of this in the consultation and exceptions that may need to be applied.

Producers and transporters operating across England and Wales will incur additional administrative and familiarisation costs as a result of the new system. Further information collected during and post-consultation will help inform how the system will operate and be enforced and provide a basis for estimating these costs.

² We have very limited data on the transport costs to export live animals. Costs based on one stakeholder response suggests sea transportation of a lorry load of sheep costs around 20% of the domestic sheep slaughter weight price. To account for this small sample and different varieties of species, destinations, and routes we have assumed a lower 15% price difference for all export and import journeys. However, we explore a 20% differential the sensitivity analysis.

BENEFITS (£m)	Total Transition		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
	(Constant Price)	Years		
Low	0		0	0
High	0		0	0
Best Estimate	0		0	0

Description and scale of key monetised benefits by 'main affected groups'

The benefits of this option have not been quantified because improved animal welfare cannot be monetised; the scientific evidence linking specific journey times and welfare conditions with mortality and morbidity impacts is still developing. It is not possible to quantify the extent to which individual animal welfare will improve as a result of these measures.

Other key non-monetised benefits by 'main affected groups'

This measure is expected to protect and improve animal welfare. The systematic review of the evidence indicates that long distance transport causes significant stress and occasional physical harm to animals. The longest distance journeys are likely to involve more time spent in transit on a moving vehicle and are more likely to involve sea journeys. Longer journeys are considered to be more stressful than other journeys, involving a greater risk of mortality. The level of stress experienced by animals during transport varies across species and age groups. Implementing maximum journey times based on the review of evidence for acceptable journey times, according to each species, will help reduce the detrimental impacts of transport on animal welfare. As a result of the reduction in journey times, it is likely that this option will lead to increased domestic activity. Rather than an animal being exported, the next stage of production (e.g. slaughter, fattening etc.) would instead occur domestically. This could be offset by a reduction in domestic activity due to the decrease of imports of live animals. Due to evidence limitations this impact has not be monetised. Other unmonetised impacts are detailed further in the 'Analysis of Impacts' section of this IA. Thermal conditions and ventilation are a key aspect of welfare in transport and extreme temperatures and poor ventilation can cause animal welfare issues to arise. Animals being transported are at risk of welfare issues arising due to sudden or severe changes in temperature during very hot or very cold weather and this can affect mortality rates if internal temperatures inside the vehicles cannot be maintained. In recent years we have been aware of several cases that have occurred where animals have suffered distress in transit due to high temperatures. Based on FAWC, this option adopts external temperature ranges outside of which short and long journeys will not be permitted, with a more limited range for poultry specifically. The impact of these improvements is unmonetised but will benefit animal welfare in transport.

Optimal stocking density is essential to maintain the welfare of animals during transport, and FAWC advised Defra and the Devolved Administrations on space and headroom allowances in 2013. If the space allowance is low, then the animals will be in cramped conditions, it may be difficult for the animals to regulate their body temperature, and there may be increased risk of trapping, compression, 'stepping on', or physical damage. During transport, animals other than poultry (poultry are transported in crates with specific requirements and constraints) require enough head space to stand in their natural position with enough space above them to ensure adequate ventilation and to prevent any injury or suffering. This option would adopt FAWC's recommendations on headroom allowances and explore basing space allowances on allometric principles. The impact of these improvements is unmonetised but will benefit animal welfare in transport.

All forms of transport may adversely affect an animal's welfare, but new evidence has been shown that motion at sea, including side-to-side or up-and-down movements, can cause increased stress in sheep and pigs. When sheep are exposed to side-to-side or up-and-down movements an increase in stepping (balancing) behaviours, increased heart rate and reduced rumination occur; all these reactions are likely indicators of stress. Furthermore, poor ventilation during sea transport has been shown to increase the risk of health problems for animals, due to increased moisture and airborne contamination. This option adopts FAWC's recommendation that no animals should be transported by sea in a Force 6 or above. The impact of this improvements is unmonetised but will benefit animal welfare in transport.

Key assumptions/sensitivities/risks

Discount rate (%)

3.5%

- England and Wales only.
- Operational and enforcement systems will prevent gaming of the system across the UK.
- Assumes that future trade levels will be equal to a rolling average of the previous five-year period, starting from 2014-2018.
- The distribution of export and import journey times for 2018 is representative of future years.
- Assumptions on the new routes that will be taken after journeys are banned.
- Symmetry of price differential of imports and exports.
- No exemptions are applied.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 6.4	Benefits: NA	Net: 6.4	

Summary: Analysis & Evidence

Policy Option 2

Description: End live animal exports (excluding poultry) in England and Wales for slaughter and fattening where the animal would be slaughtered within 6 months of arrival, for export journeys beginning in or transiting through either country.

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2021	Time Period Years: 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -40.2	High: -20.1	Best Estimate: -30.2

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0		2.3	20.1
High	0		4.7	40.2
Best Estimate	0		3.5	30.2

Description and scale of key monetised costs by 'main affected groups'

In this option, livestock (cattle, sheep, pigs and goats) and horse export journeys beginning in or transiting through England or Wales for slaughter would end, as would fattening journeys where the animal would be slaughtered within 6 months of arrival. This will not apply to poultry exports. The only direct cost arising from this option is the reduction in the volume of exports for slaughter and fattening which would reduce by 100%. Again, this impact has been monetised using the assumed 15% price differential, as highlighted under option 1.

Other key non-monetised costs by 'main affected groups'

Domestic transporters may be impacted by a reduction in the number of export journeys. Although based on initial analysis of available Cattle, Sheep and Pig movement data, the impact is expected to be small. In addition, producers and transporters operating across England and Wales will incur additional administrative and familiarisation costs as a result of the new system. Further information collected during and post-consultation will help inform how the system will operate and be enforced and provide a basis for estimating these costs.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0		0	0
High	0		0	0
Best Estimate	0		0	0

Description and scale of key monetised benefits by 'main affected groups'

The benefits of this option have not been quantified because improved animal welfare is difficult to monetise and it is difficult to quantify the extent to which individual animal welfare will improve as a result of this ban.

Other key non-monetised benefits by 'main affected groups'

This measure is expected to protect and improve animal welfare. It addresses a key issue that these journeys are unnecessary as domestic abattoirs could be used as alternatives. Based on stakeholder engagement, a majority find this practice distasteful and animal welfare organisations have been campaigning against this practice for many years. As a result of the reduction in live animal exports, it is likely that this option will lead to increased domestic activity as the next stages of production (e.g. slaughter, fattening etc.) would instead occur domestically. Further unmonetised impacts are detailed in the IA.

Key assumptions/sensitivities/risks <ul style="list-style-type: none"> • England and Wales only. • Operational and enforcement systems will prevent gaming of the system across the UK. • Assumes that future trade levels will be equal to a rolling average of the previous five-year period, starting from 2014-2018. • The distribution of export journey times for 2018 is representative of future years. • Assumptions on the new routes that will be taken after journeys are prohibited. • Symmetry of price differential of imports and exports. • No exemptions are applied 	Discount rate (%)	3.5%
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BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 3.5	Benefits: NA	Net: 3.5	

Summary: Analysis & Evidence

Policy Option 3

Description: Implement improvements to animal welfare for all journeys to, from and within England and Wales based on FAWC's recommendations on journey times and transport conditions, in addition to ending live animal exports (excluding poultry) in England and Wales for slaughter and fattening where the animal would be slaughtered within 6 months of arrival, for export journeys beginning in or transiting through either country. This is a combination of options 1 and 2 and is the preferred option.

Price Base Year: 2019	PV Base Year 2021	Time Period Years: 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -75.6	High: -37.8	Best Estimate: -56.7
COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)	
Low	0		4.4	37.8	
High	0		8.8	75.6	
Best Estimate	0		6.6	56.7	

Description and scale of key monetised costs by 'main affected groups'

This option applies the policies outlined in both option 1 and 2. The same types of direct costs on imports, exports and domestic journeys would apply as in option 1, but exports for slaughter and production of the animals covered would reduce by 100% (there is some overlap between the journeys prohibited under option 1 and 2). As with option 1, due to data limitations only the impact of reduced exports and imports have been monetised, assuming no exceptions apply. The monetised total cost is therefore likely an underestimate. We are intending to collect further evidence in the consultation to help estimate the other two direct impacts and the impact of any exceptions that may apply. Under this option, it is estimated that the exports and imports of live animals could reduce by just over 30% per annum as a result of this policy. The cost of this reduced trade is estimated to be around £56.7m across the 10-year appraisal period (2021-2030), around £6.6m per annum. These costs arise from an assumed 15% price differential between live animals sold domestically and in the EU, to calculate the loss of profit. This is an assumed differential as we currently don't have evidence on the journey costs or profit margins from selling overseas. See Annex A for further information.

Other key non-monetised costs by 'main affected groups'

Potential impacts to domestic journeys, transporters and producers as a result of option 1, and other key costs as a result of option 2 also apply for this option.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0		0	0
High	0		0	0
Best Estimate	0		0	0

Description and scale of key monetised benefits by 'main affected groups'

The benefits of this option have not been quantified because improved animal welfare is difficult to quantify and monetise. The challenges with quantifying the benefits mentioned in option 1 and 2 are relevant with this option.

Other key non-monetised benefits by 'main affected groups'

This option, which combines the measures in options 1 and 2, will have the maximum benefit for animal welfare, incorporating the advantages identified under both options 1 and 2.

Key assumptions/sensitivities/risks	Discount rate (%)
<ul style="list-style-type: none"> England and Wales only. Operational and enforcement systems will prevent gaming of the system across the UK. Assumes that future trade levels will be equal to a rolling average of the previous five-year period, starting from 2014-2018. The distribution of export and import journey times for 2018 is representative of future years. Assumptions on the new routes that will be taken after journeys are prohibited. Symmetry of price differential of imports and exports. No exemptions are applied. 	3.5%

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 6.6	Benefits: NA	Net: 6.6	

Summary: Analysis & Evidence

Policy Option 4

Description: (Non-regulatory option) A voluntary assurance and associated labelling scheme recommending that producers follow transport guidelines as set out in Option 1.

FULL ECONOMIC ASSESSMENT

Price Base Year: 2019	PV Base Year 2021	Time Period Years: 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -5.1	High: -2.5	Best Estimate: -3.8

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
	Low	0		0.3
High	0		0.6	5.1
Best Estimate	0		0.4	3.8

Description and scale of key monetised costs by 'main affected groups'

In this option, a voluntary assurance and labelling scheme would be introduced, recommending producers comply with the measures outlined in option 1. The impact of this policy on the industry would be minimal because producers would ultimately decide whether or not to join and implement the recommendations. Based on well established research³ which shows a strong relationship between financial reward (or loss) with incentivising uptake of behavioural change schemes, it is not expected that a high proportion of producers would do join. Furthermore, as no requirement would be mandated, importers would not face the costs that they face in previous options. Based on the assumption that this would result in 10%⁴ of baseline live animal exports instead staying in England and Wales (i.e. that only 10% of export journeys are voluntarily stopped), and using the assumed 15% price differential, it is estimated that the cost to industry will be £3.8m across the 10 year appraisal period (2021-2030), around £0.4m per annum.

Other key non-monetised costs by 'main affected groups'

The Government would present a campaign to producers showcasing the benefits of implementing the recommended caps to journey lengths. In addition, there will be the set-up and running costs associated with the scheme. Transporters are likely to be impacted, but given the voluntary nature of the scheme, few journeys are expected to be modified.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
	Low	0		0
High	0		0	0
Best Estimate	0		0	0

Description and scale of key monetised benefits by 'main affected groups'

The benefits of this option have not been quantified because improved animal welfare is difficult to monetise and it is difficult to quantify the extent to which individual animal welfare will improve as a result of this ban. The scientific evidence linking specific journey times and welfare conditions with mortality and morbidity impacts is still developing. It is not possible to quantify the extent to which individual animal welfare will improve as a result of these measures.

Other key non-monetised benefits by 'main affected groups'

This measure is expected to have a small positive effect on animal welfare because it will result in some animals not having to travel long journeys and improvements to thermal and ventilation conditions, space and headroom allowances and sea transport, the advantages of which have already been stated. The impact on animal welfare is limited by the fact that many animals would still be expected to travel based on the current regulations.

³ Understanding farmer uptake of measures that support biodiversity and ecosystem services in the Common Agricultural Policy (CAP). An EKLIPSE Expert Working Group report by Brown, C., Kovacs, E.K., Zinngrebe, Y., Albizua, A., Galanaki, A., Grammatikopoulou, I., Herzon, I., Marquardt, D., McCracken, D., Olsson, J., Villamayor-Tomas, S. (2019).

⁴ There is a well established and intuitive relationship, which already informs many policies, between uptake of behavioural change schemes and perceived financial payments (or lower costs). A voluntary scheme which increases costs (and offers no reward) is unlikely to incentive large scale behavioural change. A 2019 literature review of 302 papers published within Europe over the past decade, on the factors relevant to farmers' uptake and participation in environmentally-friendly or 'Green' measures, found that "the clearest pattern across the literature was that environmental schemes with higher payments (or lower costs) achieve greater uptake". We therefore concluded a voluntary assurance scheme would have minimal uptake, and have assumed an indicative 10% uptake to represent this.

Key assumptions/sensitivities/risks**Discount rate (%)**

3.5%

- England and Wales only.
- Operational and enforcement systems will prevent gaming of the system across the UK.
- Assumes only 10% of the journeys that would be banned under Option 1 would be prevented under a non-regulatory option. This level of compliance is our best estimate – many producers are expected not to change their routes because they lack the incentive to do so.
- Assumes that future trade levels will be equal to a rolling average of the previous five-year period, starting from 2014-2018.
- The distribution of export and import journey times for 2018 is representative of future years.
- Symmetry of price differential of imports and exports.
- No exemptions are applied.

BUSINESS ASSESSMENT (Option 4)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 0.4	Benefits: NA	Net: 0.4	

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Summary

1. In its 2019 report, FAWC identified that there are animal welfare problems with long journeys. FAWC recommended that animals should only be transported if it is absolutely necessary and that the most welfare considerate route is chosen⁵, alongside other recommendations aimed at improving the welfare of animals during transport.
2. We present three regulatory options, and a fourth option which is a non-regulatory approach. The Government is minded to proceed with option 3 as it meets the key objectives of ending excessively long journeys for slaughter and fattening, whilst improving animal welfare in transport generally in a proportionate way. A partial analysis of the monetised impacts estimates a cost of around £56.7m over the appraisal period, with an annualised cost to business⁶ of around £6.6m. It should be noted that this excludes a number of costs for which more evidence will be sought as part of the consultation⁷.

Enforcement and operation

3. Operating and enforcement costs have not been estimated in this IA. Details on implementation and enforcement of these proposed measures will be developed post-consultation. At this stage we assume that there will be minimal additional operating and enforcement costs, as for any future policies we would aim to utilise existing monitoring and enforcement systems.

Exports and Imports

4. For exports, the Animal and Plant Health Agency (APHA) play a key role in currently approving journey plans (known as journey logs). When cattle, sheep, goats, pigs or horses are being transported over 8 hours outside of the UK, a transporter must apply to APHA in advance of their journey for approval of the journey log. The journey log requires transporters to provide details of the planned route they wish to take and expected journey time. APHA only approve a journey log if it is compliant with current regulations, including adhering to time restrictions and rest periods.
5. Further work needs to be done on how we would enforce the prohibition on live animal exports for slaughter and fattening, as well as other animal welfare proposals that will impact both exports and imports. Possible mechanisms for enforcing animal welfare requirements will be explored in greater detail post-consultation.

Scope of IA

6. The proposed options apply to England and Wales. Animal welfare is a devolved policy responsibility. We will discuss the responses to the consultation with the Scottish Government and Northern Ireland Executive.
7. Analysis in this assessment is based on data from the EU TRACES system and other internal sources which produce UK-wide estimates.
8. The options (unless otherwise stated) are intended to apply to livestock, poultry and horses that are transported for economic reasons as currently defined in the regulations.
9. The preferred option proposes to end live exports for slaughter and fattening, whilst introducing new improvements to animal welfare in transport regulations. Given that this would create a divergence with the regulations in Scotland and Northern Ireland, this option gives rise to different

⁵ [https://consult.defra.gov.uk/transforming-farm-animal-health-and-welfare-team/improvements-to-animal-welfare-in-transport/supporting_documents/fawcopiniononthewelfareofanimalsduringtransport.pdf] FAWC: Opinion on the Welfare of Animals during Transport, pp. 32

⁶ Calculated using the BEIS impact assessment calculator <https://www.gov.uk/government/publications/impact-assessment-calculator-3>

⁷ <https://consult.defra.gov.uk/transforming-farm-animal-health-and-welfare-team/improvements-to-animal-welfare-in-transport>

risks. Possible mechanisms for addressing the risks that might arise from diverging regulations will be explored in greater detail post-consultation.

Post implementation review

10. The Government will undertake a post implementation review of whether policies implemented to improve animal welfare during transport have achieved their expected impacts. The exact methodology for the review will be determined after a scoping phase, exploring the options for conducting a proportionate evaluation, by focusing on key evidence gaps, and testing the key assumptions in the IA, where possible.
11. This final review is likely to include analysis of relevant monitoring data, development and refinement of a logic model, and (if necessary) bespoke pieces of research, e.g. with users and stakeholders, to fill gaps in our understanding of the outcomes and impacts. The design of the review will be informed by relevant sources of guidance such as HMT's Magenta Book. Quality assurance will be provided through the Government's analytical quality assurance process.
12. It is envisaged that the post-implementation review will be complete five years after implementation of the policies. The post-implementation review should:
 - Assess whether the policy has met the key policy objectives of improving animal welfare (as animal welfare is difficult to directly measure, metrics such as time spent in transit, dead on arrival numbers, lameness and injury post-transport etc. can be used as proxies) and ending excessively long journeys for slaughter and fattening;
 - Evaluate the business costs and trade impacts of the policies, comparing these to the impacts identified in this assessment;
 - Identify and, as far as possible, quantify any unintended consequences or implications of the policy; and
 - Assess whether the policy is still the best option to continue achieving the policy objective and if any adjustments are needed.
13. As animal welfare cannot be directly measured and quantified, other proxy metrics should be used in the post-implementation review, to infer if the policy is achieving its objective of improving animal welfare. Current metrics, which could be used for this purpose, include:
 - Food Standards Agency (FSA) slaughterhouse dead on arrival (DOA) statistics;
 - EU TRACES data;
 - Defra published slaughter statistics;
 - HMRC trade data; and
 - Enforcement and penalties data.
14. At the final impact assessment stage, full details of the policy, implementation and enforcement will help inform a more detailed plan for the post-implementation review. This will establish whether the data currently collected is sufficient, or if any bespoke pieces of research are needed to fill potential evidence gaps.

Background

15. The transport of live animals has become a key attribute of modern livestock farming. Today, animals are transported globally for the purposes of rearing, production, breeding, slaughter or entertainment. The economic purposes for which animals are moved include meat, dairy and fibre production.

16. The Government is committed to improving the welfare of all animals. The UK Government has a manifesto commitment to “end excessively long journeys for slaughter and fattening”. To this end the Government is assessing what improvements can be made to the regulatory regime for the protection of animals in transport. The transport process has the potential to negatively impact an animal’s welfare. During a journey⁸, for example, normal behaviours are restricted, and additional handling and unavoidable vehicle motion may cause distress.
17. The current rules aimed at protecting animal welfare in transport are derived from directly applicable EU law, EC No 1/2005. The Regulation sets out the requirements that anyone transporting animals in connection with an economic activity must comply with and includes restrictions on journey times, required space allowances, water, feed, ventilation, etc. All commercial transporters must be authorised; drivers must have certificates of competence; and, if vehicles are going to be used to transport animals for more than 12 hours, they must also be approved. There are growing concerns that the current regulations do not reflect the latest scientific evidence on how best to protect animal welfare during transport. As the UK has left the EU, the Government can explore alternate options to better protect animal welfare during transport.
18. Defra and the Devolved Administrations launched a Call for Evidence (CfE) on controlling live exports for slaughter and improving animal welfare during transport in 2018. FAWC were then asked to review this evidence and provide recommendations on improving the welfare of animals during transport. Scotland’s Rural College (SRUC) and the University of Edinburgh conducted a systematic review of scientific research on the welfare of animals during transport. Evidence from the systematic review fed into FAWC’s advice.
19. FAWC submitted their advice to Defra and the Devolved Administrations in 2019 which outlined concerns about how far and under what conditions animals can be transported under the current regulations. The FAWC advice identified several aspects of transport that negatively impact animal welfare, provided principles for best practice and recommended improvements to the current regulations on animal welfare during transport.
20. The options detailed below have been informed by the key principles advocated by FAWC, which were informed by the review of the scientific evidence.
21. The analysis in this pre-consultation impact assessment has been conducted using the best available evidence, however there are significant uncertainties at this stage and several impacts remain unquantified. We intend to seek further evidence through the public consultation.

Rationale for intervention

Policy rationale

22. The intention is to improve the welfare of animals during transport. Available scientific evidence indicates that all forms of transport are considered stressful for animals and may negatively impact on welfare. We want to minimise journey times wherever possible and ensure that animal welfare regulations reflect the latest scientific evidence where possible.
23. In response to the 2018 CfE, several concerns were raised in relation to live exports for slaughter and fattening. FAWC highlighted that animals being transported to abattoirs were either travelling long distances to find a suitable abattoir or passing several abattoirs in the

⁸ The definition of a journey used here is that used in the EU Regulation, i.e. ‘journey’ means the entire transport operation from the place of departure to the place of destination but the definition used by FAWC in their report excluded loading and unloading. For the purpose of modelling, we have assumed the definition used in the EU Regulation.

UK to be slaughtered overseas⁹. FAWC recommended that animals should be transported if it is absolutely necessary and that the most welfare considerate route should be chosen¹⁰. The preferred option addresses this concern.

24. FAWC's report recommended that new maximum journey times should be applied to all live animal journeys in response to concerns that the current regulations could potentially expose animals to long journeys. Animal transport is crucial to many modern agricultural practices and integral to a well-functioning market, however, long journeys can negatively impact on animals' welfare. The preferred option addresses this welfare concern.
25. The FAWC advice noted that a key aspect of welfare in transport is thermal conditions and ventilation, highlighting the negative impact that extreme temperatures and poor ventilation can have on animals. Extremes of temperature in summer and winter can lead to death occurring during journeys. This is especially the case for poultry where data shows a huge peak in the number of dead on arrival (DOA) birds during journeys in the summer months, which could be linked to high temperatures during transport. These DOA figures are further detailed in Table 10. FAWC recommended that more research be undertaken to determine species-specific temperature ranges for transport, but suggested guide ranges for cattle, sheep, pigs and poultry, noting that the current regulations should apply for all other animals¹¹. The preferred option would address the concerns highlighted.
26. The FAWC advice based on its 2013 report on space and headroom allowances¹² suggested alternative methods to the current regulations that could improve animal welfare. High stocking density could lead to increased risk of trapping, compression or physical damage. Ensuring that animals have adequate head space also enables adequate ventilation and prevents injury or suffering. The preferred option would address these concerns highlighted.
27. FAWC stated that sea transport has the potential to adversely affect an animal's welfare due to motion at sea (including side-to-side and up-or-down movements) which can cause increased stress in sheep and pigs. Poor ventilation at sea can also cause increase the risk of health problems that animals experience because of the increased moisture and airborne contamination. FAWC recommended that animals should not be transported in rough weather at sea (Beaufort wind force 6 or above) and made other recommendations to improve ventilation conditions at sea¹³. The preferred option would address these concerns.

Economic rationale

28. Unnecessary long journeys for animals give rise to negative externalities, information asymmetries and a possible loss of public goods, but in the context of animal welfare it is difficult to capture this in a normal economic framework as the value of animal welfare value is difficult to ascertain. Evidence however supports strong public support for animal welfare and improvements. In a survey conducted by the EU Commission, 76%¹⁴ of UK respondents agreed that the welfare of farmed animals should be better protected. This suggests the public attributes a greater value to animal welfare of farmed animals, than is currently practised. Further to this, in Defra's Health and Harmony consultation 68% of respondents said 'yes' to the question "Do you think there is a strong case for government

⁹ FAWC: Opinion on the Welfare of Animals during Transport, pp. 32

¹⁰ FAWC: Opinion on the Welfare of Animals during Transport, pp. 32

¹¹ FAWC: Opinion on the Welfare of Animals during Transport, pp. 39

¹² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/324500/FAWC_advice_on_space_and_headroom_allowances_for_transport_of_farm_animals.pdf

¹³ FAWC: Opinion on the Welfare of Animals during Transport, pp. 43

¹⁴ Eurobarometer - http://data.europa.eu/euodp/en/data/dataset/S2096_84_4_442_ENG

funding pilots and other schemes which incentivise and deliver improved welfare?”¹⁵. This argues for government intervention to reflect this public value.

29. Market failures arise as the social cost of animals being transported long distances is not reflected in the price of the final good and is not captured elsewhere which is inefficient (negative externality). Often the consumers are not aware of the animal welfare costs (information asymmetry) and the people who are aware might not be consumers of the final good, so they are unable to express their preferences. Setting regulatory standards at the right level (i.e. to reflect where public value lies) would address this whilst still allowing the consumers to consume the goods but with lower animal welfare costs. The losses to those who engage in these transport activities could, in theory, be offset by benefits held by society in relation to these activities.

Strategic objectives rationale

30. In line with HM Treasury Green Book¹⁶ best practice, there is also a wider government strategic reason for intervention. As part of the Health and Harmony 2018 policy statement, the Government is committed to “continue to keep our regulatory baseline under review, raising standards sustainably over time as new research and evidence emerges”. Improving animal welfare in transport standards meets this strategic objective and raises this regulatory baseline in line with emerging scientific evidence.

Policy Objectives

31. The policy objectives¹⁷ are to:

- Improve animal welfare in transport;
- Achieve this in a proportionate way; and
- Meet the UK Government’s manifesto commitment to ‘end excessively long journeys for slaughter and fattening’.

32. The intended outcomes are to improve the welfare of animals in transport by addressing identified concerns on live exports, journey times, thermal conditions and ventilation, space and headroom allowances and sea transport.

33. The second objective ensures this is achieved in a proportionate way. This involves examining the burden on animal transporters, the wider industry and permitting longer movements where this is justified for animal welfare reasons.

34. The final objective ensures that the options fulfil the UK Government’s manifesto commitment to “end excessively long journeys for slaughter and fattening”.

Options Assessment

35. The options that we consider would most effectively meet our policy objectives are outlined below. Prior to selecting these options, we considered other alternatives that may have met our policy objectives, including non-regulatory measures. We have considered a range of

¹⁵ Health and Harmony: the future for food, farming and the environment in a Green Brexit - Summary of responses

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/741461/future-farming-consult-sum-resp.pdf

¹⁶ HMT Green Book, Central Government guidance on appraisal and evaluation – page 13

¹⁷ Animal welfare cannot be directly measured and quantified; however, other proxy metrics could be used to measure whether the policy objectives are being met, e.g. FSA slaughterhouse dead on arrival (DOA) statistics, EU TRACES data; Defra published slaughter statistics; HMRC trade data; and enforcement and penalties data.

policy instruments aimed at addressing the problem and meeting our policy objectives and conducted a high-level qualitative assessment of these options. A more thorough cost-benefit analysis of the most promising options was then conducted.

Table 1: Regulatory and non-regulatory options and themes considered

Regulatory	Non-regulatory
<p><u>Mandate reduced maximum journey times and other welfare in transport improvements based on FAWC's recommendations</u></p> <p>Apply maximum journey times, as recommended by FAWC to all journeys. Implement other welfare in transport improvements.</p>	<p><u>Voluntary assurance and associated labelling scheme</u></p> <p>A voluntary assurance scheme, where accredited members must adhere to revised maximum journey times based on FAWC's recommendations. Accredited members would also adhere to other welfare in transport improvements.</p>
<p><u>Prohibit slaughter and fattening export journeys where the animal would be slaughtered within 6 months of arrival.</u></p> <p>End all export journeys for slaughter and fattening journeys where animals would be slaughtered within 6 months of arrival.</p>	<p><u>Taxation</u></p> <p>Impose a tax on journeys above the recommended FAWC maximum journey times.</p>
<p><u>Combination of reduced maximum journey times, improved welfare in transport regulations and a prohibition on slaughter and fattening export journeys where the animal would be slaughtered within 6 months of arrival</u></p>	<p><u>Targeted information provision</u></p> <p>Provide information to enable organisations to make better-informed decisions that affect animal welfare during transport.</p>

High level qualitative assessment of options and themes

Table 2: Qualitative assessment

Scoping Options	Journeytime and other improvements to animal welfare	Prohibition on slaughter and fattening exports	Journeytime and other improvements to animal welfare AND prohibition on slaughter and fattening exports
Increase animal welfare	✓✓✓	✓	✓✓✓
Proportionality	✓✓✓	✓	✓✓✓
Manifesto Commitment	✓✓	✓✓✓	✓✓✓

Scoring Options	Voluntary assurance scheme	Taxation	Targeted Information Provision
Increase animal welfare	✓	✓	✓
Proportionality	✓✓	✓	✓
Manifesto Commitment	✓	✓	✓

Scoring	Description
X	No alignment with the policy objective
✓	Marginal alignment with the policy objective
✓✓	Medium alignment with the policy objective
✓✓✓	Strong alignment with the policy objective

36. One option considered was the creation of a voluntary assurance and associated labelling scheme, whereby accredited members must adhere to revised maximum journey times and other welfare recommendations based on FAWC's advice. Journeys above the proposed maximum journey times, for any purpose would not be permitted for accredited members of the scheme. Similarly, the implementation of other recommendations to improve welfare in transport would be require for accredited members. Farmers may voluntarily sign up to the proposed assurance scheme. They may be incentivised to do so based on, for example, the potential to charge a premium price for their higher welfare product, gaining access to new markets or it may be a requirement for their supply or marketing arrangements.

- This option was considered less effective, on the basis that the policy objectives would not necessarily be met. The welfare of animals that are part of the scheme would be improved in line with our primary objective due to live animal journeys being minimised and other welfare improvements being adopted; however, the welfare benefits would not extend to animals that are not part of the scheme. The incentives to sign up to an assurance scheme, such as those listed above, might only apply to a small proportion of the market. Many farmers may not perceive any advantage to joining assurance schemes or have concerns about costs or the restrictions that may be enforced on them to obtain accreditation¹⁸. In addition, to capture animals currently being exported an international element would be needed to the assurance scheme.

37. Another option considered was the taxation of long live animal journeys. By introducing a cost to journeys of live animals that go above FAWC's recommended maximum journey times, the profitability and thus viability of long journeys would reduce. We would therefore expect the volume of such journeys to decrease.

¹⁸ FAWC Report on the welfare implications of farm assurance schemes (2005) – pg. 58

- As the aim of this tax would be to disincentivise a certain activity, rather than raising revenue, the size of the tax would have to be carefully set in order to reduce the number of long journeys, in particular for slaughter and fattening. Setting the tax at the right rate by species to discourage long journeys would therefore be a considerable challenge. There would also be administrative and collection costs, which could make this option complex and costly to administer. Any increase in costs for the producers might also be passed on to the consumer, in the form of higher prices.
- While setting the proposed tax high enough could in theory minimise journey times for slaughter and fattening, the potential complexity and administrative costs involved in doing so mean it would be difficult to meet the UK Government's manifesto commitment to end excessively long journeys for slaughter and fattening.

38. Another option considered was a targeted information provision based on the FAWC recommendations. This would involve providing information to enable organisations to make better-informed decisions that affect animal welfare during transport. Similar to the disadvantages of the assurance scheme option, this option was considered less effective on the basis that the policy objectives would not necessarily be met. Unlike the assurance scheme option, there are no incentives available from being acquiring accredited status, therefore we would expect the majority of organisations to adhere to the status quo in relation to current transport practice after the commencement of a targeted information provision campaign.

39. In summary, the high-level assessment of the non-regulatory options considered indicates that non-regulatory options may not be capable of achieving our desired impact. Nevertheless, of these non-regulatory options we have modelled the impact of introducing a voluntary assurance and associated labelling scheme in order to meet our policy objectives.

40. Of the regulatory options, implementing recommendations based on FAWC's advice and ending live animal exports for slaughter and fattening were considered. While implementing the new maximum journey times and other recommendations would improve animal welfare during transport above the current baseline, it would be unlikely to be effective enough to meet the UK Government's manifesto commitment to end excessively long journeys for slaughter and fattening. In order to improve welfare in transport and end these excessively long export journeys, the Government considers it necessary to end the export for slaughter and fattening of live animals.

41. Ending live animal exports for slaughter and fattening and implementing improvements to animal welfare in transport based on FAWC's advice were the options taken forward for further analysis in this IA individually as well as combined.

Proposed options

Option 1: Implement improvements to animal welfare for all journeys to, from and within England and Wales, based on the Farm Animal Welfare Committee's (FAWC) recommendations on journey times and transport conditions. Exports and imports to and from England and Wales, as well as transit journeys through either country will be within scope.

42. In its 2019 report, FAWC provided recommendations for maximum journey times for some livestock species¹⁹. FAWC's recommended journey times are presented alongside the current

¹⁹ FAWC: Opinion on the Welfare of Animals during Transport pp. 40

maximum journey times permitted by the Regulation in Table 3 below. This option would apply the maximum journey times shown in Table 3 for all journey types.

Table 3: The desirable maximum journey times, based on FAWC's recommendation, compared to current EU permissible journey times

Species	Recommended maximum journey times (including loading, unloading and mid rest-periods. Journeys cannot be started for a minimum of 48 hours after the maximum journey time is completed)	Current EU maximum journey times (journey time includes rest stop, and can be repeated following 24-hour rest at control post)
Broiler chickens	4 hours	12 hours
Pigs	18 hours	24 hours
Newly weaned pigs	8 hours	19 hours
Horses	12 hours	24 hours
Calves (up to 9 months)	9 hours	19 hours
Recently hatched chicks (72 hours post hatching)	21 hours (24 hours with consent from APHA)	24 hours
Cattle (minimum 7-day rest period)	21 hours (29 hours with consent from APHA).	29 hours
Sheep	21 hours (48 hours with consent from APHA)	29 hours
All other animals (until scientific evidence is provided, no animal should be exposed to journeys longer than 21 hours).	21 hours	24 hours

43. Under this option, the FAWC maximum journey times would apply to the species as specified.

The times are intended to be an absolute maximum, after completion of which the journey may not be repeated for a minimum of 48 hours (7-day minimum for cattle).

44. We assume that journey times will include loading, unloading and mid-rest periods, as currently defined in the regulations.

45. We have considered the responses to the CfE on average journey times. This data is shown in Annex D. There are some limitations with the data from the CfE; it is self-reported data and has not been independently verified; and the sample size is small (only 82 respondents said that they transport animals) and may cover a wide range of animals – not just livestock going for slaughter or fattening/production. For this reason, the main source of information used to model the impact on exports and imports of live animals is data from the EU TRACES system.

46. Nonetheless in response to the question: “When transporting animals within the UK, what are your average journey durations?” just over 50% transported for between 1-3 hours; around 10% transported animals for between 3-6 hours; and around 6% for between 6-9 hours. The remaining respondents transported animals for between 9 and 48 hours although the latter was in respect of pet animals.
47. Under this option other recommendations based on FAWC’s advice for improving animal welfare in transport would also be implemented (See Annex B for further detail on FAWC’s recommendations):
- Restricting the transport of live animals when the external temperature is below 5 or over 30 degrees for both short and long journeys, unless the vehicle could regulate the internal temperature within this temperature range. For poultry transport (both short and long journeys), the restriction would apply if the external temperature is below 5 and above 25 degrees;
 - An allometric system for determining space allowances, and headroom height requirements for all livestock journeys as suggested by FAWC; and
 - Prohibiting the transport of animals by sea during Beaufort Wind Force of 6 or above, as suggested by FAWC.
48. These proposals would apply in England and Wales. Animal welfare is a devolved policy area; we will be discussing the responses to this consultation with the Scottish Government and Northern Ireland Executive.
49. We may wish to permit exceptions to the requirements of this option, provided that there are sufficient welfare protections in place. We will consult on allowing these types of exceptions; however, for the purposes of the analysis in the impact assessment, no exceptions have been modelled.

Option 2: End live animal exports (excluding poultry) in England and Wales for slaughter and fattening where the animal would be slaughtered within 6 months of arrival, for export journeys beginning in or transiting through either country.

50. Public concern regarding live animal exports has a long history and there have been a number of campaigns by animal welfare organisations since the 1990s, aiming either to end live animal exports for slaughter or to limit how far an animal can be transported on welfare grounds. More recently, Compassion in World Farming presented a petition in 2017 aiming to end long export journeys of live animals, which gained the support of a million European citizens²⁰. In 2018, a petition advocating to end the export of live farm animals after the UK leaves the EU gained 100,752 signatures²¹.
51. The topic of live exports has also been raised repeatedly in Parliament. In 2016 Craig Mackinlay MP proposed a Private Members’ Bill²² to amend the Harbours, Docks and Piers Clauses Act 1847 to allow ports and local authorities to ban live exports. In October 2017 Theresa Villiers MP brought forward a Private Members’ Bill²³ prohibiting live animal exports.

²⁰ <https://www.ciwf.org.uk/news/2017/09/1-million-strong-stopthetrucks-petition-hand-in>

²¹ <https://petition.parliament.uk/archived/petitions/200205>

²² <https://services.parliament.uk/bills/2016-17/harboursdocksandpiersclausesact1847amendment.html>

²³ <https://services.parliament.uk/bills/2017-19/liveanimalexportsprohibition.html>

In February 2018 live exports were the subject of a Westminster Hall debate²⁴, led by Steve Double MP.

52. In response to the 2018 Call for Evidence, several concerns were raised by stakeholders in relation to live exports. The Call for Evidence found that 98% (247 of the 253) of the responses from the general public supported ending live exports. Many argued for ending exports for fattening as well as slaughter. In its 2019 report, FAWC recommended that animals should only be transported if it is 'absolutely necessary and that the most welfare considerate route is chosen'²⁵.
53. This option would end the export of livestock and horses (not applying to poultry) going for slaughter and fattening in England and Wales, where the animals would be slaughtered within 6 months of arrival at their destination, for export journeys beginning in or transiting through either country.
54. Live export journeys for slaughter and fattening will not be allowed to depart from England or Wales for a destination outside the UK or transit through England or Wales on its way to a destination outside the UK. Therefore, live export journeys for slaughter and fattening that begin in Scotland, Northern Ireland or EU Member states such as the Republic of Ireland, that are destined for outside the UK cannot transit through England or Wales. This proposal will not impact on necessary domestic livestock and horse movements between England, Scotland, Wales and Northern Ireland.
55. Exports of livestock would only be permitted if the animals are going for breeding or for production.
- On breeding exports, FAWC highlighted that breeding animals may be subject to export so that they can meet a requirement for improved genetic capabilities, and that these journeys should be considered as providing a more justifiable reason for an export journey, in comparison to those related to further finishing or slaughter where such actions could be carried out within the host country. Furthermore, animals that are exported for breeding purposes are typically transported in very good conditions, with procedures put in place to ensure that the welfare of an animal is prioritised during the journey. For example, for transporting pigs, vehicles use air filtration systems to protect the animals from airborne disease and have full environmental control to ensure that the environment remains optimal. Animals exported for breeding are also typically able to live a full and healthy life once they arrive at the destination country, as opposed to animals enduring excessively long journeys before being slaughtered soon after arrival.
 - Poultry exports are also proposed to be exempted from this change. Significant poultry exports from the UK to the EU (excluding the Republic of Ireland) consist of day-old chicks transported for production on farm, with which there have been no major welfare concerns identified. This is in line with conclusions from the systematic review which highlighted that journeys of up to 24 hours may be still be appropriate for day-old chicks, due to energy and water reserves in the yolk sac²⁶.
56. This policy will apply to England and Wales. Animal welfare is a devolved policy area; we will be discussing the responses to this consultation with the Scottish Government and Northern Ireland Executive

Option 3. Implement improvements to animal welfare for all journeys to, from and within England and Wales based on FAWC's recommendations on journey times and transport conditions, in addition to ending live animal exports (excluding poultry) in England and Wales for

²⁴ <https://hansard.parliament.uk/commons/2018-02-26/debates/39AF207E-7235-4D57-8723-54F6F87CC17B/LeavingTheEULiveFarmAnimalExports>

²⁵ FAWC: Opinion on the Welfare of Animals during Transport, pp. 32

²⁶ FAWC: Opinion on the Welfare of Animals during Transport, pp. 236-237

slaughter and fattening where the animal would be slaughtered within 6 months of arrival, for export journeys beginning in or transiting through either country. This is a combination of Options 1 and 2 and is the preferred option.

57. This combined option would have the maximum benefit for animal welfare through implementing improvements to animal welfare based on FAWC’s recommendations and live animal exports for slaughter and fattening. Combining the options would also ensure that this option is able to implement the UK Government’s manifesto commitment to end excessively long journeys for slaughter and fattening.

Option 4. A voluntary assurance and associated labelling scheme, recommending that producers follow the measures in Option 1.

58. We considered non-regulatory options to meet our policy objectives. The Government has concluded that none of the non-regulatory alternatives were likely to have the desired level of impact, the assurance and associated labelling scheme scored the highest against the policy objectives in the qualitative assessment. This was therefore taken forward as the most preferable non-regulatory alternative.

59. This approach offers a voluntary option for producers to join an assurance and labelling scheme, to limit journey times and implement other measures to improve animal welfare in transport. The proposal is to recommend that producers adhere to the proposals in option 1, as the core principles behind the assurance scheme. They would then be able to label their produce as meeting these higher animal welfare conditions during transport.

Analysis of impacts

60. We have identified the following direct impacts from each of the options:

Table 4: Direct Impacts, 2019 prices, discounted to 2021 for period 2021-2030

Direct impacts £m	Option 1	Option 2	Option 3	Option 4
Reduced volume of exports	37.9	30.2	39.3	3.8
Reduced volume of imports	17.4	0	17.4	0
Cost of changes to the requirements for temperature conditions and ventilation	Not monetised	Not applicable	Not monetised	Not applicable
Cost of changes to the requirements for space and headroom allowances	Not monetised	Not applicable	Not monetised	Not applicable
Cost of changes to the requirements for sea transport	Not monetised	Not applicable	Not monetised	Not applicable
Familiarisation costs	Not monetised	Not monetised	Not monetised	Not monetised
Admin costs	Not monetised	Not monetised	Not monetised	Not monetised
Animal welfare benefits	Not monetised	Not monetised	Not monetised	Not monetised
Total NPV over 10-year period	-55.3	-30.2	-56.7	-3.8

Source: Internal modelling of live animal imports and exports

61. Due to evidence limitations, the only direct impacts to be monetised are the costs of reduced exports and imports. The monetised total cost is therefore likely an underestimate. We are intending to collect further evidence in the consultation to help estimate the other impacts which have been identified. The impacts not currently assessed are: the cost of changes to the

requirements for temperature conditions and ventilation, the cost of changes to the requirements for space and headroom allowances, the cost of changes to the requirements for sea transport, familiarisation costs, and admin costs.

62. Additionally, as long-distance domestic journeys are reduced, those operators who divert to suitable local destinations will face lower fuel and transport costs. This should in turn reduce emissions of harmful pollutants, greenhouse gas emissions and offer small environmental benefits. Conversely, the proposed changes to temperature, ventilation, space and headroom allowance requirements could increase the number of vehicles needed to complete a journey. This could increase emissions of harmful pollutants, greenhouse gas emissions; leading to negative environmental impacts.

Option 1: Implement improvements to animal welfare for all journeys to, from and within England and Wales, based on the Farm Animal Welfare Committee's (FAWC) recommendations on journey times and transport conditions. Exports and imports to and from England and Wales, as well as transit journeys through either country will be within scope.

Direct costs:

63. We lack data on the impact of implementing measures based on FAWC's thermal conditions and ventilation, space allowances and sea transport recommendations, as well as the impact of exceptions that may apply. We would therefore seek to gather data on costs to industry from these recommendations through public consultation.

64. In terms of trade impacts, it has been estimated that exports and imports of live animals could reduce by around 30% per annum as a result of option 1. This includes:

- Under these proposals calf journeys for fattening would be limited to 9 hours. Based on 2018 data, all of the fattening and production export and import journeys to the EU are likely to be stopped as a result (around 24,200 calves per year).
- In addition, journey times for breeding of cattle would be limited to 21 hours which could impact 55% of such journeys (around 4,400 per year).
- All journeys for poultry (excluding broiler chickens) would be limited to 21 hours, 46% of journeys for breeding could be impacted (1,788,900 birds exported and 269,700 imported per year). 68% of fattening journeys could be impacted (a total of 201,300 birds exported).
- Chicken journeys for breeding (assumed to involve 1-day old chicks) whose journey time is limited to 21 hours could see 6% of the journeys impacted (around 3,667,900 birds exported and 10,741,800 imported per year).
- Sheep journeys could also be affected – all journeys being limited to 21 hours could affect 67% of journeys to slaughter (around 6,400 sheep), 50% of breeding journeys (around 5,100 and 700 animals exported and imported respectively per year), and 33% of journeys for fattening (9,400 and 100 animals).
- Finally, 23% of pig journeys for breeding could be affected by limiting journey time to 18 hours (around 2,500 pigs).

65. We assume that the 48-hour minimum rest-period that will need to be followed for all journeys (except for cattle that will observe a 7-day minimum rest period) will act as a disincentive for these journeys to continue taking place.
66. Domestic transporters could be impacted by a reduction in the number of long journeys although this is expected to have a limited impact. This impact is expected to displace activity from one area of England and Wales to another, rather than lead to a loss of economic activity. We do not have robust data on domestic journeys (especially on distances and durations) but initial analysis of internal cattle movements data²⁷ shows the average domestic journey is around 120km (line of sight). Roughly converted to road travel time, this suggests the average domestic cattle road journey is around 3 hours. This is well below the proposed maximum journey time of 21 hours for cattle and 9 hours for calves. We have less data for sheep and pig journeys, but our limited internal evidence²⁸ suggests average individual journeys of around 40km and 50km respectively. This suggests most domestic journeys are well below the proposed 21 and 18 hour maximum journey times. We have no data for poultry, where the maximum 4 hour broiler limit may have more of an impact.
67. In summary the total direct costs are estimated to be £55.3m across the ten-year appraisal period.
68. Admin costs and enforcement costs associated with implementing and enforcing these proposed measures have yet to be finalised.

Direct benefits

69. The scientific evidence linking specific journey times and welfare conditions with mortality and morbidity impacts is still developing. In light of this, it is not possible to quantify the extent to which individual animal welfare will improve as a result of these measures.
70. However, we expect this option to lead to a significant improvement in animal welfare, as live animals will be benefitting from the lower transport times because they are spending less time in a stressful environment and enjoy a lower risk of physical harm. Animals would also benefit from the improved thermal and ventilation conditions, space allowances and conditions at sea. As well as the positive impact on the animals themselves, most individuals in a society also assign some value to animal welfare and would derive a benefit from an incremental improvement in welfare.
71. We also expect there to be fewer deaths in transport due to better temperature control, better ventilation which would financially benefit the producer through reduced animals DOAs.
72. We also assume that there would be an increase in domestic slaughter and other production activity from the displacement of some animals which would have gone for slaughter abroad. Any animals no longer being exported will instead be processed domestically.
73. As long-distance journeys are minimised, those operators who divert to suitable local destinations will face lower fuel and transport costs. This should in turn reduce emissions of harmful pollutants, greenhouse gas emissions and offer small environmental benefits, although we expect the impact of this to be low.

Option 2: End live animal exports (excluding poultry) in England and Wales for slaughter and fattening where the animal would be slaughtered within 6 months of arrival, for export journeys beginning in or transiting through either country.

²⁷ From the British Cattle Movement Service (BCMS)

²⁸ From the Animal Movements Licensing System (AMLS) and the Animal Reporting Movement Service (ARAMS)

Direct costs

74. This policy option would only impact a small number of export journey types.
75. The largest impact would likely be on the export of cattle for fattening, which would completely stop – there were 24,200 animals exported for this purpose in 2018.
76. The other impacts would be for sheep journeys. There were 9,400 animals exported for fattening, and 6,400 exported for slaughter in 2018, and all such journeys would be banned under option 2.
77. There were no pigs exported for slaughter or for fattening in 2018.
78. Similarly journeys for breeding, and all poultry journeys would be unaffected by this option.
79. Admin costs and enforcement costs associated with implementing and enforcing these proposed measures have yet to be finalised.

Direct benefits

80. We would expect this option to improve animal welfare due to animals destined for slaughter abroad being sent to domestic abattoirs and not having to endure excessively long journeys. However as there are fewer animal journey impacted, compared to option 1, there is a smaller animal welfare benefit.

Option 3: Implement improvements to animal welfare for all journeys to, from and within England and Wales based on FAWC's recommendations on journey times and transport conditions, in addition to ending live animal exports (excluding poultry) in England and Wales for slaughter and fattening where the animal would be slaughtered within 6 months of arrival, for export journeys beginning in or transiting through either country. This is a combination of options 1 and 2 and is the preferred option.

Direct costs

81. The estimated direct costs of option 3 are not simply the sum of options 1 and 2, as there is some overlap between the two.
82. Cattle journeys are affected significantly in this option, through a combination of prohibiting slaughter and fattening exports, set out in option 2, and the reduction by 55% in breeding journeys set out in option 1. This could reduce exports by around 24,000 cattle a year.
83. Through the journey time limits set out in option 1, chicken and other poultry journeys would be affected to the same degree as detailed under option 1.
84. The sheep journeys for fattening and slaughter would be affected by the ban as set out in option 2, and in addition 50% of breeding journeys would be affected as set out in option 1.
85. Finally pig breeding journeys would be reduced by 23% as set out in option 1.
86. Domestic transporters could be impacted by a reduction in the number of long journeys although this is expected to have a limited impact. This impact is expected to displace activity from one area of England and Wales to another, rather than lead to a loss of economic activity. Due to data limitations, the scale of this displacement and distributional impact have not been monetised.

87. Admin costs and enforcement costs associated with implementing and enforcing these proposed measures have yet to be finalised.

Direct benefits

88. This option would combine the benefits of option 1 and 2. This would improve animal welfare on all journeys both domestic and those export journeys which are still permitted, e.g. breeding animals, as well as improving welfare by ending export journeys for animals going for slaughter and fattening.

Option 4: A voluntary assurance and associated labelling scheme, recommending that producers follow the measures in Option 1.

Direct costs

89. The same types of direct costs would apply as in option 1, however a lower number of animals would be affected in this option, as it is voluntary. In our modelling we assume that 10% of the exports which would be affected by limiting the journey times as set out in Option 1 would be adhered to on a voluntary basis.

Direct benefits

90. As in option 1 but reduced scale due to the fewer number of animals affected.

Data

91. The main source of information used to model the impact on exports and imports of live animals is data from the EU TRACES system. The system is the EU Commission's management tool, which records all required information between relevant parties for intra-EU trade of live animals. Most of the data recorded on TRACES is taken from Intra-Trade Animal Health (ITAHC) certificates, which are issued by an authorised vet for all shipments of live animals from and to the UK. While TRACES is designed for information exchange, risk management and traceability, the nature of the data collected also provides a good overview of the number and type of international live animal's movements. However, this does not cover domestic UK journeys. Table 5 shows the estimated total number of live animals²⁹ movements between the UK and EU in 2018, for all purposes (e.g. breeding, fattening & production and slaughter), although note that the policy options cover England and Wales only.

²⁹ The table details the estimates for the main species.

Table 5: Movements of live animals to/from the EU and UK in 2018

Number of animals transported in 2018	Exports				Imports				Total
	UK to Ireland		UK to rest of EU		Ireland to UK		Rest of EU to UK		
Cattle	11,000	28%	28,600	72%	30,000	62%	18,800	38%	88,400
Sheep	528,800	96%	20,900	4%	200	16%	800	84%	550,600
Pigs	15,100	86%	2,500	14%	483,500	99%	4,000	1%	505,000
Chickens	6,497,200	48%	6,909,200	52%	5,478,800	33%	10,906,600	67%	29,791,700
Other Poultry	2,478,700	55%	1,990,200	45%	410,900	57%	314,000	43%	5,193,700
Total	9,530,700	52%	8,951,400	48%	6,403,400	36%	11,244,100	64%	36,129,500

Source: EU TRACES data, 2018, rounded to the nearest hundred. Due to rounding, some totals may not correspond with the sum of the separate figures.

92. According to EU TRACES data on the movement of live animals in the EU, around 36 million live farm animal moves (around 1.1 million non-poultry) to/from the UK occurred in 2018, and the vast majority of these non-poultry moves were to/from Ireland.

93. As well as data on the number of live animal movements (Table 5), the TRACES system also provides an estimated journey time for each individual export/import journey. This allowed us to model the impact of the proposed maximum journey times, by applying these restrictions to the 2018 data.

Assumptions and Caveats

94. There are a number of key assumptions and caveats that sit behind this IA and analysis.

The key assumptions to note are as follows:

- **England and Wales journey data** – we have assumed that any journey that leaves the UK for the EU (excluding those journeys that go to the Republic of Ireland) is classed as an England and Wales to EU journey, and vice versa. Journeys that go from the UK to the Republic of Ireland are assumed to have originated from Northern Ireland, and vice versa. We further assume that trade between Northern Ireland and the Republic of Ireland will be unaffected by the proposals in this IA.
- **Geographical scope** – all options apply to England and Wales only.
- **Exemptions** – there is potential for a wide variety of exemptions to be implemented for options 1 and 3. However, the analysis for the import and export impacts assumes there will be no exemptions. The final exemptions regime will be dependent on further consultations.
- **Livestock journeys analysed** – The export and imports analysis look at journeys for the main farm animal species, specifically cattle, sheep, pigs and poultry. The analysis

does not include other animals that are transported and traded in the UK to a lesser extent, such as horses and goats.

- **Baseline trade forecasts** – the analysis assumes that future import and export levels will be equal to a five-year rolling average of previous trade levels, starting with 2014-2018. These levels are dependent on current trade arrangements and may change under a new trade deal.
- **Journey lengths** - the distribution of export and import journey times for 2018 is assumed to not change in future years
- **Behavioural response** - rather than completely stopping activity, the proposed options are assumed to prompt a displacement of activity. That is to say, it is assumed that those businesses which can no longer export will instead sell their live animals domestically, and vice versa for importers, and may export the final meat product instead.
- **Internal UK journeys** – Given current data limitations, we have not quantified or monetised the impact of the FAWC recommended journey times on internal UK journeys. The monetised total cost is therefore likely an underestimate. However, based on initial analysis of internal movement data, the proposed maximum journey times should be long enough to enable almost all internal journeys to continue. A small number of journeys from remote locations (i.e. Scottish Isles) may be affected, as well as domestic poultry journeys.
- **Competition** – While the domestic impact of the reduced journey times and associated competition impacts are expected to be small there may be niche markets and slaughterhouses, such as for veal or sows, where the impacts could be more significant. Through the consultation, we hope to build our evidence base around potential exemptions and explore the possibility of using exemptions to limit the extent of any negative competition implications.
- **15% price differential**³⁰ – we have assumed a 15% price differential to help monetise the loss of not being able to export or import, but we hope to gather more robust evidence in the consultation to help us estimate the difference in costs and profit margins of export vs domestic travel. The total loss of profit due to the reduced exports (and imports) is simply calculated by taking the total number of animals no longer being exported or imported, and multiplying this by 15% of the domestic value of these animals. For example if we are no longer able to export 100 sheep and the average value of a sheep domestically is £60, the monetised loss would be $(100 * (0.15 * 60)) = £900$.
- **Transport and transaction costs** - it is worth noting that the analysis assumes no difference in transportation and transaction costs for international compared to domestic journeys. However, exporting or importing a live animal is likely to be more

³⁰ We have very limited data on the transport costs to export live animals. Costs based on one stakeholder response suggests sea transportation of a lorry load of sheep costs around 20% of the domestic sheep slaughter weight price. To account for this small sample and different varieties of species, destinations, and routes we have assumed a lower 15% price difference for all export and import journeys. However, we explore a 20% differential the sensitivity analysis.

costly than domestic transport. This difference in transport costs could therefore reduce the loss in profit estimated in Table 4

- **Price changes** – the analysis assumes that both domestic and EU prices will stay constant in the scenario. In reality, the reductions in exports may cause an over (or under) supply in certain niche markets, for example veal. This could have a knock-on effect on prices for consumers.
- **Operating and enforcement costs** - operating and enforcement costs for all options have not yet been modelled. The detail in the “enforcement and operation” section describes the basics of how the proposed policies will operate and be enforced, and how the detail will be developed. However, at this stage we assume that there will be minimal additional operating and enforcement costs, as the policies could utilise current monitoring and enforcement systems.
- **Voluntary assurance and labelling scheme take up** - we assume that up to 10%³¹ of producers would sign-up to the scheme. This is an optimistic estimate as producers may face other constraints that stop them from joining, for example existing contracts with supermarkets, wholesalers or specific slaughterhouses.

Sensitivities and uncertainties

95. Inputs and assumptions feeding into the cost-benefit analysis modelling for export and import impacts have been informed by the best available evidence, based on existing data, findings from existing studies, and expert judgement. However, there is an inherent level of uncertainty associated with these assumptions and estimates. This section sets out some of these inputs, assumptions and associated risks, and discusses both their uncertainties and the effect that this could have on our estimated impacts. Where possible and proportionate, sensitivity analysis has been carried out.

96. The export and imports analysis look at journeys for the main livestock species (cattle, sheep, pigs) and also poultry. This does not include other animals that are transported and traded in the UK to a lesser extent, such as horses and goats. This means there is a risk the analysis is underestimated. However, given the relatively small number of these animals it is not expected that this will have a significant impact on the estimates.

97. A significant assumption underlying the imports and exports impact analysis is the assumed behavioural response of farmers and other operators, who are affected by the proposed measures. The analysis assumes that, where businesses are transporting live animals long distances, under the proposed measures they would transfer this activity locally. For example, under option 2:

- In the baseline, operator A transported and exported 500 sheep for slaughter to the EU. Under the proposed measures, it is assumed they would instead sell to a local slaughterhouse and export the final meat products.

³¹ There is a well established and intuitive relationship, which already informs many policies, between uptake of behavioural change schemes and perceived financial payments (or lower costs). A voluntary scheme which increases costs (and offers no reward) is unlikely to incentive large scale behavioural change. A 2019 literature review of 302 papers published within Europe over the past decade, on the factors relevant to farmers' uptake and participation in environmentally-friendly or 'Green' measures, found that “the clearest pattern across the literature was that environmental schemes with higher payments (or lower costs) achieve greater uptake”. We therefore concluded a voluntary assurance scheme would have minimal uptake, and have assumed an indicative 10% uptake to represent this.

- In the baseline, operator B transported and exported 100 calves for fattening to the EU. Under the proposed measures, it is assumed they would instead sell their calves locally.

98. It has been assumed that there would be sufficient local demand and capacity to absorb this additional activity. While there may be a knock-on impact on prices due to this extra supply, there is also some uncertainty as to whether niche markets (such as for veal or for fattening and production) would have enough local demand to meet this extra supply. One unintended consequence could be an increase in on-farm killing of unweaned male dairy calves, if there is no suitable local market within the UK for them.
99. If there is a limited domestic market for these live animal or the average domestic price falls, the impact and cost felt by those affected could be higher than estimated under the central scenario. For our central scenario, we assume a 15% lower price per animal sold domestically rather than exported, and a 15% higher price to buy an animal domestically rather than imported. This is because we assume that a profit will need to have been made in order to choose to export or import, but as a sensitivity test, we increase this differential to 20% and lower it to 10% for the low and high scenarios respectively (leading to a bigger and smaller potential losses of profit).
100. It is also worth noting that there is a lot of uncertainty around potential exemptions to the proposed measures under options 1 and 3. The current analysis assumes no exemptions and that all journeys above the proposed maximum thresholds will be affected.
101. Through the consultation, we hope to build our evidence base around potential exemptions and explore the possibility of using exemptions to limit the extent of any negative competition implications. How any proposed exemption would work in practice, and to what extent this would mitigate any concern around competition, will be explored further post-consultation.

Small and micro business assessment

102. As there is likely to be a direct impact on business, a high-level assessment was undertaken to explore the extent to which small and micro businesses would be affected. In general, the farming and agricultural sector tends to be dominated by small and micro business. In many cases, with the farm being run by the farmer, immediate family and often a handful of hired farm workers. The 2019 business population estimate publication, produced by BEIS, estimated that almost 80% of businesses in the agricultural sector in the UK had one employee or fewer – with 93% of businesses employing fewer than five people.
103. The livestock sub-sector shows a similar pattern to the wider agricultural sector. Table 6 shows data from the Farm Business Survey (FBS) on the number of farm businesses by type and size of business. The size of farm is defined by the standard labour requirement needed to manage each farm³². This suggests that the majority of livestock holdings tend to be relatively small – with around 70% of all livestock holdings requiring less than 3 FTE in standard labour requirements. This aligns with the general trend in the farming sector, where the majority of holdings tend to be small or micro-sized, with few employees.

³² Very small = less than 1 FTE (part-time), small = between 1 and 2 FTE, medium = between 2 and 3 FTE and large = 3 or more FTE

Table 6: Farm Business Survey 2018/19: Sample Characteristics - England by size groups

Number of businesses at June 2018 survey	Part-Time/Very small	Small	Medium	Large	All Sizes
Cereals	6,965	3,379	1,545	2,100	13,989
General Cropping	1,998	1,184	801	1,928	5,911
Dairy		738	908	4,193	5,839
Grazing Livestock (Lowland)	5,883	3,799	1,474	1,635	12,791
Grazing Livestock (Less Favoured Area)	2,886	1,865	951	1,226	6,928
Specialist Pigs	366	217	177	578	1338
Specialist Poultry	443	253	152	725	1573
Mixed	2,087	1,353	872	1,691	6,003
Horticulture	733	563	313	1,143	2,752
All Types	21,525	13,187	7,193	15,219	57,124

Source: Table K, Farm Accounts in England Results from the Farm Business Survey 2018/19

104. Table 7 shows the average farm business income (net profit) of farms by farm type and size, from the FBS. This shows that, as expected, farm business income generally increases as the farm size increases (with the exception of specialist pigs and poultry farmers from small to medium).

Table 7: Farm Business Income (Net Profit) by Farm Type and Size, England, 2018/19

£ per Farm	Part-Time	Small	Medium	Large	All Sizes
Cereals	29,000	80,600	105,400	229,500	67,300
General Cropping	20,900	70,800	86,300	242,600	106,400
Dairy		17,100	32,300	93,300	79,700
Grazing Livestock (Lowland)	7,700	8,800	16,800	33,300	12,500
Grazing Livestock (Less Favoured Area)	2,400	7,300	16,100	48,100	15,500
Specialist Pigs	15,700	36,900	22,900	45,100	29,600
Specialist Poultry	20,600	44,600	26,700	135,800	74,700
Mixed	21,000	16,700	39,400	96,200	45,500
Horticulture	10,500	26,900	41,600	96,100	52,100
All Types	18,800	28,300	46,500	115,900	50,400

Source: Farm Business Survey, Farm Business Income Table 3.1

105. While the average farm business income is relatively small, the total gross output from livestock farming was estimated at £6.3bn in 2019³³. The estimated annual net costs of the proposed measures (£6.6m) are relatively small comparison. These costs are likely to fall disproportionately on small and micro enterprise (SME) businesses, as defined by BEIS. Given that the vast majority of the farming sector is made up of micro and small businesses, exempting all SMEs from the proposed policy is not feasible. However, we will explore feasible exceptions to the proposed requirements, provided that there are sufficient welfare protections in place.

Annex A – Methodology

106. Under the modelled policy scenarios, the number of exports and imports of live animals falls compared to the 2018 baseline. This reduction in the number of export and import journeys varies for each policy option, as the severity of the restrictions and permitted journey lengths

³³ <https://www.gov.uk/government/statistics/total-income-from-farming-in-england> - Total income from Farming in England

varies under each proposed option. Table 8 shows the percentage reduction in the number of imports and export journeys between England/Wales and the EU under preferred Option 3, compared to the 2018 baseline trade figures.

Table 8: Option 3 scenario reduction in journeys between England/Wales and the EU, based on 2018 data

Animal	Purpose	2018 Exports	Restriction (Export)	Journeys Affected	2018 Imports	Restriction (Import)	Journeys Affected
Cattle	Slaughter	0	Prohibition	N/A	0	21 hours	N/A
	Fattening	24,200	Prohibition	100%	700	9 hours	100%
	Breeding	4,400	21 hours	55%	18,100	21 hours	55%
Sheep	Slaughter	6,400	Prohibition	100%	0	21 hours	N/A
	Fattening	9,400	Prohibition	100%	100	21 hours	33%
	Breeding	5,100	21 hours	50%	700	21 hours	50%
Pigs	Slaughter	0	Prohibition	N/A	0	18 hours	N/A
	Fattening	0	Prohibition	N/A	0	18 hours	N/A
	Breeding	2,500	18 hours	23%	4,000	18 hours	23%
Chickens	Slaughter	0	4 hours	N/A	0	4 hours	N/A
	Fattening	3,241,300	21 hours	0%	164,800	21 hours	0%
	Breeding	3,667,900	21 hours	6%	10,741,800	21 hours	6%
Other poultry	Slaughter	0	21 hours	N/A	0	21 hours	N/A
	Fattening	201,300	21 hours	68%	44,300	21 hours	68%
	Breeding	1,788,900	21 hours	46%	269,700	21 hours	46%

Source: Internal modelling of Option 3 impacts

107. The baseline “do-nothing” position for exports and imports was projected forward for the period 2021 to 2030. The reductions in export and imports (shown above for option 3, as an example) were then applied to the “do-nothing” projections for each policy option. Using this model, we were able to estimate and quantify the impact of the proposed options on the number of animals exported and imported, for the period 2021-2030.

108. As the policy options do not cover Northern Ireland, trade between Northern Ireland and the Republic of Ireland is unaffected.

Pricing

109. There is limited information about the profits currently available from trade in live animals and therefore it is difficult to estimate the monetary impact arising from the reduction in exports and imports. We will be seeking further information during consultation. To provide an indicative estimate for the cost-benefit analysis, we look at the prices for selling live animals domestically and assumed a 15% price increase to estimate the sale price after export/import for our central scenario (with the high and low scenarios of 10% and 20% respectively).

Table 9: Average live slaughter weight prices, central scenario (Assumed 15% differential) 2019

Species	UK average value per kg (2019, £)	Average weight (kg)	UK average price per animal	Assumed export /import sale price	Assumed price differential (15%)
Cattle	£2.48	349	£867	£997	£130
Sheep	£3.88	19	£75	£87	£11
Pigs	£1.53	85	£130	£149	£19
Poultry	£1.48	2	£3.26	£3.74	£0.49

Source: AHDB pocketbook, internal modelling (differentials might be slightly different to those calculated using figures in the table due to rounding)

110. Based on the modelled reduction in the number of exports and imports and the price differential for an average weight animal, we estimate the loss in profit associated with not being able to export or import at the higher price. We assume that the difference in transaction and transports costs are zero and calculate the loss in profits by multiplying the reduction in exports or imports by the price differential.

111. In the absence of specific price data on live animals imported into the UK, we have assumed the same price difference of 15% applies for imports.

Annex B – FAWC’s recommendations

112. In its 2019 report, FAWC provided recommendations on improving animal welfare in transport that were informed by the scientific evidence presented in the systematic review. FAWC’s recommendations in relation to live exports, journey times, thermal and ventilation conditions, space and headroom allowances and sea transport are outlined below.

Live Animal Exports

113. In response to the Government’s 2018 CfE, several concerns were raised by stakeholders in relation to live exports. The CfE found that 98% (247 of the 253) of the responses from the general public supported ending live exports. Many argued for ending exports for fattening as well as slaughter.

114. FAWC also highlighted the number of animals that are transported to an abattoir for slaughter are either travelling cast distances to find a suitable abattoir, or an animal that is transported for slaughter is passing several abattoirs in the UK to be slaughtered overseas³⁴. These concerns indicate the potential stress that animals are having to endure during the final stages of their life, when there are better alternatives available or could or should be available.

115. FAWC recommended that animals should only be transported if it is absolutely necessary and that the most welfare considerate route is chosen, factoring in journey quality, duration and suitability³⁵. Transporters intending to export animals to be slaughtered or furthered fattened in a different country should apply to APHA for consent to do so, indicating why alternative arrangements are not suitable.

116. FAWC also highlighted that a review of the availability of abattoirs in relation to the points of production be carried out, including further research into the feasibility of the economics, design

³⁴ FAWC: Opinion on the Welfare of Animals during Transport, pp 32

³⁵ FAWC: Opinion on the Welfare of Animals during Transport, pp. 32

and use of mobile slaughter facilities to reduce the need to transport animals over long distances particularly with regard to sea crossings³⁶.

Journey Times

117. FAWC highlighted that the ability to repeat the cycle of journeys as currently permitted under the regulations can pose concerns for animal welfare as animals could be exposed to excessively long journeys due to the lack of an absolute maximum journey limit³⁷. The systematic review reported that longer journeys tend to result in more death, injury and stress in most livestock species.
118. FAWC recommended that where robust scientific evidence was available for species specific journey time requirements, these should be adopted in the new regulations. Based on the findings in the systematic review, FAWC recommended new maximum journey time recommendations for broiler chickens, pigs, newly weaned pigs, halter broken/non halter broken horses, calves (up to 9 months), recently hatched chicks, cattle and sheep (See Table 3 earlier for a breakdown of the individual journey time recommendations).
119. FAWC also recommended that if any journey is to go beyond 21 hours for all animals, that written consent should be required and submitted to APHA for review, outlining why the journey should extend beyond 21 hours and alternative options that were considered³⁸.

Thermal and Ventilation Conditions

120. FAWC stated that thermal conditions and ventilation are a key aspect of welfare in transport and extreme temperatures and poor ventilation can cause animal welfare issues to arise. Animals being transported can be at risk of welfare issues arising due to sudden or severe changes in temperature during very hot or very cold weather and this can affect mortality rates if internal temperatures inside the vehicles cannot be maintained. The DOA figures detailed in Table 10 show that the number of birds dying during transport to abattoirs increases significantly over the summer months, an indication of the impact of high temperatures on mortality.

³⁶ FAWC: Opinion on the Welfare of Animals during Transport, pp. 33

³⁷ FAWC: Opinion on the Welfare of Animals during Transport, pp. 40

³⁸ FAWC: Opinion on the Welfare of Animals during Transport, pp. 40

Table 10: Total number of poultry transport welfare breaches in a given month and the number of birds dead on arrival owing to heat/cold stress

	Total no. of poultry transport consignments	Total no. of Birds	No. of DOA consignments with heat/cold stress	No. of DOA birds with heat/cold stress
January	286	2416634	2	522
February	281	1646758	1	42
March	286	1722785	0	0
April	240	1482144	1	240
May	220	1409991	1	200
June	273	2400346	1	135
July	275	1593955	16	9226
August	231	1334871	4	1448
September	229	1324987	2	1479
October	202	1164611	1	144
November	133	792429	0	0
December	133	792429	0	0

Source FSA exception reports 2019

121. FAWC recommended that overall, more research and evidence is required to determine the acceptable temperature ranges for the different species and classes of livestock. For cattle, sheep, pigs and poultry, FAWC suggested tentative temperatures ranges that could be used as a guide (and only when the external temperatures were extreme e.g. outside of 5-30°C). The current regulations should apply to all other species³⁹.
122. FAWC also noted the importance of determining a maximum and minimum temperature for all animals, outside of which they are not permitted to be transporter.

Space and Headroom Allowances

123. FAWC noted that space allowances are likely to be important for an animal’s welfare, explaining that if the space allowance is low, then the animals will be in cramped conditions and it may be difficult for animals to regulate body temperature. There could also be increased risk of rapping, compression or physical damage⁴⁰.
124. FAWC referenced their previous advice in 2013, which recommended that allometric principles should be used to determine space allowances in future regulations. Allometric principles reflect that the area occupied by an animal does not change linearly as it grows in weight, therefore, if an animal is twice the weight of another it will not take up twice the area. The equation below describes this relationship⁴¹.

$$Area (m^2) = k (\text{constant value}) \times \text{animal weight (kg)}^{\frac{2}{3}}$$

125. The relationship as illustrated above is allometric as the exponent which is applied to the animal’s weight is not equal to one. In its 2013 report, FAWC highlighted that most animal growth is allometric, with proportional measurements of body parts changing with growth (as

³⁹ FAWC: Opinion on the Welfare of Animals during Transport, pp. 39

⁴⁰ FAWC: Opinion on the Welfare of Animals during Transport, pp. 37

⁴¹ FAWC advice on space and headroom allowances for transport of farm animals, point 30

distinct from isometric growth, with body parts staying proportionally the same)⁴². Therefore, according to the above relationship, one animal twice the weight of another would need 59% more space. FAWC stated that this non-linear relationship is important e.g. an area that is just large enough for 10 animals each weighing 60kg will not be large enough for 20 animals each weighing 30kg, even though the total weight is the same at 600kg⁴³.

126. In its 2013 report, FAWC also emphasised that space allowances based on allometric principles would need to be based on credible estimates of k, which in its 2019 report, FAWC recommended for sheep and cattle.

127. FAWC also emphasised that animals other than poultry require enough head space to stand in their natural position with enough space above them to ensure adequate ventilation and prevent any injury or suffering. FAWC recommended specific headroom requirements for different species, outlined below in Table 11.

Table 11: FAWC’s recommendation on headroom heights for different species (height above full standing head height)⁴⁴

Species	Recommendations
Dairy cattle	20 cm
Beef cattle	30 cm
Sheep	22 cm
Pigs	9 cm
All other animals (excluding poultry)	20 cm above the head

Sea Transport

128. FAWC highlighted that transporting animals by sea can have adverse impacts on an animal's welfare. For example, the systematic review found that up and down and side to side can cause increased stress in sheep and pigs⁴⁵. FAWC recommended policy reforms to prevent animals from being transported in severe weather and sea conditions where increased side-to-side or up-and-down motions may occur⁴⁶.

129. FAWC recommend that vehicles should be carried in locations on vessels designed to provide natural ventilation as far as possible rather than relying on mechanical systems. Where mechanical systems are needed these should be designed and operated to provide the recommended temperature range at all times⁴⁷.

⁴² FAWC advice on space and headroom allowances for transport of farm animals, point 31

⁴³ FAWC advice on space and headroom allowances for transport of farm animals, point 34

⁴⁴ FAWC: Opinion on the Welfare of Animals during Transport, pp. 38

⁴⁵ FAWC: Opinion on the Welfare of Animals during Transport, pp. 43

⁴⁶ FAWC: Opinion on the Welfare of Animals during Transport, pp. 43

⁴⁷ FAWC: Opinion on the Welfare of Animals during Transport, pp. 43

130. FAWC also recommended that no animals are transported over the sea during Beaufort Wind Force of 6 or above, as these conditions have been shown to cause motion sickness in the cattle and sheep. Contingency plans in the case of poor sea conditions, and provision of venues to accommodate animals, should be the responsibility of the owner or transporter and should be inspected by APHA⁴⁸.

131. FAWC recommended that further funding should be made available for research in establishing maximum journey limits over the sea⁴⁹, as well as reviewing the concept of “neutral time” and ensuring that anyone responsible for transporting livestock and horses only should be required to receive suitable training as per the requirements of the proposed reformed regulation⁵⁰.

Annex C – Competition assessment

The competition assessment guidelines⁵¹ set out four questions to establish whether a proposed policy is likely to have an effect on competition. In particular, the assessments need to establish whether the proposed policies would affect the market by:

- Will the measure directly or indirectly limit the number or range of suppliers?
- Will the measure limit the ability of suppliers to compete?
- Will the measure reduce suppliers’ incentives to compete vigorously?
- Will the measure limit the choice and information available to consumers?

A brief summary of the four questions are presented in Table 12.

Table 12: High-level stage 1 assessment of the competition assessment

Question	Response
Q1...Will the measure directly or indirectly limit the number or range of suppliers?	No
Q2...Will the measure limit the ability of suppliers to compete?	Yes
Q3...Will the measure reduce suppliers’ incentives to compete vigorously?	No
Q4...Will measure limit the choice and information available to consumers?	No

Given this is a pre-consultation impact assessment, the current evidence base is not developed enough to allow for a more thorough appraisal of the extent to which competition impacts could occur. Through the consultation, we hope to build our evidence base around this and explore the possibility of using exemptions to limit the extent of any negative competition implications.

⁴⁸ FAWC: Opinion on the Welfare of Animals during Transport, pp. 43

⁴⁹ FAWC: Opinion on the Welfare of Animals during Transport, pp. 43

⁵⁰ FAWC: Opinion on the Welfare of Animals during Transport, pp. 44

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Annex D – Evidence from 2018 Call for Evidence

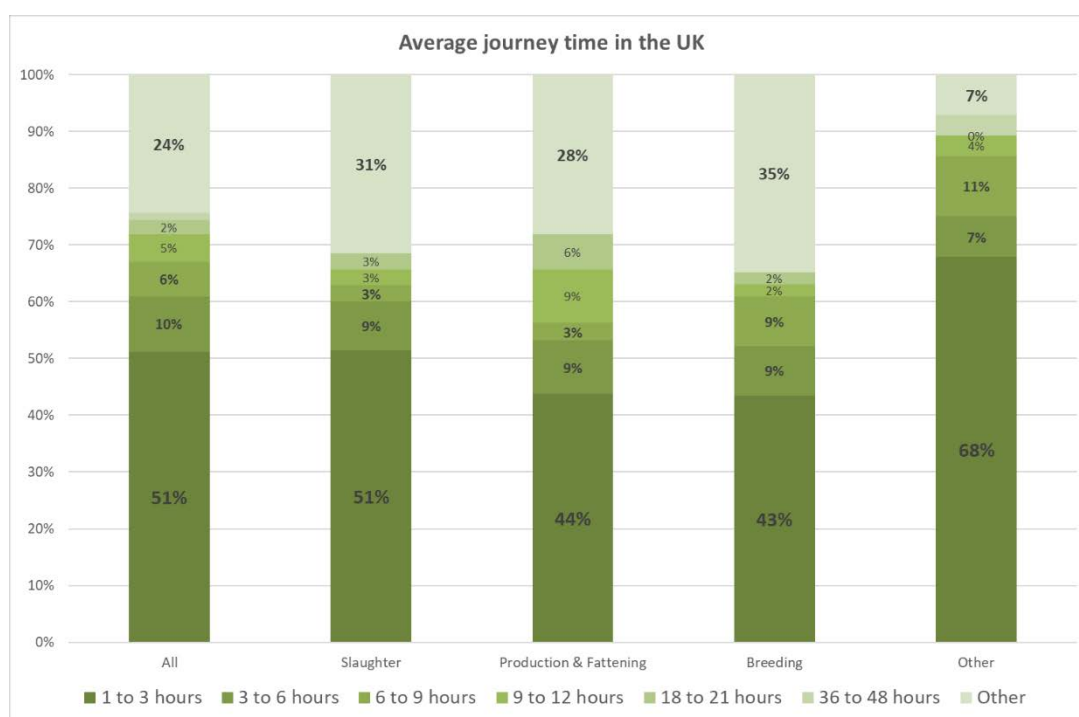
The Government launched a CfE to seek views on controlling live exports for slaughter, and to seek views and evidence on how we could improve animal welfare during transport⁵², after the UK leaves the EU. The CfE opened on 10 April 2018 and closed on 22 May 2018.

A total of 366 responses were received from a wide range of sectors including: the general public (69%), trade bodies (6%), welfare organisations (4%), farmers (10%) and others (11%). The data presented in this Annex summarises the responses to questions relating to average journey times.

Please note that the data in this Annex has been derived from this CfE, which is very limited, and should only be used for illustrative purposes. There was a total of 366 respondents to the CfE and they did not answer all the questions which means that the number of respondents for particular questions is significantly smaller, and may not be representative of the wider population. The total number of respondents for each question is noted under each figure or table. In addition, the CfE data is dependent on self-reporting by respondents and has not been verified.

Q1b) when transporting animals within the UK, what are your average journey durations?

Figure 1: Respondents' experiences on average journey times for live animals in the UK



Source: 2018, a call for evidence on controlling live exports for slaughter and to improve animal welfare during transport after the UK leaves the EU, based on a sample of 82 respondents (of these 40% of responders were farmers, 21% transporters, 15% general public, 11% trade bodies, 13% other responders)

Figure 1 shows that of all journeys reported by respondents, just over half (50%) were between 1 and 3 hours, with about two thirds (67%) of average journeys less than 9 hours.

⁵² <https://consult.defra.gov.uk/animal-health-and-welfare/live-exports-and-improving-welfare-in-transport/>

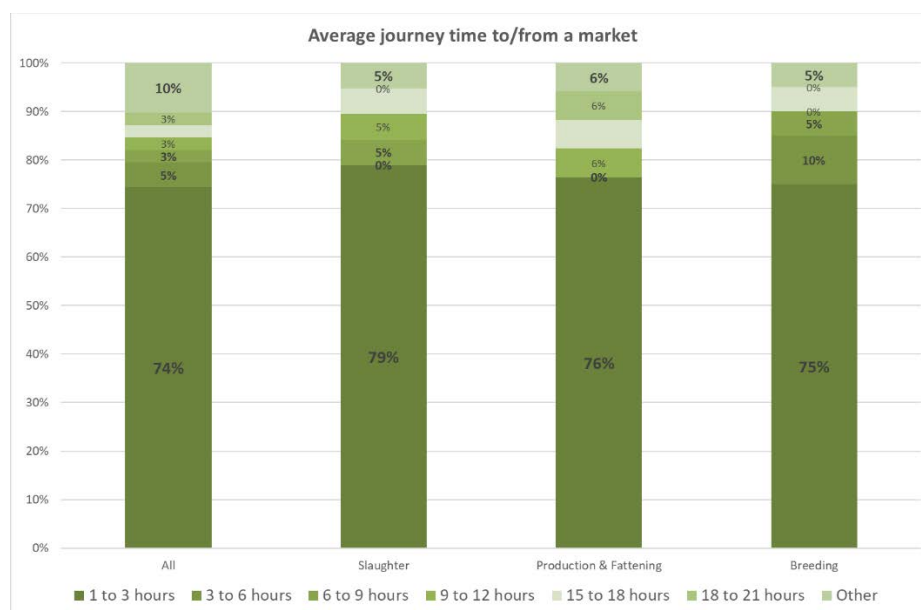
Table 13: Respondents' experiences on average journey times for live animals in the UK

Average Journey in UK – number of respondents	All	Slaughter	Production & Fattening	Breeding	Other
1 to 3 hours	42	18	14	20	19
3 to 6 hours	8	3	3	4	2
6 to 9 hours	5	1	1	4	3
9 to 12 hours	4	1	3	1	1
18 to 21 hours	2	1	2	1	0
36 to 48 hours	1	0	0	0	1
Other	20	11	9	16	2
Total	82	35	32	46	28

Source: 2018, a call for evidence on controlling live exports for slaughter and to improve animal welfare during transport after the UK leaves the EU, based on a sample of 82 respondents

Q1c) Do you buy or sell animals at market? If so, how long does it take to transport animals to or from the market?⁵³

Figure 2: Respondents' experiences on average journey times to or from markets



Source: 2018, a call for evidence on controlling live exports for slaughter and to improve animal welfare during transport after the UK leaves the EU, based on a sample of 39 respondents

Figure 2 shows that the majority (74%) of journeys to and from markets were less than 3 hours. For slaughter over 80% of journeys were less than 9 hours.

⁵³ Domestic UK animal markets.

Table 14: Respondents' experiences on average journey times to or from markets

Average Journey to or from a market – number of respondents	All	Slaughter	Production & Fattening	Breeding
1 to 3 hours	29	15	13	15
3 to 6 hours	2	0	0	2
6 to 9 hours	1	1	0	1
9 to 12 hours	1	1	1	0
15 to 18 hours	1	1	1	1
18 to 21 hours	1	0	1	0
Other	4	1	1	1
Total	39	19	17	20

Source: 2018, a call for evidence on controlling live exports for slaughter and to improve animal welfare during transport after the UK leaves the EU, based on a sample of 39 respondents

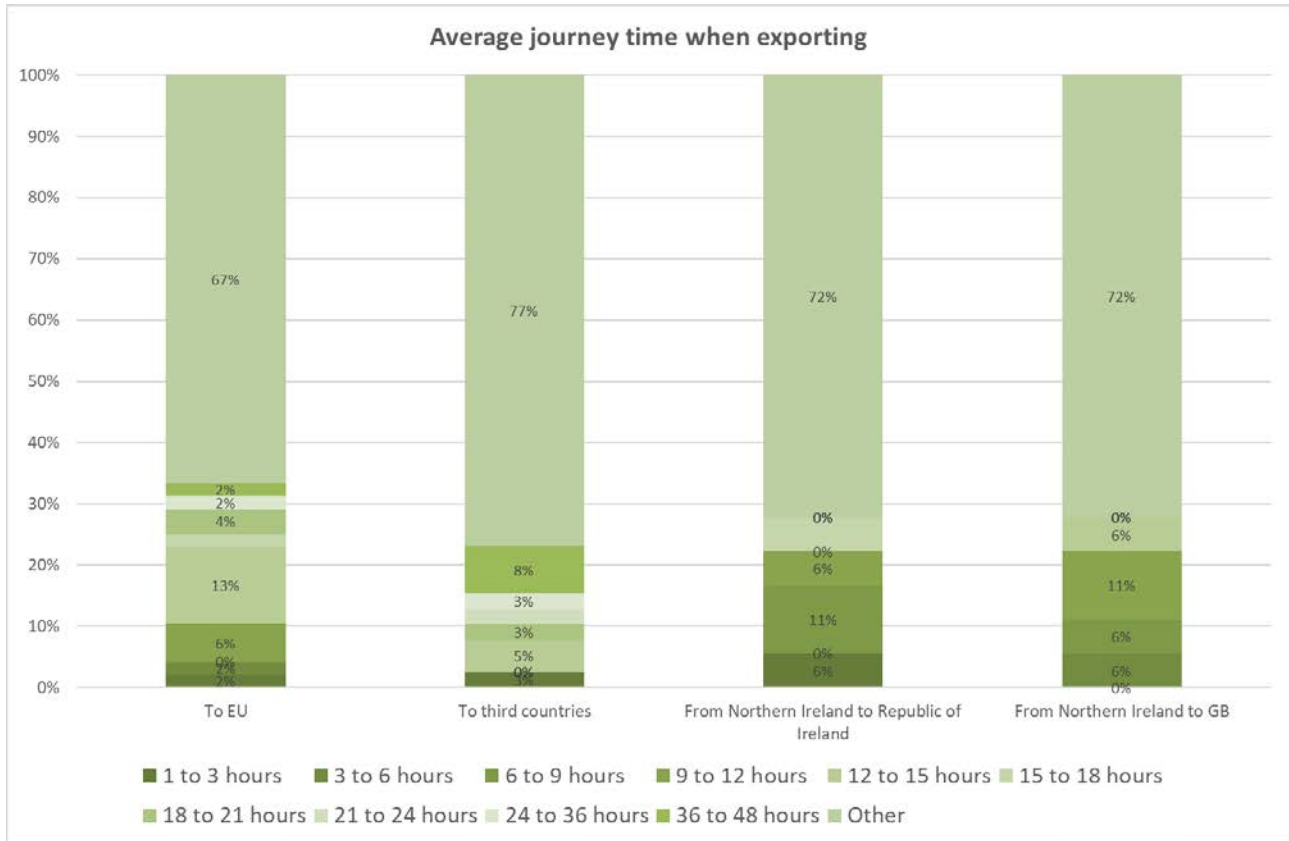
Q1f) When transporting animals to other EU Member States, what are your average journey durations?

Q1h) If transporting animals to third countries, what are your average journey durations?

Q1kiv) If transporting between Northern Ireland and the Republic of Ireland, what is the average journey duration of these movements?

Q1kviii) If transporting between Northern Ireland and Great Britain, what is the average journey duration of these movements?

Figure 3: Respondents' experiences on average journey times when exporting (covering question 1F-1Kviii)



Source: 2018, a call for evidence on controlling live exports for slaughter and to improve animal welfare during transport after the UK leaves the EU, based on a sample of 18 to 48 respondents

A large proportion of respondents reported 'other' for these questions, which makes it difficult to interpret. Figure 3 shows that, of those who reported a journey time, less than 5% of journeys to the EU and 17% of journeys from Northern Ireland to the Republic of Ireland were less than 9 hours.

Table 15: Respondents' experiences on average journey times when exporting

Average journey times – number of respondents	To EU	To third countries	From Northern Ireland to Republic of Ireland	From Northern Ireland to GB
1 to 3 hours	1	1	1	0
3 to 6 hours	1	0	0	1
6 to 9 hours	0	0	2	1
9 to 12 hours	3	0	1	2
12 to 15 hours	6	2	0	1
15 to 18 hours	1	0	1	0
18 to 21 hours	2	1	0	0
21 to 24 hours	0	1	0	0
24 to 36 hours	1	1	0	0
36 to 48 hours	1	3	0	0
Other	32	30	13	13
Total	48	39	18	18

Source: 2018, a call for evidence on controlling live exports for slaughter and to improve animal welfare during transport after the UK leaves the EU, based on a sample of 18 to 48 respondents