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IMPACT ASSESSMENT REPORT

Accompanying the document

Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the protection of animals during transport and related operations, amending Council Regulation (EC) No 1255/97 and repealing Council Regulation (EC) No 1/2005

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Glossary

Term or acronym	Meaning or definition
AMR	Antimicrobial Resistance
CAP	Common Agricultural Policy
NOx	Nitrogen Oxides
ECI	European Citizens' Initiative
EFSA	European Food Safety Authority
EU	European Union
ARB	Anti-microbial resistant bacteria
ARG	Anti-microbial resistant gene
GHG	Green House Gases
IRU	International Road Transport Union
GPS	Global Positioning System
NGO	Non-Governmental Organisation
SDG	Sustainable Development Goal
SMEs	Small and Medium-sized Enterprises
SSR	Self-Sufficiency Ratio
THETIS database	THETIS-EU is a platform that supports the implementation of a wide spectrum of EU maritime legislation
TRACES database	European Commission's online platform for sanitary and phytosanitary certification required for the importation of animals, animal products, food and feed of non-animal origin and plants into the European Union, and the intra-EU trade and EU exports of animals and certain animal products

1. INTRODUCTION: POLITICAL AND LEGAL CONTEXT

Every year, over a billion of animals are transported within or between Member States or being exported to third countries. The welfare of these animals is protected by European Union (EU) legislation which was adopted in 2005[1] (Council Regulation (EC) No 1/2005, later referred to as 'the Transport Regulation'), with some key provisions which were not amended in 2005 and are therefore based on the knowledge and the perspective dating from the 1990's.

Since then, science on the welfare of animals during transport has evolved[2], EU citizens pay increasing attention to this topic, and societal concerns have changed[3]. Significant developments in science and technology are not fully taken into account in the current EU legislation. This impact assessment analyses policy options designed to address these and other shortcomings highlighted in the Fitness Check of the EU animal welfare legislation, finalised in 2022[4], such as, among others, differences in controls and enforcement. The impact assessment supports a proposal for a Regulation on the **protection of animals during transport,** revising and repealing Council Regulation (EC) No 1/2005.

While the scope of the existing Regulation on the protection of animals during transport will remain largely unchanged, the impact assessment considers more targeted rules as well as some clarifications and simplifications of existing provisions. This includes specific rules on the movement of cats and dogs for economic purposes that go beyond the existing general requirements.

The following categories of animals that are commonly transported in the EU are covered by this impact assessment: vertebrate animals (including amphibians, fish and reptiles), whether or not they are intended for food consumption[5].

As established in the Fitness Check, the current Regulation hampers the implementation of Directive 2010/63/EU, since certain of its provisions seem difficult, albeit not impossible, to reconcile with the principles of reduction and refinement, enshrined in the Directive[6]. Hence, less specific requirements should apply for animals used for scientific purposes than today.

The initiative on the protection of animals during transport is carried out under the Farm to Fork Strategy[7] and aims to ensure a higher level of animal welfare by bringing the current rules closer to the latest scientific evidence, broadening their scope (by developing more specific requirements for

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[1] Council Regulation (EC) No 1/2005 of 22 December 2004 on the protection of animals during transport and related operations and amending Directives 64/432/EEC and 93/119/EC and Regulation (EC) No 1255/97, OJ L 3, 5.1.2005, p. 1–44.

[2] A summary of the main scientific findings in recent years is presented in Annex 7.

[3] European Commission, Directorate-General for Health and Food Safety, *Attitudes of Europeans towards animal welfare – Report*, Publications Office of the European Union, 2023, p. 82 and p. 84, https://data.europa.eu/doi/10.2875/872312.

[4] European Commission, *Commission Staff Working Document, Fitness Check of the EU Animal Welfare Legislation*, 2022, SWD/2022/0328 final.

[5] In the absence of scientific consensus on their sentience, insects kept for food and feed production are not covered by this initiative.

[6] Fitness Check, p. 46, footnote 241 (see note 4, page 1).

[7] European Commission, Directorate-General for Health and Food Safety, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system*, 2020, COM(2020)381 final.

certain categories of animals, such as cats and dogs), making them easier to enforce and addressing societal demands.

Political context

Adopted in December 2019, the European Green Deal[8] sets out to make Europe the first climate-neutral continent by 2050. The Farm to Fork Strategy is at the heart of the European Green Deal. It addresses comprehensively the challenges of sustainable food systems and recognises the inextricable links between healthy people, healthy societies, and a healthy planet.

Animal welfare – defined as "*the physical and mental state of an animal in relation to the conditions in which it lives and dies*"[9] – is an integral part of a sustainable food system[10] and there is a nexus between animal welfare, the environment, and sustainable development. Hence, under the Farm to Fork Strategy, the Commission has launched work on the revision of the EU animal welfare legislation.

Both the Council and the European Parliament have been paying increasing attention to animal welfare during transport in recent years. In several Conclusions, the Council has consistently highlighted the need for higher animal welfare standards when animals are moved for commercial purposes[11]. The European Parliament has also adopted a series of specific recommendations on animal welfare during transport[12], following 18 months of work of a European Parliament Committee of Inquiry on the Protection of Animals during transport[13]. The European Court of Auditors found that, while EU actions to improve welfare have been successful to some extent, weaknesses persist during transport[14,15].

An initiative on the protection of animals during transport would indirectly contribute to the United Nations' Sustainable Development Goals (SDGs) 12 '*Responsible consumption and production*' and

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[8] European Commission, *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, the European Green Deal*, 2019, COM/2019/640 final.

[9] Definition by the World Organisation for Animal Health, Terrestrial Animal Health Code, Section 7. Animal Welfare, Chapter 7.1. Introduction to the recommendations for animal welfare, Article 7.1.1. General Considerations, p. 2.

[10] European Commission, Directorate-General for Research and Innovation, Group of Chief Scientific Advisors, *Towards a sustainable food system: moving from food as a commodity to food as more of a common good: independent expert report*, Publications Office of the European Union, 2020, https://data.europa.eu/doi/10.2777/282386.

[11] Council of the European Union, *Council Conclusions on animal welfare – an integral part of sustainable animal welfare production*, 14975/19, Brussels, 2019; Council of the EU, *Council Conclusions on an EU-wide animal welfare label*, Ref 14047/20, Brussels, 2020; Council of the EU, *Council conclusions on animal welfare during maritime long distances transport to third countries*, 10235/21, Brussels, 2021.

[12] European Parliament, *European Parliament recommendation of 20 January 2022 to the Council and the Commission following the investigation of alleged contraventions and maladministration in the application of Union law in relation to the protection of animals during transport within and outside the Union, 2021/2736(RSP)*, 2022/C 336/04, 2022.

[13] European Parliament, Committee of Inquiry on the Protection of Animals during Transport, *Report on the investigation of alleged contraventions and maladministration in the application of Union law in relation to the protection of animals during transport within and outside the Union*, 2020/2269(INI), 2021.

[14] European Court of Auditors, *Animal welfare in the EU – Closing the gap between ambitious goals and practical implementation. Special report No 31*, 2018, Publications Office of the European Union, 2018, p. 5, https://data.europa.eu/doi/10.2865/950259.

[15] European Court of Auditors, *Transport of live animals in the EU – Challenges and opportunities*, Publications Office of the European Union, 2023, p. 4, https://data.europa.eu/doi/10.2865/211704.

3 '*Good health and well-being'*. As described in Annex 3, there is a positive relationship between achieving the SDGs and improving animal welfare during transport[16].

Relation with other EU initiatives

The revision of the Transport Regulation is intended to work in synergy with the proposal on the welfare of dogs and cats and their traceability and has interlinks with other EU initiatives and policies affecting both animals and transport, such as the EU animal health policy and certain EU social legislation relating to road transport. Further details on these and other pieces of EU policies and legislation considered in this Impact Assessment are provided in Annex 8.

2. PROBLEM DEFINITION

2.1. What are the problems?

As shown in the Fitness Check, when regulating elements of the food production system, animal welfare standards have to be balanced with economical and practical constraints to ensure that economic viability can be maintained. More details regarding the magnitude of the problems described below are further described in Annex 9.

2.1.1. Animals are transported in sub-optimal conditions

The Fitness Check concludes that there is a sub-optimal level of welfare of animals in the EU[17]. This is especially the case for animals for which targeted legislation is currently lacking, such as cats and dogs.

As further specified below, the main animal welfare issues are related to the fact that rules related to journey times, watering and feeding intervals as well as to minimum space allowances are grossly outdated (based on scientific opinions of 1992). Those consequences are further described below. Current conditions for animal transport on board of livestock vessels pose serious threats to animal welfare as animals are exposed to a number of high animal welfare and health risks, as demonstrated by several serious incidents in the past (boat sinking, consignments refused at arrival or blocked due to the Suez Canal blockage, etc.). In 2019, 88.5% of livestock carriers had one deficiency or more recorded by Port State Controls[18].

Additionally, increased stress caused by transportation affects the immune system and leads to higher susceptibility to infection[19]. Transport can lead to tissue damage, disease due to already present pathogens in the animal which under normal circumstances would not have led to disease and transmission of pathogens by infected animals to healthy animals[20]. In addition, there is a risk of spreading antimicrobial resistant bacteria. Furthermore, some diseases are specific to transport. An

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[16] Keeling L. et al., 'Animal Welfare and the United Nations Sustainable Development Goals', *Frontiers in veterinary science*, Vol. 6, No 1, Frontiers Media S.A, 2019, https://doi.org/10.3389/fvets.2019.00336.
[17] Fitness Check of the EU Animal Welfare Legislation (see note 4, page 1).
[18] Robin des Bois, Animal Welfare Foundation and Tierschutzbund Zürich, *78 EU-approved livestock carriers*, 2021.
[19] K. Vogel et al., 'Stress physiology of animals during transport', *Livestock Handling and Transport*, 5th ed., CABI, Wallingford, Oxfordshire, UK; Boston, MA, 2019, pp. 30-57.
[20] Broom, D. M., 'Welfare of transported animals: welfare assessment and factors affecting welfare', *Livestock Handling and Transport*, 5th ed., CABI, Wallingford, Oxfordshire, UK; Boston, MA, 2019, pp. 12-29.

example is shipping fever, which can occur in bovines and equidae[21]. Transportation of animals forms the biggest risk factor for the spread of animal diseases, some of which are zoonotic, i.e. transferable to humans[22]. Stress caused by transport amplifies this risk[23].

As explained in the Review 03/2023 from the European Court of Auditors, bad welfare conditions also translate into costs related to wounds, lameness, death and other issues, for animals transported for production or slaughter. For instance, as established in the Fitness Check this may lead to meat rejections in slaughterhouses which could amount to a financial impact corresponding to 43% of the producers' profit margin, putting the viability of the pig farming sector[24].

Cramped environments

The current space allowances are not in line with the latest European Food Safety Authority (EFSA) findings and must be adjusted to ensure enough space for transported animals. This is important, as cramped environments can lead to multiple hazards that will affect welfare negatively. For example, restriction of movement in cattle can lead to reduced stability as the animal is unable to adjust its footing in response to the movement of the vehicle. This can lead to bruising and an increase of stress, but also exposes the animals to the risk of injuries, such as becoming trampled, trapped, or crushed by others in the load[25,26]. Improper space allowances also worsen the problems linked to long journey times, by limiting the possibility to rest, the access to water or feed, and increasing thermal stress due to high humidity (urine, respiration) and competition for resources (fight). This leads to competition and aggression.

Lengthy journeys

The current legislation provides for maximum journey times (ranging from 8 hours to 29 hours, depending on the animal species and categories), but after a consignment has been rested for 24 hours, it may be transported again for rounds with the same maximum journey times, without any limit until reaching the place of destination, including those in third countries[27]. This negatively influences animal welfare because during transport animals are potentially exposed to several stress factors, the negative effects of which will increase the longer the journey takes[28]. Animals usually cannot lay down during transport while they consume energy in keeping their balance and their body temperature without being properly watered or often without being fed at all (without mentioning the competition between animals for space and water). Faeces and urine accumulate during long

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[21] Maeda, Y. and Oikawa, M., 'Patterns of rectal temperature and shipping fever incidence in horses transported over long-distances', *Frontiers in Veterinary Science*, Vol. 6, 27, Frontiers Media SA, 2019. https://doi.org/10.3389/fvets.2019.00027

[22] Schrijver, R. et al, *Study on the welfare of dogs and cats involved in commercial practices, SANCO 2013/12364*, 2015, p. 26.

[23] Rioja-Lang, F. C. et al., 'A review of swine transportation research on priority welfare issues: a Canadian perspective', *Frontiers in Veterinary Science*, Vol. 6, 36, Frontiers Media SA, 2019. https://doi.org/10.3389/fvets.2019.00036

[24] Fitness Check of the EU Animal Welfare Legislation, p. 42 (see note 4, page 1).

[25] European Commission, Directorate-General for Health and Food Safety, *Study supporting the Impact Assessment accompanying the revision of the EU legislation on the welfare of animals during transport*, Publications Office of the European Union, 2023, section 5.2.1., doi: 10.2875/110728. (Transport study).

[26] EFSA Panel on Animal Health and Welfare (AHAW), 'Welfare of cattle during transport', *EFSA Journal*, Vol. 20, Issue 9 (e07442), 2022.

[27] Council Regulation (EC) No 1/2005 of 22 December 2004 (see note 1, page 1).

[28] Welfare of cattle during transport (see note 26, page 4).

journeys, increasing humidity and discomfort. Certain driving behaviour, delays during transport and significant changes in the weather conditions trough very long journeys can increase the risks to the welfare of transported animals (e.g., animals transported from the west or north of Europe to the Middle East or Africa). When it comes to pigs, studies suggest that they are more sensitive to motion stress than other animals, a stress factor which presence is prolonged if journey times are longer[29].

Hot temperatures

The current legislation does not provide a maximum ambient temperature during which animals may be transported[30], even though this is an important factor influencing the heat load that is placed on animals during transport, which, if too high, can lead to heat stress[31]. For instance, as identified by EFSA, birds are very sensitive to heat stress. And with more than 1.3 billion poultry transported in the EU every year, the consequences may be quite substantial.

Problems related to long journey times are exacerbated under hot temperatures, for instance when it comes to difficulties to rest, water and feed. The exposure to high temperatures, sometimes to the extent of days and weeks in the context of exports, is known to lead to stress and discomfort in animals. Existing provisions are insufficient to prevent that animals are transported in vehicles that are too warm, especially now extreme temperatures are occurring more often due to climate change.

Vulnerable animals

The risks presented above are amplified during the transport of vulnerable categories of animals such as very young ones or end-of-carrier animals (dairy cows, sows, laying hens) for which mortality does not represent significant economic losses due to their low values.

For instance, every year 1.4 million unweaned dairy calves are moved across Member State borders, of which 580 000 animals experience journeys of more than 8 hours[32]. Unweaned calves are considered as particularly vulnerable animals because of their young age (low immune system, dependency on milk diet). Currently, most unweaned dairy calves are transported at an age of 2-4 weeks[33] (the minimum requirement is 10 days) and there is no minimal weight that they should have[34]. Very young calves are still developing their physiological and immunological systems, making them very fragile and prone to health hazards while body weight highly impacts mortality and morbidity. Current provisions are not in line with the latest scientific recommendations that unweaned calves should have a minimum age of 5 weeks and a body weight of 50kg before they are transported[35].

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[29] EFSA Panel on Animal Health and Welfare (AHAW), 'Welfare of pigs during transport', *EFSA Journal*, Vol. 20, Issue 9 (e07445), 2022.

[30] Council Regulation (EC) No 1/2005 of 22 December 2004 (see note 1, page 1).

[31] Welfare of cattle during transport (see note 26, page 4); Welfare of pigs during transport (see note 29, page 5); EFSA Panel on Animal Health and Welfare (AHAW), 'Welfare of equidae during transport', *EFSA Journal*, Vol. 20, Issue 9 (e07444), 2022; EFSA Panel on Animal Health and Welfare (AHAW), 'Welfare of small ruminants during transport', *EFSA Journal*, Vol. 20, Issue 9 (e07404), 2022; EFSA Panel on Animal Health and Welfare (AHAW), 'Welfare of domestic birds and rabbits transported in containers', *EFSA Journal*, Vol. 20, Issue 9 (e07441), 2022.

[32] Transport study, section 5.4. (see note 25, page 4).

[33] Welfare of cattle during transport, section 3.9. (see note 26, page 4).

[34] Council Regulation (EC) No 1/2005 of 22 December 2004 (see note 1, page 1).

[35] Welfare of cattle during transport, section 3.9. (see note 26, page 4).

The main stakeholders' views on these problems can be summarised as follows: according to Non-Governmental Organisations (NGOs), it is not natural for animals to be transported by any means as their psychological needs cannot be fulfilled[36]. There is a broad agreement among all stakeholder groups regarding the necessity of placing restrictions on animal transport, albeit to a lesser extent for business organisations[37]. One representative of European farmers also considers that the EU standards on animal welfare are among the highest in the world but recognizes the need for revision of the current legislation. Upholding these high standards ensures that the trust in the high value and quality of the European agricultural and food sector is maintained. Hence, it is in the interest of all stakeholders that all transported animals arrive in a healthy and good condition. Furthermore, this representative also considers that the quality of transport is essential in ensuring animal welfare (e.g. space allowances and temperature), more than the duration of the transport[38].

2.1.2. Few requirements for the transport of cats & dogs

There are currently 127 million cats and 104 million dogs kept in EU households (representing 68% of all companion animals in the EU), with a growing market for the trade of such pets. Regardless, the current EU transport legislation contains only two specific ces to cats and dogs, regarding young age and fitness for transport, and watering and feeding. Furthermore, while the general principles and certain provisions of the current EU legislation (e.g. approval of transport means, approval of transporters) apply to the commercial transport of cats and dogs, this is poorly implemented in practice. The legislation does not address the specific needs per species, age or health status of the animals. As a result, the health and welfare of cats and dogs during transport cannot be ensured. Consulted national authorities generally acknowledge the need for new EU provisions on the transport of cats and dogs[39].

2.1.3. Low uptake of new technologies

Automated systems that could help monitor and enforce measures contributing to animal welfare are not systematically developed and introduced for routine use. As indicated in the Fitness Check, various stakeholders suggest these shortcomings as a reason behind problems of compliance by operators and enforcement by competent authorities[40]. Furthermore, a large number of stakeholders – including over half of all business respondents to the public consultation – supports that there should be more technical requirements for the different means of transport on long journeys (e.g. ventilation, water supply and satellite systems)[41]. In its 2023 review on transport of animals in the EU[42], the Court of Auditors identified similar problems as stated by stakeholders in the Fitness Check and recommended "using digital tools to optimise the planning and logistics of animal transport"[43]

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[36] Transport study, stakeholder consultations (see note 25, page 4).
[37] European Commission, *Factual summary report of the online public consultation in support to the fitness check and revision of the EU animal welfare legislation, summary report*, 2022, p. 5
[38] Copa and Copega, *Copa and Cogeca's position on animal welfare during transport*, Brussels, 2021, p. 2.
[39] Transport study, Annex 2, p. 214 (see note 25, page 4).
[40] Fitness Check of the EU Animal Welfare Legislation, p. 118 (see note 4, page 1).
[41] Transport study, stakeholder consultations (see note 25, page 4).
[42] Transport of live animals in the EU – Challenges and opportunities (see note 15, page 2).
[43] Transport of live animals in the EU – Challenges and opportunities, p. 6 (see note 15, page 2).

and "to create a central EU IT system for digitalising certificates and authorisations, carrying out automatic documentation checks, and granting real-time access to journey data"[44].

There are still big challenges regarding monitoring and enforcing EU rules for the non-EU part of the journeys[45]. One of the weaknesses of the current legislation is that authorities mainly check compliance with the estimated journey times on the basis of self-declarations of transporters (journey logs). Although the use of new technologies (e.g. satellite navigation systems for animal transports) could help to prevent non-compliances, this potential is largely unused[46].

In addition, as established by the Court of Justice's jurisprudence, EU operators are responsible to ensure that certain requirements of the Transport Regulation are also met in those stages of the transport taking place outside the EU until the transports reach their place of destination[47]. Still, as shown in the Fitness Check, compliance with these provisions is very challenging to enforce. Better use of new technologies could help to remedy this[48].

2.2. What are the problem drivers?

As established in the Fitness Check[49] and further described below, regulatory failures are to a considerable extent the cause of animal welfare problems and the main cause of an uneven level playing field for EU business operators in the single market. Transport conditions that are harmful to animals are due to the fact that the regulatory framework is not aligned with the latest science on animal welfare, nor it is aligned with the latest technological progress. Moreover, this aspect has not kept abreast of ethical concerns and market drivers, and there is a lack of monitoring tools to ensure compliance with welfare requirements. In addition, certain external factors are problems themselves (e.g. economic dynamics) that go beyond the area of influence of the legislation on animal welfare during transport. The initiative therefore cannot address in a complete manner all factors that lead to sub-optimal welfare outcomes during transport.

2.2.1. Regulatory drivers

<u>Conditions of exports difficult to enforce</u>

As established in the Fitness Check, the main concerns for the welfare of animals relate to the non-EU leg of the journey[50]. Available information indicates that, for most transporters, it is challenging to ensure that applicable EU requirements are met after leaving the Union. The absence of agreements

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[44] Transport of live animals in the EU – Challenges and opportunities, p. 42 (see note 15, page 2).

[45] European Commission, Directorate-General for Health and Food Safety, *Commission staff working document accompanying the document Report from the Commission to the European Parliament and the Council on the overall operation of official controls performed in Member States (2017-2018) to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products*, Publications Office of the European Union, 2020, https://data.europa.eu/doi/10.2875/01218.

[46] Fitness Check of the EU Animal Welfare Legislation, section 4.1.2. (see note 4, page 1).

[47] Judgment of the Court of Justice of 23 April 2015, *Zuchtvieh-Export GmbH* v *Stadt Kempten*, C-424/13, EU:C:2015:259.

[48] Fitness Check of the EU Animal Welfare Legislation, Section 4.1.2. (see note 4, page 1). The use of such a system for animal transports would allow collecting reliable data on the state of compliance of operators in the EU and allow addressing enforcement weaknesses in a more efficient way, compared to today's system which is mainly paper based.

[49] Fitness Check of the EU Animal Welfare Legislation, p. 27 and p. 63 (see note 4, page 1).

[50] Fitness Check of the EU Animal Welfare Legislation, p. 16 (see note 4, page 1).

with EU neighbouring countries, together with poor retrospective checks and the inability of Member States to ascertain the conditions of transport and the feasibility of the plan for that part of the journey contribute to that concern. Furthermore, under the current legislation, which was designed in the past with the aim to regulate mainly the internal market, neither the Member States nor the Commission have the necessary IT tools, systems or software to readily monitor the route, temperature or driving hours of vehicles transporting animals[51].

Fragmented internal market due to differing national legislations

While the Transport Regulation has contributed to more equal conditions among EU business operators, a real level playing field in the single market has not yet been achieved. As illustrated by the examples below, differing legislation adopted at national level – in order to respond to growing citizens' concerns, since EU legislation has not been updated for a long time – results in a further partitioning of the internal market and an uneven playing field, causing practical problems for EU business operators involved in cross-border animal transports[52]. In this scattered legal landscape, there is still a sub-optimal level of animal welfare is certain Member States and regions.

Examples of Member States national rules and implementation on live animal transport going beyond EU legislation

- Germany has, with some exceptions, suspended long-distance exports of live animals for breeding to third countries (suspension of bilateral veterinary certificate with a series of destination countries as from 1 July 2023 for long-distance transports of breeding bovines, ovines and caprines)[53].
- Germany also adopted a maximum journey time for animals to slaughter of maximum 8 hours, and maximum 4.5 hours if the temperature is above 30°C, while calves under 28 days are not permitted to be transported within the country[54].
- Ireland applies stricter national rules on export to third countries by livestock vessels[55].
- The Netherlands has stricter national hot weather protocols[56].
- Sweden is another Member States who decided to restrict the journey times of young calves[57].

This driver is also interlinked with differences in the implementation and enforcement of common EU requirements, due to overly general provisions.

Overly general provisions leave too much margin of interpretation

Differences in implementation and enforcement still create obstacles to cross-border exchanges (leading to competitive advantages for certain operators, at the detriment of others)[58] but also to effective harmonisation, thus to the achievement of comparable levels of animal welfare across the EU[59]. This is partly due to the fact that certain provisions of legislative acts on animal welfare leave

[51] Fitness Check of the EU Animal Welfare Legislation (see note 4, page 1).
[52] Fitness Check of the EU Animal Welfare Legislation, p. 28 (see note 4, page 1).
[53] German Federal Ministry of Food and Agriculture, *Press Release No. 148/2022, Animal transports from Germany will be significantly restricted*, 2022.
[54] German Federal Ministry of Justice, *Tierschutztransportverordnung*, 2009.
[55] World Organisation for Animal Health, 'Inspection and Approval of Dedicated Livestock Vessels. Multi-regional Whole Journey Scenario workshop on long-distance transport by land and sea between Europe, the Middle East, and North Africa. 8 - 10 November 2022, Cairo, Egypt', 2022.
[56] Dutch Ministry of Agriculture, Nature and Food Quality, *Beleidsregel diertransport bij hoge temperaturen*, 2020.
[57] Swedish Board of Agriculture, *Transport av nötkreatur*, 2019.
[58] Fitness Check of the EU Animal Welfare Legislation, section 4.1.1. (see note 4, page 1); Animal welfare in the EU – Closing the gap between ambitious goals and practical implementation (see note 14, page 2).
[59] Fitness Check of the EU Animal Welfare Legislation, p. 25 (see note 4, page 1).

too much room for interpretation and application for both operators and authorities. These differences in interpretation and implementation in turn lead to 'a lack of consistency around enforcement'[60].

In particular, in the Transport Regulation, terms such as "appropriate" (used 39 times), "sufficient" (used 21 times) and "adequate" (used 14 times) are not defined and are interpreted very differently hampering coherent enforcement[61].

The lack of precision in the current animal transport legislation is further aggravated by insufficient common definitions. For example, in the case of transport, the fitness of animals or rest time have been interpreted differently by Member States[62] and there is no definition of the 'end of career animal'[63]. In addition, the division of responsibilities between keepers, drivers and transport companies is unclear, which hampers the enforcement of the rules related to the animals' fitness for transport[64]. The need to clarify the definition and identification of organisers and transporters and their obligations was also identified by the European Parliament[65]. In the stakeholder consultations, one representative of road transporters at global level underlined the problems linked to the lack of a precise description of the liability of the various parties involved in the animal carriage chain under the current legislation. Finally, although the Official Controls Regulation provides for a more harmonised approach, the risk-based approach used for official controls and the different levels of resources that Member States put into such controls contribute to the variations in enforcement.

Outdated legislation

The Transport Regulation does not take into account the latest scientific evidence and major technological developments in relation to transport operations. As highlighted in section 2.1.1., existing provisions on journey times, watering and feeding intervals as well as on minimum space allowances are based on scientific opinions of 1992. New scientific evidence is now available, in particular concerning journey times and space allowances. The outdated legislation causes animal welfare problems due to certain not updated management practices and transport conditions.

2.2.2. Societal driver

Increasing citizens' concerns, including ethics and sustainability

The increase/upward trend of societal demands is clearly evidenced in growing concern for animal welfare, as shown in the Eurobarometer[66] on the "Attitudes of EU citizens towards Animal Welfare"

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[60] European Commission, *Commission Staff Working Document, Evaluation of the European Union Strategy for the Protection and Welfare of Animals 2012-2015*, 2021, p. 57, SWD(2021) 76 final.

[61] Fitness Check of the EU Animal Welfare Legislation, p. 26 (see note 4, page 1).

[62] Rayment et al, *Evaluation of the EU Policy on Animal Welfare and Possible Policy Options for the Future*, European Commission, 2010, p. 6.

[63] Fitness Check of the EU Animal Welfare Legislation, p. 26 (see note 4, page 1).

[64] Report on the investigation of alleged contraventions and maladministration in the application of Union law in relation to the protection of animals during transport within and outside the Union (see note 13, page 2).

[65] European Parliament recommendation of 20 January 2022 to the Council and the Commission following the investigation of alleged contraventions and maladministration in the application of Union law in relation to the protection of animals during transport within and outside the Union (see note 12, page 2).

[66] Attitudes of EU Citizens towards Animal Welfare, report (see note 3, page 1); European Commission, Directorate-General for Health and Food Safety, *Attitudes of EU Citizens towards Animal Welfare - report*, European Commission,

from 2005 and 2015 and the latest Eurobarometer on animal welfare from 2023. Of note as well is that out of 10 successful ECIs so far, 6 relate to animals[67]. Many citizens have ethical concerns regarding animals being transported on long journeys[68]. According to the 2023 Eurobarometer on animal welfare, 83% of respondents shared the view that the travel time for the transport of live animals should be limited[69].

This trend includes concerns related to current and future sustainability challenges, such as food security and threats to public health (e.g. antimicrobial resistance (AMR))[70].

2.2.3. External factors

In addition to these drivers, some influencing factors are contributing to the problem, but these are not addressed as part of this impact assessment.

Economic dynamics and pressure to reduce costs are particularly relevant as animals are transported for various economic reasons. As any economic dynamic, there is a pressure to reduce costs balanced by the possibility of economic gain. This is why the level of welfare of transported animals grossly depends on their individual economic value at arrival. Animals with a low value are more exposed to the risk of bad welfare conditions because their mortality will marginally affect the overall economic gain. This is often the case with animals that are considered as by-products of other productions (e.g. dairy calves; end-of-carrier animals, such as laying hens that have become too old to lay eggs). Similarly, animals for slaughter have less value than fattening animals and animals with high genetic potential (breeding animals). A second economic dynamic related to the transport of animals is the extent to which animals are mainly fed by local seasonal resources (e.g. grassland) or by products from global trade. Ruminants (e.g. cattle, sheep) are often transported due to seasonal variation of feed availability while poultry and pigs are mostly transported for breeding purposes. Finally, market dynamics are the main factor for animal transport over long distances, due to price differences between Member States and a limited slaughter or processing capacity in some Member States[71]. Consequently, the regional production of meat within the EU does not always equal regional consumption.

Market dynamics also have a negative influence on the welfare of cats and dogs. The lack of precise animal welfare legislation at EU level regarding the breeding and trade of cats and dogs, as well as

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2015, https://data.europa.eu/doi/10.2875/884639; European Commission, Directorate-General for Health and Food Safety, *Attitudes of consumers towards the welfare of farmed animals*, European Commission, 2005, Attitudes of Europeans towards Animal Welfare - June 2005 - - Eurobarometer survey (europa.eu). The Eurobarometer surveys show that consumer awareness and citizens' interest in animal welfare have increased from 2005 to 2015. A shift in opinion was observed from those who "probably" believe animal protection should be better, to "certainly" (in 14 Member States, there are increases of more than 5%).

[67] European Commission, *End the Cage Age - European Citizens' Initiative*, 2018; European Commission, *Fur Free Europe – European Citizens' Initiative*, 2022. Out of 10 successful ECIs so far, 6 are related to animals.

[68] e.g. Eurogroup for Animals #StopTheTrucks campaign on live animal transport in 2017 and the ECI Fur Free Europe (see note 67, page 10).

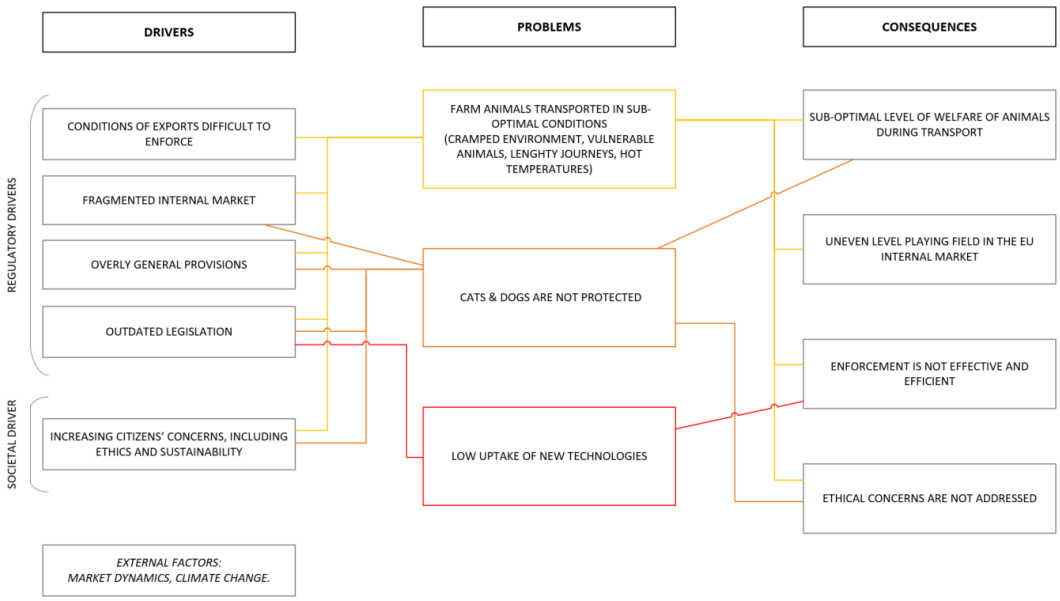
[69] Attitudes of EU Citizens towards Animal Welfare, report, p. 51 (see note 3, page 1).

[70] Animal welfare in the EU – Closing the gap between ambitious goals and practical implementation, p. 18 (see note 14, page 2).

[71] Transport study, section 3.3.4 (see note 25, page 4). It is to be noted that other factors such as production conditions related to the natural environment also play a role. For instance, pasture areas have a higher concentration in dairy cows, resulting in an output of calves which need to be transported to other areas.

the lack of traceability and the disparity in controls, has left room for the growth of illegal trade[72] of cats and dogs raised and transported under uncontrolled and very poor animal welfare conditions[73]. The trade of these animals represents a major economic activity with an annual value of cat and dog sales in the EU estimated at EUR 1.3 billion and a sector employing directly 300 000 people[74]. These last years there has been a significant increase in the illegal movements of cats and dogs[75].

Other key influencing factors of relevance for the welfare of animals during transport are related to climate change and increasingly hot temperatures during summer. **Figure 1:** Problem tree



2.3. How likely is the problem to persist?

The problems and drivers identified in the section above are closely interlinked and will likely continue to grow. Without an updated transport regulation, the gaps between scientific evidence on animal welfare and current rules are expected to widen, and their implementation to remain uneven across Member States. The different factors driving the pressure to reduce production costs in the food sector are not expected to radically change[76]. However, the current acute situation linked to the inflationary pressure is projected to be overcome[77] by the time the legislative changes assessed in this report would be adopted and enter into application after the relevant transition periods.

Legislation, policies, and private initiatives on animal welfare during transport are expected to keep developing at national levels[78], while EU rules will continue to be applied unevenly across the EU,

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[72] European Commission, *EU Enforcement action on illegal trade of cats and dogs*.
[73] Study on the welfare of dogs and cats involved in commercial practices, section 3.3.3. (see note 22, page 4).
[74] Study on the welfare of dogs and cats involved in commercial practices, p. 6 (see note 22, page 4).
[75] European Commission, Directorate-General for Health and Food Safety, *Alert and cooperation network: 2021 annual report*, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2875/328358, according to which among fraud suspicions the most frequent requests were related to the illegal movement of cats and dogs (114 out of 407 fraud suspicions in total). More than half of those requests involved animals coming from non-EU countries.
[76] As current food system views food as a commodity rather than a common good.
[77] European Commission, Directorate-General for Agriculture and Rural Development, *EU agricultural outlook for markets, income and environment 2022-2032*, Publications Office of the European Union, 2023, https://data.europa.eu/doi/10.2762/29222.
[78] See section 2.2.

especially with regards to the lack of monitoring and enforcement of those rules as well as the illegal trade of cats and dogs. Actions at national level are expected to develop in an uncoordinated and uneven manner leading to internal market distortions[79].

While tighter rules on maximum journey times might be expected in a minority of Member States[80], the increasing concentration of the livestock sector might overall imply longer distances between farms and slaughterhouses, leading to longer journeys for most of the animals transported. It may also be expected that other initiatives at EU or Member State level, such as environmental policies, will lead to a decrease in livestock populations or to long journeys in some Member States in order to meet emission targets and will thus have an indirect effect on animal welfare[81].

EU citizens' and consumers' concerns towards animal welfare and ethical issues over the conditions in which food-producing and non-food-producing animals are transported will continue to grow[82]. Those concerns will continue to be driven by the increasing awareness about the way animals are transported.

3. WHY SHOULD THE EU ACT?

3.1. Legal basis

The current EU Regulation on the protection of animals during transport is based on Article 43 of the Treaty on the Functioning of the European Union providing a legal basis for measures for working out and implementing the Common Agricultural Policy (CAP). The initiative would base itself on Article 114 as well, since the proposal also aims at ensuring the smooth functioning of the internal market, not only for animals covered under the CAP but also for other animals, such as cats and dogs, fur animals, certain types of wild animals, and animals used for scientific purposes.

3.2. Subsidiarity: Necessity of EU action

Animal transport is often of a cross-border nature. 1.4 billion animals are transported[83] each year with a cross-border movement within the EU Member States. Animal welfare requirements linked to transport at EU level require a harmonised approach and thus can effectively be regulated at EU level. The identified animal welfare problems and their underlying drivers occur across the EU, albeit to a different degree in different Member States. Finally, the identified animal welfare problems have transboundary consequences including threats to public health, such as AMR.

Action taken at national level is not expected to lead to considerably improved animal welfare and would only partially be able to meet citizens' concerns.

Given the already existing regulatory fragmentation, it is very unlikely that 27 Member States would legislate in a coherent way on the animal welfare requirements linked to transport. Action at national level would lead to a further fragmentation of requirements and increased differences in the levels of animal welfare in the EU Member States. Although current EU rules on the protection of animals

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[79] See more explanations in section 2.2.
[80] e.g., Germany introduced as of 2022 a maximum transport time for animals to slaughter of 8 hours, reduced to 4.5 hours in case temperatures risk to rise over 30°C (transport study, p. 89 and 91 (see note 25, page 4)).
[81] i.e., lower stocking densities, shorter journeys.
[82] Attitudes of EU Citizens towards Animal Welfare, report (see note 3, page 1).
[83] Transport study, p. 22 (see note 25, page 4).

during transport have brought some harmonisation to the sector[84], Member States continue to adopt their own differing rules on the transportation of animals. Member States also apply certain provisions and enforce rules differently, thereby creating obstacles to the smooth functioning of the internal market[85]. Furthermore, national rules cannot apply to operators from other Member States and therefore, cross-EU-border movements would be a driver for lower animal welfare standards. In addition, as various stakeholders are involved in animal transport, serious challenges manifest in terms of sanctioning operators who are not established in the country where they were found to not comply with the legislation (e.g. checks on animal welfare carried out during transit, at EU exit points and at the place of destination).

Providing further precision and extending the scope of the species-specific EU requirements for the transport of cats and dogs, would bring further harmonisation. There is indeed a considerable trade with cats and dogs in the EU[86]. There is evidence of a growing grey market of cats and dogs, involving also imports from non-EU countries[87]. Improving the welfare of cats and dogs during transport, combined with better enforcement tools at EU level, could help address the animal welfare problems observed and respond to citizens' expectations.

3.3. Subsidiarity: Added value of EU action

According to the Fitness Check, the overall objectives to contribute to agricultural and food production and avoid distortions of the internal market of agricultural products while ensuring a coherent approach to animal welfare, including by addressing common societal expectations and ethical concerns, are better achieved at EU level[88].

Actions only on a national level would result in Member States having their own, differing legislation. This would result in further fragmentation, distortion of competition for operators and an unequal level of animal welfare across the EU as well as a sub-optimal situation for sustainable EU agricultural and food production, making the costs of non-EU action very high[89]. The initiative would provide uniform and clearer requirements for the transport of animals and a better use of available technologies. The initiative would thus ensure a level-playing field for operators within the single market, facilitate intra-EU trade of animals[90] and provide a more efficient regulatory oversight. Hence, the high EU values on animal welfare would be more easily and coherently promoted at global level.

4. OBJECTIVES: WHAT IS TO BE ACHIEVED?

4.1. General objectives

The initiative seeks to contribute to sustainable agricultural and food production by ensuring a higher level of animal welfare, and avoiding distortions on the internal market, thereby contributing to a

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[84] Fitness Check of the EU Animal Welfare Legislation, section 4.1. (see note 4, page 1).
[85] Fitness Check of the EU Animal Welfare Legislation, page 38 (see note 4, page 1).
[86] European Commission, *Online sales of cats and dogs*.
[87] Commission, Directorate-General for Health and Food Safety, *Illegal trade of cats & dogs, EU enforcement action*, 2023, doi: 10.2875/236344
[88] Fitness Check of the EU Animal Welfare Legislation, p. 52 (see note 4, page 1).
[89] Fitness Check of the EU Animal Welfare Legislation, p. 52 (see note 4, page 1) and section 2.2.
[90] Fitness Check of the EU Animal Welfare Legislation, Section 4.2. (see note 4, page 1). According to consulted industry organisations, common EU requirements help to reduce distortions on the Single Market.

shift towards an economically, environmentally, and socially sustainable food system**,** as set out in the Farm to Fork strategy. The general objectives of the initiative are therefore to:

- contribute to a **sustainable food system**
- ensure a **higher level of animal welfare**
- bring animal welfare requirements closer to the latest **scientific evidence**
- address **societal demands**
- make **rules easier to enforce** (including through digitalisation)
- ensure a **smooth functioning of the single market**

4.2. Specific objectives

To adequately realise the aforementioned general objectives, the policy options address the following specific objectives:

- reduce animal welfare problems linked to long journeys and resting periods;
- ensure animals have more space when transported;
- improve the conditions of transport of vulnerable animals;
- avoid exposing animals to high temperatures;
- facilitate enforcement of EU rules on the protection of animals, including trough digitalisation;
- better protect animals exported to non-EU countries;
- better protect cats and dogs transported for commercial purposes.

Table 1: General and specific objectives

General objectives / **Specific objectives**	Contribute to a sustainable food system	Ensure a higher level of animal welfare	Bring animal welfare requirements closer to the latest scientific evidence	Address societal demands	Make rules easier to enforce	Ensure smooth functioning of the single market
SO1. Reduce animal welfare problems linked to long journeys and resting periods	✓	✓	✓	✓		✓
SO2. Ensure animals have more space when transported	✓	✓	✓	✓		✓
SO3. Improve the conditions of transport of vulnerable animals	✓	✓	✓	✓		✓
SO4. Avoid exposing animals to hot temperatures	✓	✓	✓	✓		✓
SO5. Facilitate enforcement of EU rules on the protection of animals, including through digitalisation		✓			✓	✓
SO6. Better protect animals exported to non-EU countries	✓	✓		✓		✓
SO7. Better protect cats and dogs transported for commercial purposes		✓		✓		✓

5. WHAT ARE THE AVAILABLE POLICY OPTIONS?

5.1. What is the baseline from which options are assessed?

The baseline against which the impacts are assessed is set at 2031. More information on the evolution of the baseline is provided in the relevant sections on impacts of the "no EU-action" scenario, for each of the measures, in Annex 9.

In a "no-policy-change" scenario, due to the expected reduction of the livestock population in Europe, it is expected that the number of journeys will decrease[91]. However, in the absence of legislative changes, longer journeys may represent an even larger share of all journeys due to the expected higher concentration of the livestock sector[92], increasing the distances to transfer animals. This is true for most Member States, while some other Member States[93] are taking measures to reduce or ban long journeys.

Without legislative initiative, the high pressure on margins and costs for business operators coupled with the expected increasing costs of transport may also lead some operators to minimise costs associated with ensuring the welfare of animals during transport (e.g. reduced space allowance) at the expense of animal welfare. So even if less animals will travel, their welfare during transport would not be sufficiently protected by the current standards.

The lack of compliance with the existing EU legislation and enforcement issues will remain, while the lack of harmonisation of welfare rules across the EU will increase due to Member States continuing to adopt and implement their own rules, at different speeds and with different requirements. Different levels of compliance, diverging interpretations, poor implementation and a fragmented legislative landscape will continue to cause market distortion and unfair competition for EU economic operators within the single market, as well as a continued sub-optimal level of animal welfare in the EU.

Trade in puppies and kittens has grown substantially in recent years within the EU, as well as through import from third countries. Consequently, a large number of dogs and cats are being transported in a commercial context all across the EU, also as part of illegal activities. No significant changes in the number of cats and dogs transported are expected until 2031, compared to the current situation[94]. Without a revised legislation, the current welfare consequences caused by the lack of specific requirements and monitoring tools could be expected to remain.

5.2. Description of the policy options

To address the specific objectives, this document considers six policy *measures*, which cover the different areas of intervention targeted by this initiative.[95] Under each *measure*, different *options* are defined as alternatives: with each time a main option and where relevant an alternative option (see table 2 below). They stem from the analysis carried out as part of the Fitness Check, the scientific

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[91] Transport study, p. 52 (see note 25, page 4).
[92] Eurostat.
[93] See examples in section 2.2.
[94] Transport study, p. 84 (see note 25, page 4).
[95] Details of the current rules for each of the 6 measures are provided in Annex 9. For space allowance, the current rules are specified individually for different weight or age of animals, for different species and for different means of transport.

evidence as confirmed by EFSA, the recommendations from the European Parliament Committee of Inquiry on the Protection of Animals during Transport and from the European Court of Auditors, the stakeholder consultations on animal transport and a supporting study[96]. Parameters for defining alternative options include different ways to address the specific problem, alternative options to mitigate the economic costs for operators including Small and Medium-sized Enterprises (SMEs), variations in relevant parameters (e.g. journey times, minimum age, maximum temperature etc.). The "non EU-action" is also to be considered as an alternative to the options and is assessed in detail for each measure in Annex 9.

At an early stage or during the impact assessment process, a number of these options have been discarded. These *options* and the justifications for discarding them are provided in section 5.3.

The measures including the main and alternative options are:

1) **Journey times and space allowance**. Maximum journey times of 9 hours for animals transported for slaughter (or, as an *alternative measure*, a maximum of 12 hours)[97]. For other journeys, a maximum journey time of 12 hours would be required or, *alternatively*, a limit of 21 hours followed by a 24 hours' rest in a control post and then another journey of maximum 21 hours before reaching the final destination[98] would apply. Species-specific space allowances per animal during transport by road, by rail, by roll-on-roll-off and by livestock vessel would be increased according to the scientific advice provided by EFSA. A table with space allowance parameters for each species is included in Annex 9, section 1.1.1.

2) **Export of animals to third countries.** Banning live animal exports by road[99] or, as an *alternative measure*, limit the journey times in line with what will apply for intra-EU transports in measure 1 above, and apply other relevant measures until the place of destination in line with the European Court of Justice ruling[100]. Banning live exports by maritime transport[101] or, a combination of *alternative solutions*: to require the presence of a veterinarian on board or *alternatively* an animal welfare officer[102], and the registration of the vessels under white flag for maritime safety purposes[103] or as an *alternative measure* that the vessels can be under white or grey flag. A transition period of 5 years is foreseen. The options of banning

[96] Transport study (see note 25, page 4).

[97] EFSA does not provide direct recommendations on maximum journey times but highlights that the longer the journey the more negative welfare consequences, and provides the number of hours after which animals give physiological signs that they suffer from hunger and thirst (different times from 3h to 12h depending of the species for thirst, and 12h for hunger (except for laying hens, who suffer from hunger after 10h)). The measure of maximum 9h would aim to align EU rules on maximum journey times with the EU legislation on social rights of drivers (which foresee maximum 9h when there is only one driver).

[98] 21h + 24h in a control post + 21h would allow alignment with the EU legislation on social rights of drivers, in the case where there are two drivers (the latter foresee maximum 19h in that case + approximatively 1h of loading the animals and 1h of unloading = 21h journey time). The 21h include a 1h resting time.

[99] The ban would foresee an exemption where the non-EU country of destination, and any non-EU country of transit, has been recognised by the EU as providing equivalent welfare protection to the EU rules on the welfare of animals during transport.

[100] Zuchtvieh-Export GmbH v Stadt Kempten (see note 47, page 7).

[101] The same exemption as for transport by road would apply.

[102] Both the veterinarian and the animal welfare officer would be private persons hired by the organiser of the transport, but the animal welfare officer would only have followed specific trainings without having the degree of a veterinarian.

[103] The *Paris Memorandum of Understanding on Port State Control* inspects ships for their safety and publishes yearly a list of flag States classified as white, grey or black, from quality flags to flags with a poor performance that are considered high or very high risk.

exports of animals would foresee exemptions for those third countries of destination and transit that are recognised by bilateral agreement as fulfilling equivalent welfare standards for the transport of animals as those in the EU.

3) **Transport of unweaned calves**. A minimum age of 5 weeks and a minimum weight of 50kg would be required to allow unweaned calves to be transported[104]. Provided that an efficient system for feeding the animals in the vehicles allowing to effectively feed calves with milk or milk replacers would be approved and installed in the truck, the maximum journey times allowed would be 19 hours[105]. If no such feeding system is installed in the truck, a maximum journey time of 8 hours would apply, as recommended by EFSA. For the requirements regarding age and weight, a 2 years' transition period is foreseen, while for the journey times a transition period of 5 years is considered.

4) **Transport in hot temperatures.** To avoid heat stress among transported animals, the approval of long journeys transports would be made subject to the weather forecast at the place of departure and at the place of destination (and, where applicable, at control points). If the forecast is **between 25°C and 30°C**, only short journeys (maximum 9 hours) would be allowed during the day, with continued access to water for the animals. If the forecast is **higher than 30°C**, only transport at night (i.e. between 21h00 and 10h00) would be allowed.

5) **New technologies for monitoring and controls**. **Real-time positioning** for all journeys[106] for all trucks would be required, or, as an *alternative option*, retrospective checks based on tachographs. A **digital application** with TRACES as an enriched database for official controls would be established. A transition period of 5 years is foreseen.

6) **Transport of cats and dogs.** Detailed animal welfare requirements for the transport of cats and dogs for economic purposes would be established, with a **minimum age** of 15 weeks to be allowed to be transported and with stricter rules on **feeding and watering**, **temperature** and **humidity** and **vehicle approvals**. As an *alternative option*, similar requirements plus a minimum age of 12 weeks would be allowed.

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[104] Compared to current rules requiring minimum 10 days, and no specific weight.

[105] 9h + 1h rest + 9h of road transport (the time spent on a boat, either in a livestock vessel or on roll-on-roll-off vessel, not counting in this maximum journey time).

[106] Excluding, as today, the transports carried out by farmers of their own animals, in their own means of transport for a distance of less than 50 km from their holding, as well as transhumance transports (see Article 1(2) of Council Regulation (EC) No 1/2005 (see note 1, page 1)).

Figure 2: Specific objectives and measures

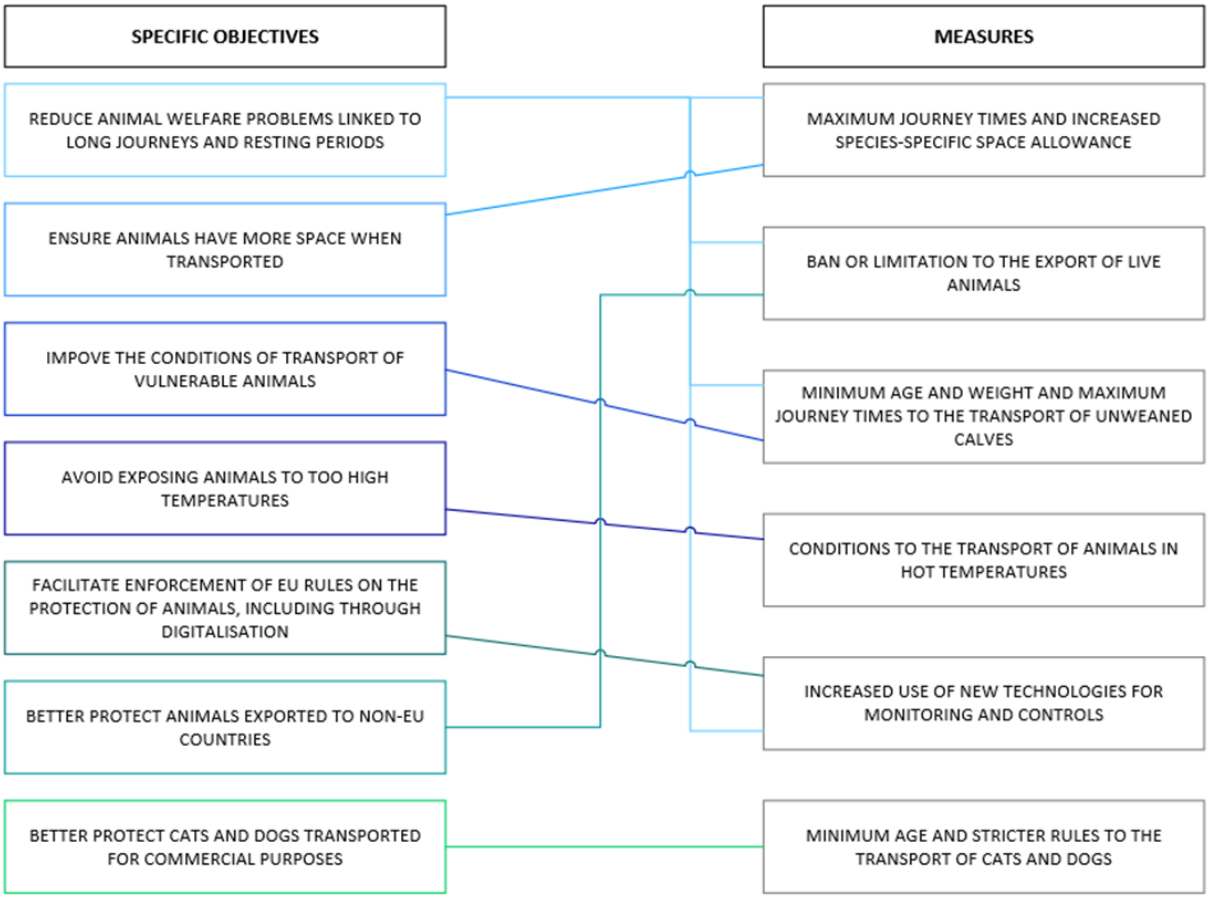

Table 2: Policy measures with policy options

Measure	Policy option	Alternative when applicable
1. Journey times[107] and space allowance	Journey time for slaughter (5 years transition period): 1.O.1A: 9 hours	1.O.1B: 12 hours
	Journey time for other journeys (5 years transition period): 1.O.2A: 12 hours	1.O.2B: 21h + 24h rest + 21h
	Space allowance (5 years transition period): 1.O.3A: Minimum species-specific space allowance (according to EFSA opinions)	
2. Exports	Road (5 years transition period): 2.O.1A: Ban exports of ruminants	2.O.1B: Limit journey time by road in line with the journey times limit applicable for intra-EU trade under measure 1, and apply also measures on space allowance and hot temperature at export
	Maritime (5 years transition period): 2.O.2A: Ban exports of ruminants	2.O.2B: Improved conditions: vet on board 2.O.2C: Improved conditions: animal welfare officer on board 2.O.2D: Improved conditions: only white flag 2.O.2E: Improved conditions: white and grey flags
3. Transport of unweaned calves	(5 years transition period for journey times, 2 years transition period for weight and age) 3.O.1: Journeys of max 19h for unweaned calves, with min. age of 5 weeks and minimum weight 50kg, provided that an efficient feeding system exists	
4. Hot temperatures	4.O.1: Approval of transport on long journeys subject to weather forecasts. If weather forecast is between 25°C and 30°C, only short journeys (max 9 hours) should be allowed during day time, with access to water for the animals. If weather forecast is higher than 30°C only transport at night (i.e. between 21h00 and 10h00) allowed.	
5. New technologies	(5 years transition period) 5.O.1A: Real-time positioning 5.O.2: A central database and digital application	5.O.1B: Retrospective checks based on tachographs
6. Transport of cats and dogs	(3 years transition period): 6.O.1A: Requirements for the transport of cats and dogs for economic purposes, e.g. age limits (15 weeks) and temperature conditions	6.O.1B: Similar requirements but lower age limit (12 weeks)

[107] The measure related to journey times does not cover birds (including poultry).

5.3. Options discarded at an early stage

For all measures, alternative policy options have been envisaged to address the problems and their drivers. However, a number of these options have been discarded as they were not viable (i.e. not proportionate, not feasible), deviate too much from EFSA's recommendations or were considered insufficient to address the problems. This concerns in particular:

- for the welfare of animals exported from the EU as well as maximum journey times within the EU, the option of applying the maximum journey time also for the time spent on livestock vessels or roll-on-roll-off vessel was discarded at an early stage because animals can be fed and watered during maritime transport. In addition, applying a maximum journey time for the sea leg of the journey is not feasible in practice as it would prevent access of certain island to the internal market.

- for space allowance during transport, options that would deviate from EFSA's recommendations would insufficiently address the animal welfare problems identified and therefore were not considered effective. Furthermore, as acknowledged e.g. by farmers' representatives, the conditions onboard vehicles and vessels are very important for the welfare of the animals transported.

- for transport of unweaned calves, the other options considered[108] were discarded as they were not addressing the main welfare problems identified with such transport (i.e. the need for calves to be fed with milk after 8h, while taking account of the economic importance of long distance transport of calves). Instead, the option assessed allows long distance transport of calves under specific conditions.

- for hot temperatures during transport, a full alignment with EFSA recommendations was discarded at an early stage since it would require all trucks to be equipped with air conditioning, which was considered neither economically nor environmentally viable. In addition, alternative options of transporting live animals by night only during the three summer months were considered, but discarded as it would be disproportionate for those regions where the temperatures are rarely above 25°C during the summer. Hence the option assessed consists of restricting transport and transport conditions when the weather forecast is above certain temperatures.

5.4. Packages of policy options

In addition to assessing the impacts per option presented under section 5.2., two *packages* of options with varying degrees of ambition have been designed, assessed (see section 6.2.1) and compared (see section 7.7.) based on the above list of measures and potential alternatives. These *packages* combine selected options for all measures.

[108] The other options assessed in the external study on transport were: 8h maximum journey times with minimum age of 5 weeks; 8h + 8h maximum journey time (with 3h of rest) with minimum age of 5 weeks; and 8h + 8h maximum journey time with minimum age of 4 weeks.

The definition of different packages of options was necessary in order to assess the impacts on production, consumption, imports, exports, producer price and consumer price, and food affordability. Those impacts are assessed using the Agricultural Commodity Market Model (see Annex 4), which requires the input of an aggregate of the costs of all measures considered. Therefore, only the costs of a package and not of individual options could be used to assess the impacts of the elements mentioned above. This also allowed for additional analysis of the distributional effects among directly impacted stakeholders and across EU geographies (see section 6.2.).

The assessment of these two packages is mainly based on a supply chain analysis and economic modelling for the main livestock species, namely pigs, laying hens, broilers, dairy cows, calves and beef cattle. In the below tables, this covers the parts of the packages that are not highlighted in grey. Cat and dog transport is not part of the modelling process as they are not part of food production and therefore are not covered by the model used (Agricultural Commodity Market Model). Furthermore, the measure on export is not taken into account in the modelling due to the difficulty to account for indirect effects of the measures (such as the share of animal exports that would be replaced by meat exports). Therefore, the assessment of the packages through the supply chain analysis and economic modelling is complemented by separate assessments of the costs and benefits of cats and dogs transport and export measures (i.e. as highlighted in grey in the below tables).

- **Package 1** corresponds to a stronger alignment with EFSA's recommendations (in particular when it comes to journey times) or a more prohibitive approach (ban on export) to address the animal welfare problems identified, and consists of the following policy measures and options:

Measure	Policy option
1. Journey times and space allowance	Journey time for slaughter: 1.O.1A: 9 hours
	Journey time for other journeys: 1.O.2A: 12 hours
	Space allowance: 1.O.3A: Space allowance according to EFSA opinions
2. Exports	Road: 2.O.1A: Ban exports of ruminants
	Maritime: 2.O.2A: Ban exports of ruminants
3. Transport of unweaned calves	3.O.1: Maximum journey times and minimum age and weight
4. Hot temperatures	4.O.1: Additional criteria when approving transport on long journeys subject to weather forecasts
5. New technologies	5.O.1A: Real-time positioning: 5.O.2: A central database and digital application
6. Transport of cats and dogs	6.O.1A: Requirements for the transport of cats and dogs for economic purposes, e.g. age limits (15 days) and temperature conditions

- **Package 2** corresponds to a balanced approach between the objective to align with the latest scientific evidence and the economic impacts, as well as an approach to address animal welfare problems linked to exports based on enhanced control tools rather than bans, and is composed of the following set of alternative measures and options:

Measure	Policy option
1. Journey times and space allowance	Journey time for slaughter: 1.O.1A: 9h
	Journey time for other journeys: 1.O.2B: 21h + 24h rest + 21h
	Space allowance: 1.O.3A: Space allowance according to EFSA opinions
2. Exports	Road: 2.O.1B: Limit journey time

	Maritime 2.O.2C + 2.O.2E: Improved conditions: animal welfare officer and white and grey flags
3. Transport of unweaned calves	3.O.1: Maximum journey times and minimum age and weight
4. Hot temperatures	4.O.1: Additional criteria when approving transport on long journeys subject to weather forecasts
5. New technologies	5.O.1A: Real-time positioning: 5.O.2: A central database and digital application
6. Transport of cats and dogs	6.O.1B: Similar requirements but lower age limit for transport (12 days)

The choice of options included in package 2 results from the assessment of the options in section 6.1.

Other combinations of options that would bring variations in terms of scope (e.g. excluding some measures from the two packages of options, or some species) are not assessed as packages of options as these would be insufficient to address the findings of the Fitness Check. In particular, such combinations would not allow to address the sub-optimal levels of animal welfare and internal market distortions which are wide-spread across animal species and categories[109], while at the same time addressing the other problems related to enforcement and the low uptake of technologies. Other variations of packages in terms of scope would also not be effective in meeting all specific objectives described in section 4.

In addition, since several options contain quantitative parameters (related to temperatures, to minimum age for transport, to maximum journey times, space allowance, etc.), for those options, in theory, the whole range of values between current requirements (or in the absence of EU requirements, current practice) and the recommendations of the EFSA opinions, could be envisaged for additional alternative options. However, there are limitations to the number of meaningful alternatives that are likely to have substantially varied impacts.

Overall, the main policy choices and trade-offs to consider in the packages of options for welfare during transport can be summarised as follows:

- the extent to which **journey times** should be further restricted, for different categories of animals[110], with a trade-off between animal welfare improvements and economic impacts, as assessed in sections 6.1.1. and 7.1.;
- the best way to address welfare problems for **animals exported from the EU** to non-EU countries: whether to ban such exports considering the difficulty to implement controls in third countries or to improve such transport conditions via additional requirements, as appraised in section 6.1.2. and compared in 7.2.

6. WHAT ARE THE IMPACTS OF THE POLICY OPTIONS?

This section presents the analysis of the impacts of the options (section 6.1. – which is further detailed in Annex 9) as well as of the two packages of options (section 6.2.). The assessment of the packages also includes the impacts on food security and food affordability, as well as the distributional effects.

[109] Fitness Check of the EU Animal Welfare Legislation, pp. 24-25 (see note 4, page 1).
[110] Slaughter, fattening and breeding animals, as well as different categories of vulnerable animals, such as unweaned calves.

6.1. Impacts of the policy options

Each impact of each option was scored using a Multi-Criteria Decision Analysis (MCDA). The scale used is a -2 to +2 scale (with 0 being neutral). When required, under some measures, options are combined and assessed together. More details on the methodology used to assess the impacts is available in Annex 4.

6.1.1. Journey times and space allowances during transport

Journey times and space allowances need to be assessed together rather than separately due to the strong interaction effects between the two as regards to the impacts. The impacts on animal welfare are first assessed per combination of options differentiating between journeys for slaughter and other types of journeys (fattening, breeding). The limitation of journey times to 9 hours for slaughter and 12 hours for other journeys (options 1.O.1A and 1.O.2A) would have a **high positive impact on animal welfare.** 2.6 million mammals are transported annually for a duration of over 9 hours for slaughter, and 13 million are transported annually for over 12 hours for other types of journeys between Member States[111]. It provides, overall, for a shorter journey duration than today[112] and does not imply an additional stop in a control post[113] where animals are exposed to further welfare risks (such as group stress and injuries due to unloading).. Another combination would be to limit journey times to 9 hours for slaughter (1.O.1A) with a maximum of 21 hours' journey + 24 hours' rest + 21 hours' journey[114] (option 1.O.2B) for all other types of journeys[115]. This **would also be a major improvement in terms of animal welfare**, although to a lesser extent, for the more than 1 million animals transported each year for production and breeding for journeys longer than 42 hours between Member States[116]. Combining options 1.O.1B (for which a maximum journey time of 12 hours should apply for slaughter) with 1.O.2B would still result in a significant animal welfare improvement compared to the baseline, however to a lesser extent as the options above. The impact on the welfare of animals of the combination of options 1.O.1B and 1.O.2A is not considered. Multiple agricultural stakeholders argue that with regards to animal welfare during transport, a scientific assessment should not focus on the length of the journey but rather on the conditions of transport[117]. However, EFSA has concluded that journey length is of big importance as animals are exposed to a number of welfare risks during transport, the exposure of which is prolonged with longer journey times[118].

The reduced journey times should be combined with **increased space allowances**, as recommended by EFSA (1.O.3) which would further improve **animal welfare.** Limited

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[112] For poultry, the current requirements already limit the maximum duration to 12h.
[113] Current rules allow journeys to resume after animals have been rested 24h in a control post.
[114] With 1 hour for rest and feeding each 10 hours, and permanent access to water.
[115] For poultry, the current requirements of 12h would still apply for other journeys than transport.
[116] Transport study, section 5.2. (see note 25, page 4).
[117] Transport study, consultation activities (see note 25, page 4).
[118] EFSA reports on animal welfare during transport (see note 26, page 4; note 29, page 5; note 31, page 5).

space allowance has been assessed by EFSA as the first factor reducing the ability of animals to undertake relevant biological functions during transport. Providing animals with this space during transport will allow them to adjust their posture in response to acceleration and other events related to driving, and to rest in a normal position, including room to lie-down and get up[119], which will substantially improve their welfare compared to current conditions. The space allowances proposed are in line with EFSA recommendations and are set per animal species and live weight. They are described in Annex 9.

The restrictions to the journey times coupled with the projected reduction of most of the livestock species in the EU are expected to result in a decrease of the number of transport hours with associated decreases in the number of kilometres travelled and the transport costs. However, increasing the space allowance for animals will increase the number of kilometres travelled to transport animals, as more trucks will be needed. As a result, the options will affect transport costs for transporters, but the limitations on journey time will mostly affect the rest of the supply chain (farmers, slaughterhouses, control posts and assembly centres operators) as certain establishments may become out of reach within the allowed time.

For the limitation on journey times, none of the options would have major **economic impacts** as regards animals transported for *slaughter* since relatively few of those journeys are performed above 9 hours in the EU (between 0.3% and 3.4% of animals are transported for slaughter across Member States, depending on the species). Therefore, options 1.O.1A (limitation of journey time to 9 hours for slaughter) and 1.O.1B (limitation of journey time to 12 hours for slaughter) are expected to be very similar in terms of economic impacts. However, a potential impact on revenues for slaughterhouses cannot be excluded. When it comes to journeys *other than for slaughter*, option 1.O.2A (limitation of journey time to 12 hours) would concern 4.2% of the bovines (compared to 1.4% with option 1.O.2B) and 4% of the pigs (compared to 0.2% with option 1.O.2B) transported for *fattening and further production* (e.g. of milk) between Member States. Around 50% (compared to between 9% and 16%, depending on the species with option 1.O.2B) of cows, goats, pigs and sheep moved between Member States for *breeding* would be prevented from making their journeys, affecting mostly Germany, France, Poland, the Netherlands and Ireland. Therefore, with journey time limitations, more animals would need to be sold on a more regional market, which would likely negatively affect the revenues of producers. It is therefore possible that option 1.O.2A, with a maximum of 12 hours' journey time as recommended by EFSA, may pose a threat to the economic sustainability of the sector. Option 1.O.2B would greatly mitigate this impact. A general transition period of 5 years is foreseen, to allow for a smooth adaption to the new rules. The option on space allowance (1.O.3), would lead to a reduction of the capacity per truck which would result in more vehicles being needed to transport the same number of animals. The space allowance proposed is in line with EFSA recommendations. Overall, the limitation of the journey times combined with the increase in space allowance is expected to result in an increase in the number of transport hours and costs for the combination of options 1.O.1A, 1.O.2B

[119] Transport study, p. 92 (see note 25, page 4).

and 1.O.3. The majority of the costs for transporters resulting from the combined options is due to the increase in space allowance. At EU level, the yearly net costs incurred by implementing option 1.O.1A combined with 1.O.2B and 1.O.3 could amount to, for all stakeholders, EUR 642 million for the pig sector, EUR 35 million for the laying hen sector, EUR 914 million for the broiler sector and EUR 1 069 million for the cattle sector. Implementing option 1.O.1A combined with 1.O.2A and 1.O.3 would amount to EUR 695 million for the pig sector, EUR 35 million for the laying hen sector, EUR 944 million for the broiler sector and EUR 1 194 million for the cattle sector.

Due to control posts not being needed anymore under options 1.O.1A, 1.O.1B and 1.O.2A, the enforcement costs for public authorities are expected to decrease, while they are expected to remain the same with the combinations that include option 1.O.2B. The remaining enforcement and administrative costs are expected to increase marginally due to the small increase of intra-EU transport resulting from the limitation in journey time and increase in space allowance (1.O.1A, 1.O.2B, 1.O.3).

Generally, lowering journey times and ensuring improved transport conditions leads to reduced morbidity and mortality of animals, increased meat quality and improvement of the sector's reputation, which may bring additional economic benefits to operators.

In terms of **social impacts**, an increase in the number of trucks and therefore drivers is seen in most combinations, except combination 1.O.1A with 1.O.2A and 1.O.3, due to the measure on space allowances, see Annex 9. Overall, limiting journey duration is expected to counter the increasing concentration that the livestock sector is facing, by incentivising the different parts of the supply chain to remain at a limited distance (i.e. breeding farm, fattening farm and slaughterhouse remaining within a limited perimeter instead of having the different operators relocating to different parts of the EU). One concern that multiple stakeholders have expressed is that stricter rules concerning the resting times for animals, would not coincide with the provisions laid down in Regulation (EC) No 561/2006 regarding drivers' resting times[120]. All combinations of options would be compatible with the said legislation, although option 1.O.1A (9 hours' limit) to a somewhat larger extent than options 1.O.1B and 1.O.2A (12 hours' limit).

As for **environmental impacts**, limiting journey times reduces the distance travelled, fuel used, and therefore emissions. It also incentivises the regionalisation of supply chains and seeks to incentivise the transport of meat over live animals, which has an important positive environmental impact. Increasing space allowances require more trucks and more transport to carry the same number of animals. The combination of options 1.O.1A with 1.O.2A and 1.O.3 is estimated to have the largest reduction of CO_2 and NOx emissions from transport, as despite the additional number of trucks required, the total number of kilometres travelled would be lower compared to today. With the 1.O.1A, 1.O.2B and 1.O.3 combination, and the 1.O.1B, 1.O.2B and 1.O.3 combination, the increase in the number of trucks needed is expected to see a marginal increase in emissions.

[120] Transport study, consultation activities (see note 25, page 4).

One organisation representing agricultural entrepreneurs at national and European level underlines that increasing space allowances will have a negative environmental impact as more transports will be needed to transport the same number of animals. However, it should be noted that transport makes up only a small portion of the environmental footprint of agricultural production. FAO indicates that post farmgate emissions (transports, slaughter etc.) account for only 2.8% of the emissions from livestock supply chains[121]. Hence, the overall impacts on emissions should be limited.

Dimension/ Policy Option	Baseline Scenario	1.O.1A + 1.O.2A+ 1.O.3	1.O.1A + 1.O.2B+ 1.O.3	1.O.1B + 1.O.2B +1.O.3
Animal Welfare	0	2	1.9	1.8
Environmental	0	0.5	-0.2	-0.4
Economic	0	-1.8	-0.6	-0.6
Social	0	0	-0.1	-0.1
Total Score	0	0.18	0.25	0.18

Stakeholders' views on the policy options concerning limiting journey times varied. Consulted business and professional organisations considered the current legislation sufficient, while 96% of the respondents to the public consultation (of which 92% were citizens) were in favor of adopting maximum journey times. Some remote regions of Finland could experience challenges with the limits of journey times for slaughter due to a less dense slaughterhouse network (however a derogation is foreseen where no slaughterhouse is available within 9 hours). A representative of the meat industry at EU levelindicated that further limiting journey times can be difficult for some regions of Europe, in particular for big countries. They stress that the transport of animals contributes to avoiding the concentration of livestock in the regions where animals are born, giving the opportunity to develop specialised production activities in other regions[122]. On the other hand, animal welfare NGOs favour a limit of 8 hours for all animals. All interviewed stakeholders as well as the members of the subgroup[123] on transport of the EU Animal Welfare Platform favoured better enforcement and increased specificity of future legislation. Some industry representatives would prefer a focus on better enforcement of existing rules instead of than a legislative revision. However, as demonstrated in the problem definition and the analysis of negative animal welfare consequences, simply focusing on improved enforcement without changing the rules, for instance as regards space allowance, would not be sufficient to address the problems.

6.1.2. Export of live animals

The largest share of EU exports of live animals is related to the export of bovines (over 1 million animals per year) and sheep and goats (over 3 million animals per year). Hence,

[121] Food and Agricultural Association of the United Nations (FAO), *Global Livestock Environmental Assessment Model (GLEAM)*.

[122] Transport study, consultation activities (see note 25, page 4).

[123] Composed of Member States experts, industry and NGO representatives, and independent experts (European Commission, Directorate-General for Health and Food Safety, EU Platform on Animal Welfare, *Meeting of the sub-group on transport – Limiting journey times – Third meeting, 24 June 2022 10-12:30 (Videoconference on Teams) – Minutes*, 2022, aw_platform_20220624_sub-transport_min.pdf (europa.eu)).

the options explored mainly relate to these species[124]. Of all transported bovines, 62% are exported by sea (involving some road transport as well) and 37% exclusively by road. 96% of the transported sheep are exported by sea and only 4% by road. The total value of EU exports of live bovines and sheep and goats to third countries is more than EUR 1.5 billion[125].

The options to ban the export of live small and large ruminants by road and maritime transport (2.O.1A and 2.O.2A) would **improve animal welfare** for EU animals, as it would prevent the risk of heat stress, prolonged hunger, thirst, loading, unloading, handling stress, disease and other animal welfare problems caused by long journeys. However, the impact on the overall welfare of animals transported internationally may be more limited as it is likely that most importing countries would import animals from some other countries instead of importing EU meat. Imposing a limit to journey duration and stricter conditions of transport would still mean a significant improvement (for road transport: 2.O.1B; for maritime transport: 2.O.2B, 2.O.2C, 2.O.2D, 2.O.2E).

A ban would have important negative **economic impacts** on the EU, in terms of revenue loss from exported animals for farmers but also for export companies, as animal exports account for 3.3% of gross indigenous production in the bovine sector, and 10% for sheep and goats[126]. Thus, the impact on both sectors, but particularly the sheep and goat sector, would be substantial as this quantity would have to be diverted either to meat exports or be sold on the EU market. However, evidence suggests that the export of animals can only partly be replaced by the sales of meat[127]. Since demand for food tends to be price inelastic (consumers will not significantly increase their mutton consumption if price decreases), the downward impact on prices (due to more meat having to be sold on the EU market) would likely be considerably higher than those percentages. It is estimated that an export ban would increase the supply of beef by 2.3% and supply of mutton by 7.5% (i.e. by 39 298 tonnes)[128], which would affect market prices. Loss of revenues due to banning exports of animals would affect only operators (farmers, traders) involved in live animals exports, while losses due to a price decrease would affect all beef and sheep producers in the EU. The overall short-term effect is estimated to amount to EUR 1.9 billion per year[129]. A ban would however decrease enforcement and administrative costs for public authorities and avoid difficulties that may arise with guaranteeing the compliance with the EU welfare standards until destination in a third country, depending on the third country concerned. These savings may however be limited as the number of transports between Member States may increase. A general transition period of 5 years is foreseen for both bans as a mitigating

[124] For pigs, although exports of meat account for a far higher proportion of EU production, exports of live animals account for a far lower proportion of EU production (0.2%) than in the case of bovines or sheep and goats.

[125] Compared to the number of live animals exported, the number of animals imported into the EU is very small. In 2020, the value of the imported animals was EUR 5.74 million (data from Comext).

[126] Calculated as a percentage of meat production in carcass weight equivalent (EU agricultural outlook for markets, income and environment 2022-2032 (see note 77, page 11)).

[127] Transport study, p. 119 (see note 25, page 4).

[128] Transport study, p. 120 (see note 25, page 4).

[129] Transport study, p. 120 (see note 25, page 4). This estimate is calculated based on the values of exports of sheep, goats and cattle, the additional sales of meat (instead of live animals), and the price effect due to increased supply on the EU market.

measure. The alternative option to impose restrictions on journey times[130] would bring additional costs for operators. While the number of kilometres travelled may be reduced, operators will need to upgrade their trucks for increased space allowances.

For maritime transports, it is estimated that upgrading existing vessels to make them compliant to white flag (option 2.O.2D) or to white and grey flag (option 2.O.2E) requirements would cost around EUR 20 million per vessel, plus EUR 5 000 per vessel for the registration of the flag[131]. For white and grey flags, it is estimated that 19 vessels would need to upgrade and 39 need to register a new flag. 44 would need to upgrade and 80 would need to register if white flags only are authorised[132].

Another cost is related to the requirement of having a veterinarian on board of vessels[133] (2.O.2B). This may be very challenging to implement given the low interest of the job for veterinarians, which would render the measure very costly to make it attractive, up to EUR 20 000 per journey. There are about 750 maritime journeys per year. Another similarly effective option could therefore be to instead require the presence of an animal welfare officer, who would be a member of the crew trained specifically on animal welfare issues (2.O.2C). The average cost of training per person per year is estimated at EUR 241[134] for each of the 88 EU-registered vessels. When it comes to administrative costs, an increase of the enforcement costs associated with the option of upgrading standards for livestock vessels could be expected.

Overall, option 2.O.2B is estimated to cost EUR 7.5 million per year for the presence of a veterinarian on board, while option 2.O.2C amounts to EUR 21 208 per year for the training of an animal welfare officer. Option 2.O.2D would result in a one-off cost of EUR 880 400 000, while option 2.O.2E would result in a one-off cost of EUR 380 195 000.

A ban on export would have a positive **environmental impact** if only looking at the environmental impacts of EU production, as it would reduce the emissions of CO2/NOx by trucks and livestock vessels. However, since trading partners would likely switch to importing live animals from other third countries, the environmental impact linked to emissions might be unchanged or negative. If journey conditions are improved (2.O.1B; 2.O.2B; 2.O.2C; 2.O.2D; 2.O.2E), the emissions by trucks and livestock vessels would not be expected to vary significantly, as the number of animals transported is not expected to vary significantly due to the rerouting of some exports which became out-of-reach. However, 64% of vessels have been reported to have pollution deficiencies such as the quality of fuel oil or the segregation of oil and water ballast[135], and 36% of EU-approved livestock vessels have suffered major incidents such as collisions or oil spills that clearly

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[130] The journey time limitation would be similar to the intra-EU journey time limitations.

[131] Transport study, p. 117 (see note 25, page 4).

[132] See Annex 9 for details.

[133] Estimated by industry to amount to between EUR 5 000 and EUR 20 000 per journey.

[134] In consultation with national authorities.

[135] European Parliament, Directorate-General for Internal Policies, Policy Department for Structural and Cohesion Policies, *Animal welfare on sea vessels and criteria for approval of livestock authorisation - PE 690.876*, 2021.

have negative environmental implications[136]. The measure foresees stricter conditions for livestock vessels which would greatly increase safety and compliance, including reducing the illegal disposal of carcasses in waters leading to environmental contamination.

The transport of animals to third countries by trucks is partly done by EU-registered companies, which would therefore be negatively impacted by the ban envisaged in the main option. However, the **social impacts** on EU transporters' workforce are expected to be limited under the option limiting journey time since it is likely to result in new transport patterns. Most livestock vessels are registered outside the EU and their employees mostly come from outside the EU. Hence, the social impacts at EU level would not be significant for livestock vessel transports either under a ban. The social impacts would also be limited for the alternative options, as described in Annex 9.

Dimension/ Policy Option	Baseline Scenario	2.O.1A + 2.O.2A (ban)	2.O.1B + combination of 2.O.2C (animal welfare officer) and 2.O.2E (white and grey flag)	2.O.1B + combination of 2.O.2B (vet on board) and 2.O.2D (white flag)
Animal Welfare	0	2	1.7	1.8
Environmental	0	0.6	0.3	0.3
Economic	0	-2	-0.6	-1.2
Social	0	-1.8	-0.6	-0.6
Total Score	0	-0.3	0.2	0.08

Consulted national competent authorities and business operators considered that banning live animal exports completely (2.O.1A + 2.O.2A) may deteriorate animal welfare through the replacement of EU exports by third country exports with lower welfare standards and transports across longer distances. According to the experience of one representative of the meat industry at EU level, the presence of an animal welfare officer on board of a livestock vessel allows to foresee, prevent and solve in a very efficient way potential issues that could affect the welfare of animals during long journeys. This stakeholder is also of the opinion that stricter conditions must ensure the welfare of animals in a proportionate manner, so that the continuity of business is also ensured[137]. Instead of a ban, the industry pled in favour of improved transport conditions. In the public consultation, NGOs, citizens, and academic experts broadly supported a total ban of live animal exports outside the EU.

6.1.3. Transport of unweaned calves

Each year, around 1.4 million unweaned calves (7% of the EU unweaned non-replacement dairy calves population) are moved across Member State borders, of which 42% on journeys with a duration of 8-19 hours or even more (578 000 animals/year)[138]. The main

[136] Animal welfare on sea vessels and criteria for approval of livestock authorisation (see note 136, page 28).
[137] Transport study, consultation activities (see note 25, page 4).
[138] Projections show that the dairy cow herd is expected to decrease by 10% by 2032, therefore the number of unweaned calves transported in the EU is expected to decrease at a similar rate (Agricultural outlook for markets, income and environment 2022-2032 (see note 77, page 11)).

Member States of origin for long journeys are France, Ireland and Germany[139] (304 000 animals/year). The main Member States of destination are Spain, the Netherlands, Italy and Belgium, accounting for over 93% of the animals[140]. A decrease in the number of calves of 10% by 2032 is expected[141].

Under option 3.O.1, provided that an effective system for feeding calves on trucks is available, calves may be transported for a maximum of 19 hours (NB: the time spent on board of vessels does not count under the condition that feeding is provided at regular intervals). If no such system is available on board, an 8-hour maximum journey time should be applied. Maximum journey times and minimum age (5 weeks) and weight (50kg), as recommended by EFSA, would greatly **improve the welfare** of a large number of unweaned calves, which belong to the group of vulnerable animals and are especially exposed to animal welfare and animal health risks during transport activities.

The option would have a negative economic impact on long-journey **transporters** (over 8 hours) which will need to invest in feeding systems on board. The cost for installing a feeding system in an existing truck is estimated to be between EUR 25 000 – EUR 30 000, while a new truck equipped with such a feeding system is estimated to cost around EUR 500 000[142]. The higher age and therefore bigger size of the calves will lead to a reduced transport capacity for the share of the current transport fleet that was transporting calves below 5 weeks[143]. Overall, the measure is expected to cost transporters around EUR 3 million per year.

The new requirements on minimum age and weight of the animals to be transported are estimated to increase the cost for dairy farmers due to the longer presence of calves on farms by approximately EUR 4.20 per calf and day.[144] However, this will also delay the arrival of calves at veal and beef producing farms, leading to reduced costs for those (as the fattening period will be shorter). Dairy farmers are expected to be able to transfer those costs to fattening farms by an increase in the price of calves[145]. Overall, the measure is expected to bring to dairy farms additional costs of EUR 2 million per year and to fattening farms savings of 2 million per year. An improved health status and reduced mortality of calves upon arrival due to increased resilience is also beneficial for fattening farms. It will increase yields and decrease the costs associated with the treatment of sick calves and the death of calves[146].

Estonia, Latvia and Lithuania will be the most affected by this option since a significant share of the journeys exceed 19 hours. Therefore, a transition period of 5 years is

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[139] However, Germany recently banned long journeys for the transport of calves in the absence of an approved feeding system.

[140] Transport study, section 5.4. (see note 25, page 4).

[141] Agricultural outlook for markets, income and environment 2022-2032 (see note 77, page 11).

[142] Based on stakeholder consultations.

[143] While the measure on space allowance applies to calves, the difference between the previous requirements and the new requirements for a calf of 50kg is a 5% increase in space allowance. The measure is therefore not expected to substantially affect transport capacity.

[144] Transport Study, section 5.4. (see note 25, page 4).

[145] Experience in Germany (where calves can only be transported from 4 weeks old since 2022) shows that dairy farmers were able to sell their calves at higher prices (based on stakeholder consultation).

[146] Dutch Ministry of Agriculture, Nature and Food Quality, *Scenariostudie Kalverketen - Scenario's voor een andere inrichting van de keten*, the Hague, 2021.

considered for the option related to journey times to leave time for these countries to restructure the sector. The longer period of fattening unweaned calves locally is expected to increase the environmental impact of the beef production sector in Ireland[147]. Most of the calves originating from Ireland are expected to be able to complete their current route, since part of the journey leg is on board of vessels, which is not included in the 19 hours limit provided that calves are fed at regular intervals. Since feeding systems exist today, it is expected that by the time the new measure would become applicable (5 years after the date of entry into force of the new legislation), such feeding systems will be approved and in use. A 2 years' transition period is foreseen for the requirements related to age and weight.

The option would have a neutral to positive **environmental impact**, since more limited journey times would reduce transport related Green House Gases (GHG) emissions. However, the current long journeys would to some extent be replaced by shorter journeys, and the reduced capacity of the trucks may partly offset the reduction as more trucks are needed for the same number of animals. A reduction in the death rate of calves and increased yields would also have a positive environmental impact.

The **social impacts** in terms of employment largely depend on the feeding solution. If no effective system for on-truck feeding is approved, more staff might be needed to unload, feed and reload the animals at the resting place. If the option results in a relocation of farms, with more local fattening of unweaned calves, this would also have a negative impact on farmers.

Dimension/Policy Option	Baseline Scenario	3.O.1
Animal Welfare	0	2
Environmental	0	0.5
Economic	0	-0.7
Social	0	-0.5
Total Score	0	0.33

In the consultations carried out, there was general agreement across all stakeholder groups that specific rules for unweaned and vulnerable animals should be provided. There was broad support for the measure regarding the weight and minimum age of animals, although some business stakeholders flagged the economic and logistical challenge (e.g. trucks with two decks instead of three have to be used). Regarding the measure on journey times, specific concerns were highlighted by authorities and private stakeholders from Ireland since Ireland is a major dairy producer, with a high surplus of dairy calves which cannot be fattened in Ireland due to space limitations and thus have to be transported to continental Europe. Given the current practices, both the requirement of an approved feeding system and a minimum age of 5 weeks would impact Ireland.

[147] European Commission, Directorate-General for Health and Food Safety, *Study on shifting from transport of unweaned male dairy calves over long distance to local rearing and fattening – Final report*, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2875/072915.

6.1.4. Transport in hot temperatures

The number of summer days with high temperatures (above 30°C) is increasing in the EU. Requiring that only short journeys take place over daytime (without restrictions on the transport by night) when outside temperatures are between 25°C and 30°C and that animal transport takes place at night when the weather forecast is above 30°C (option 4.O.1), would **improve the welfare** of the animals as it would allow them to avoid heat stress.

Several Member States, such as Germany and the Netherlands, have already restricted animal transports in hot temperatures in their national legislation. Many Member States are currently not approving long journeys when temperatures above 30°C are forecasted, further to activities from the Commission[148]. Hence, the **economic impacts** of this option could be expected to be mainly linked to the logistical challenge of transport by night but will provide uniformity for such cases in the EU. Transporters will see an increase in their costs due to higher wages for nighttime driving but also higher administrative costs when inspections and checks have to be performed during the night. The extent of this increase depends on the number of days above 30°C, which will depend on the geographical location[149]. The nighttime driving bonus is on average 20% in the EU[150], while the costs for competent authorities are on average 30%[151] higher outside of business hours. A limited impact is also expected on farmers (overcrowded stables) and slaughterhouses (those will have to either slaughter at night or provide a space to shelter the animals until slaughter resumes in the morning)[152]. Overall, the measure is expected to cost per year EUR 5 million for broiler transporters, EUR 3 million for pig transporters, EUR 2 million for beef transporters, and EUR 1 million for calf transporters.

No **environmental impact** is expected. With regards to **social impact,** no impact on employment is expected, but some types of personnel (drivers, slaughterhouse personnel, official veterinarians) may need to perform an increased number of nightshifts.

Dimension/Policy Option	Baseline Scenario	4.O.1
Animal Welfare	0	2
Environmental	0	0
Economic	0	-0.5
Social	0	-0.5
Total Score	0	0.25

[148] Already in 2018, in reaction to Commission activities, at least 13 Member States had taken action to limit transports, and another five Member States that did not export animals by road at all, during hot days (European Commission, Directorate-General for Health and Food Safety, *Welfare of animals exported by road – Overview report*, Publications Office, 2020, https://data.europa.eu/doi/10.2875/946999).

[149] Based on EEA data, in 2038 southern Europe is expected to have an average of 50 days per year over 30°C, central Europe 15 days, and northern Europe 3 days. The majority of transport occurs in northern and eastern Europe.

[150] Latvian Road Transport Directorate, *Guidance on level of remuneration for drivers in EU Member States*.

[151] For the Netherlands, costs for competent authorities outside normal business hours are 30% higher than costs within business hours (source Dutch competent authorities).

[152] Hoorweg, F. A., et al., *Metingen temperatuur tijdens diertransport, KD-2020-063*. Wageningen University and Research, 2021, https://library.wur.nl/WebQuery/wurpubs/fulltext/559400.

Member States and business stakeholders from southern Member States are generally more concerned by the measure as they will be impacted more. They often flag the logistical challenges linked to transporting live animals by night. Furthermore, these stakeholders argue that the trade of southern Member States will be seriously distorted by maximum temperature measures, as they are subject to higher temperatures throughout the year. Consequently, these Member States would be considerably affected[153]. However, a stakeholder from the meat industry indicated that in practice the measure would not pose major problems for Spanish producers, since they are already accustomed to transporting animals by night.

6.1.5. New technologies

Real-time positioning systems (option 5.O.1A) would make it possible to check in real time whether operators and drivers respect the maximum journey times and in particular the resting periods. As an alternative, mandatory retrospective checks of the tachographs could be required (option 5.O.1B), bringing a higher level of harmonization as regards this tool for monitoring which currently is being used differently by the Member States[154]. Combined with a central EU database (option 5.O.2), both options would improve animal welfare as official controls would be better targeted and more efficiently performed, however to a larger extent if real-time positioning systems are used (5.O.1A). A 5 years' transition period is foreseen (5.O.1A and 5.O.2).

The combination of options (5.O.1A and 5.O.2) would have **economic impacts**. Since more than 77% of the current transport trucks are already equipped with a satellite navigation system, the operators' costs for meeting the new standards could be expected to be relatively marginal. The administrative burden for operators is expected to decrease substantially with the use of an automated tracking system and IT platform. For instance, a 30% reduction of labour costs is expected, corresponding to an overall cost saving of around EUR 71 million per year for transporters[155]. The main costs would be associated with the development of the EU database, but since it will build on the existing TRACES system, also those costs for the EU administration could be limited. Member States' administrations would incur limited costs related to the training of staff on how to use a new system and the processing of generated data. The combination of options (5.O.1B and 5.O.2) would have limited economic impacts as trucks are already equipped with tachographs.

Replacing the current paper-based system with a digital trail would reduce the use of paper and archives and other storage facilities would be replaced by servers. This may have a positive **environmental impact** as GHG emissions associated with paper would be reduced. However, a negative impact is foreseen due to the increase in GHG emissions associated with the higher energy use. Although it cannot be estimated to what extent environmental benefits would occur from the lower paper and storage facility use and to

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[153] Transport study, consultation activities (see note 25, page 4).

[154] Welfare of animals exported by road – overview report, p. 12 (see note 149, page 32).

[155] *Modelling of policy options to support the Impact Assessment accompanying the revision of the EU legislation on the welfare of animals during transport,* 2023, doi: 10.2875/061480

what extent emissions would increase from the higher energy use, it can be expected that there will be a limited negative environmental impact.

While less administrative staff may be needed among business operators, the number of staff needed in public administration for processing the data collected might increase. Due to the expected increased demand of staff needed in administrations, a slight positive **social impact** could be expected in terms of employment. Furthermore, for operators, the simplification thanks to digitalization will mean improved working conditions.

Dimension/ Policy Option	Baseline Scenario	5.O.1A + 5.O.2	5.O.1B
Animal Welfare	0	2	0
Environmental	0	-1.0	0
Economic	0	0	0
Social	0	+1	0
Total Score	0	0.5	0

In the consultation activities, introducing a digital application at EU level to reduce administrative costs and facilitate data exchange between Member States was supported by competent authorities and business operators and proposed by the subgroup[156] on transport for the Animal Welfare Platform.

6.1.6. Transport of cats and dogs

Option 6.O.1A would considerably **improve the welfare** of cats and dogs, for which specific provisions are currently largely missing. A minimum age of 15 weeks for transport will allow for a better development of immunity against infectious diseases. In the case of puppies for instance, there is a period of low immunity between weeks 8 and 16 when they are susceptible to infection with infectious diseases, in addition to the impact of an early separation with their environment. A similar reasoning applies to kittens. Option 6.O.1B would also almost equally improve their welfare since it proposes similar requirements with the difference of imposing a minimum age of 12 weeks for transport.

Both options will have some limited **economic impacts**, especially for breeders since commercial transport of cats and dogs is mostly performed by them or under their direct responsibility. For instance, it is estimated that additional veterinary health checks of the cats and dogs may cost between EUR 10 and EUR 40 per animal. However, the economic impact of the new requirements for feeding and watering are expected to be limited, since relatively similar rules apply already. Additional costs for transporters may also be expected, related to the improvement or replacement of their current vehicles to meet the new standards. To note that most transport companies are SMEs. A commercially available new dog trailer without air conditioning but properly designed is estimated to cost between EUR 1 000 and EUR 3 000 for two to four dogs[157]. Due to the lower age limit, option 6.O.1A will have a slightly more negative impact as breeders will have to keep the puppies

[156] European Commission, Directorate-General for Health and Food Safety, EU Platform on Animal Welfare, Sub-Group Animal Transport – Working Group on Extreme Temperatures, *Proposal for an application on live animal transport*, 2019.
[157] Transport study, section 5.6.2. (see note 25, page 4).

and kittens for longer. Overall, under option 6.O.1B, it is estimated that, at EU level, transporters of puppies and kittens would face a reoccurring administrative cost of EUR 94.5 million and a single adjustment cost of EUR 7.5 million.

No significant **environmental impacts** are expected.

Considering **social impacts**, the additional vaccination requirements and the higher age at transport proposed in this measure may result in fewer sick animals at arrival. This would also have a positive impact on human health as it would reduce the need for antibiotics to treat these animals and, consequently, contribute to reducing AMR and the development and spread of zoonotic diseases. The option 6.O.1B would allow future owners to socialise with their pets from an earlier age, bringing additional social benefits compared to the option of 6.O.1A.

Dimension/ Policy Option	Baseline Scenario	6.O.1A (15 weeks)	6.O.1B (12 weeks)
Animal Welfare	0	2	1.9
Environmental	0	0	0
Economic	0	-0.3	-0.1
Social	0	1.0	1.2
Total Score	0	0.68	0.75

Providing transport requirements for cats and dogs was favoured by all stakeholder groups consulted.

6.2. Assessment of the packages of options

6.2.1. Costs and benefits of the packages

6.2.1.1. Costs

As explained in section 5.4., the assessment of these packages is mainly based on a supply chain analysis (for the costs of the measures per species, for the different sectors) and agricultural market modelling (for the impacts on quantities produced, consumed, imports, exports and prices) for the main livestock species only, namely pigs, laying hens, broilers, dairy cows, calves and beef cattle[158].

To calculate the costs of the different measures, changes considered in the different packages were reviewed, and information was collected to identify what kind of quantitative effect those measures were expected to have for the different stakeholders (farmers, transporters, slaughterhouses, consumers, public authorities). The impact of each measure was quantified for each species and operator when relevant: additional variable costs, possible savings in variable costs, changes in market revenues, possible investments needed to comply with the measures and possible reductions in the number of animals that can be kept, transported or processed. Finally, the economic impact of each measure was quantified in a consistent manner so they could be grouped into packages, by transforming the additional costs (or, if applicable, savings) into a figure that describe the net impact per

[158] Modelling of policy options to support the Impact Assessment accompanying the revision of the EU legislation on the welfare of animals during transport (see note 156, page 33).

kilogram of output (e.g. EUR/kg meat produced). The net impacts were normalised to the production cost of one kilogram of meat, milk or eggs (depending on the stakeholder, costs to farmer, transporter or slaughterhouse) and then converted into a percentage change in production costs per unit of output and calculated on the condition that an actor must implement a change (e.g. if baseline cost of producing 1kg of pork is EUR 1, and measure X leads to a production cost of EUR 1.50 per 1kg of pork, the increase per unit of output is 50%). Then, the proportion of the product that would be required to implement the change was identified (i.e. if a given measure is already implemented in some Member States, not 100% of the quantities will need to adapt due to the new EU rules). The exercise was repeated for each measure and each species. Finally, the cost change was multiplied by the proportion of the product that needs to implement the change, per measure and per species (e.g. the measure costs EUR 0.5 per kg produced, 100kg produced annually are concerned by the measure, therefore the total cost of the measure is EUR 50). Further details regarding the methodology and limitations thereof are presented below as well as in Annex 4, section 1.5.

The below figures, aggregating different sectors within each measure and aggregating figures for the packages of measures combined, should be interpreted with caution. Table 5 below provides an overview of the costs per sector and per measure. The order of magnitude of the figures per sector is a direct consequence of the quantities produced at EU level (billions of kg produced every year in each sector). Important limitations as regards to those figures should however be highlighted. Lack of data is the main limitation, with information on regional (within Member States) animal welfare practices and the costs attached to them being particularly difficult to obtain.

The costs presented are on a yearly basis (except when specified that they are one-off costs). It is assumed that the costs will occur during the transition period, set at 5 years from the date of entry into force, as it is the time needed for a realistic implementation of the measures and for planning the required investments. After that transition period, it is expected that transporters and other operators of the supply chain (e.g. many slaughterhouses possess their own transport fleet or entirely integrated production chain from breeding to slaughter, retailers may also absorb the costs) will have absorbed the costs.

<u>Assessment of costs for package 1:</u>

Table 3: Costs of package 1

Measure	**Costs**	**Total net cost at EU level per year from the date of the date of entry into force of the measures, for a period of 5 years (except when mentioned otherwise)**
Supply chain analysis		
1 Journey times + space allowance	Investments Increased number of journeys	EUR 3 149 million (adjustment cost)
3 Transport of unweaned calves	Investments	EUR 3 million
4 Hot temperatures	Nighttime bonus for drivers and official veterinarians	EUR 11 million
5 New technologies	Savings due to automation	-EUR 71 million

TOTAL COSTS		EUR 3 092 million
Other costs		
2 Exports		Loss of EUR 1 954 million
6 Transport of cats and dogs	Investments	EUR 94.5 million + One-off cost of 7.5 million

Expressing total costs in aggregated absolute figures at EU level for all sectors leads to gives high figures due to the high number of kg of meat, milk and eggs produced every year in the EU (the methodology used calculates a percentage of increase by kg), as the EU produces in total 198 billion kg of meat, milk and eggs per year. The total cost represents an increase of EUR 0.015 per kg of meat, milk or eggs.

As described in section 5.4., the packages also contain measures that were not covered by the supply chain analysis and economic modelling:

- Measure on exports – options 2.O.1A + 2.O.2A: ban on export of live ruminants: the loss of revenues from exports of live animals and the effect on the EU market of having more animals for sale in the EU (i.e. decrease in price of meat in the EU) is estimated at approximately EUR 1 954 million per year.
- Measure on the protection of cats and dogs - option 6.O.1A: requirement for the transport of cats and dogs: transporters of puppies and kittens would face a reoccurring administrative cost of EUR 94.5 million and a single adjustment cost of EUR 1.5 million.

The costs and benefits of those options could not be assessed with a uniform and comparable methodology, and therefore it is not possible to assess the cumulative impact of those options.

<u>Assessment of costs for package 2:</u>

Table 4: Costs of package 2

Measure	**Costs**	**Total net cost at EU level per year from the date of entry into force of the measures, for a period of 5 years (except when mentioned otherwise)**
Supply chain analysis		
1 Journey times + space allowance	Investments Increased number of journeys	EUR 2 941 million (adjustment cost)
3 Transport of unweaned calves	Investments	EUR 3 million
4 Hot temperatures	Nighttime bonus for drivers and official veterinarians	EUR 11 million
5 New technologies	Savings due to automation	-EUR 71 million
TOTAL COSTS		EUR 2 884 million
Other costs		
2 Exports		EUR 21 208 + one-off cost of EUR 380 million

6 Transport of cats and dogs	Investments	EUR 94.5 million + one-off cost of EUR 7.5 million

Expressing total costs in aggregated absolute figures at EU level for all sectors gives high figures due to the high number of kg of meat, milk and eggs produced every year in the EU (the methodology used calculates a % of increase by kg), as the EU produces in total 198 billion kg of meat, milk and eggs per year. The total cost represents an increase of EUR 0.014 per kg of meat, milk or eggs.

As described in section 5.4., the packages also contain measures that were not covered by the supply chain analysis and economic modelling:

- Measure on exports – options 2.O.2C + 2.O.2E: measures on exports of live animals by maritime transport (white or grey flag for vessels, animal welfare officer on board): for export via maritime transport of beef and sheep, the administrative burden would be EUR 195 000 for the one-off registration of vessels to a white or grey flag and EUR 21 208 annually for the training of a certified animal welfare officer to be included on each journey. Additionally, the adjustment cost of upgrading vessels to meet new requirements would cost EUR 380 million overall (one-off cost).
- Measure on the protection of cats and dogs - option 6.O.1B: requirements for the transport of cats and dogs, including a lower minimum age for transport (12 weeks).

The costs and benefits of those options could not be assessed with a uniform and comparable methodology, and therefore it is not possible to assess the cumulative impact of those options.

Table 5: Detailed costs per option and per sector, in EUR million per year (for 5 years).

Production sector	**Dairy**		**Beef**		**Pork**		**Broiler meat**		**Eggs**	
Policy option	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Space allowance during transport and journey times	281	281	1 194	1 069	695	642	944	914	35	35
Transport of unweaned calves			3	3						
Hot temperatures	1	1	2	2	3	3	5	5	/	/
New technologies	-3	-3	-9	-9	-23	-23	-34	-34	-2	-2
In total	**279**	**279**	**1 190**	**1 065**	**675**	**622**	**915**	**885**	**33**	**33**

6.2.1.2. Benefits

First, the two packages are expected to bring high animal welfare benefits, albeit to a slightly higher extent in package 1.

The packages will also provide additional direct and indirect societal and economic benefits.

In terms of financial benefits for operators, the welfare of the animals on and off farm has an impact on the yields and quality of the meat. Overcrowding, aggressivity between animals, improper handling and stress levels have a negative impact on productivity and carcass quality. During transport, improper handling, loading, unloading, overcrowding and water and feed scarcity, as well as increased susceptibility to infections affect meat and carcass quality negatively[159].

Improving conditions during transport reduces the occurrence of welfare hazards. After implementing the Transport Regulation in 2007, the share of transported animals with lameness, injuries, or dehydration decreased or remained similar, and the numbers of animals reported 'dead on arrival' decreased significantly[160].

Such issues have financial consequences for operators. Wounds in cattle and sheep are estimated to result in a loss of half the commercial value of the hide (EUR 33 for cattle and EUR 9 for sheep, 2015 prices). In case of lameness, production animals (such as piglets and calves) are assumed to be culled on arrival, resulting in labour and disposal costs[161].

In the case of calves, increasing the age at which calves are transported results in reduced mortality and morbidity as older animals are better fit for transport, more resilient and less susceptible to infections. More calves reach the slaughter lines, and the costs of destroying carcasses, estimated to EUR 27 per carcass[162], are avoided. The main cause of mortality of calves is pneumonia[163], and studies show a difference of 11kg carcass weight between calves treated for pneumonia and calves that did not require treatment. Veterinary costs are also reduced, with the average treatment costs for pneumonia ranging between EUR 10 and EUR 15[164]. A Dutch study[165] estimates that the impacts of halving the cases of pneumonia in calves in the Netherlands, due to higher age at transport, may result in additional revenues of tens of millions of euros per year due to increased growth, savings on carcass destructions equivalent to two tons a year and savings on medical treatment estimated to several million euros.

Transport of animals increases their risk of contracting infectious diseases due to cross contamination between animals or via contaminated surfaces. Animals experience

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[159] Ijaz, M. et al., 'Effect of on- and off-Farm Factors on Animal Stress and Meat Quality Characteristics', *Animal Husbandry*, InTechOpen, 2022, https://doi.org/10.5772/intechopen.104669.

[160] Baltussen, W. H. M., Gebrensbet, G. and Roest, K., *Study on the impact of regulation (EC) No 1/2005 on the protection of animals during transport*, 2011.

[161] Van Wagenberg et al., *Cost-benefit analysis of private certification schemes for animal welfare during long-distance transport in the EU*, Wageningen University and Research, 2015.

[162] Rendac, *Kadavertarieven 2020*, 2020.

[163] Pardon B. et al., 'Longitudinal study on morbidity and mortality in white veal calves in Belgium,' *BMC veterinary research*, Vol. 8, 26, BMC, 2012, https://doi.org/10.1186/1746-6148-8-26.

[164] Wang M. et al., 'Beef producer survey of the cost to prevent and treat bovine respiratory disease in preweaned calves,' *Journal of the American Veterinary Medical Association*, Vol. 253, 5, American Veterinary Medical Association, 2018, pp. 617-623, https://doi.org/10.2460/javma.253.5.617.

[165] Scenariostudie kalverketen (see note 147, page 30).

increased stress levels during transport, placing them at increased risk of infection[166]. This increase does not only impact animal health, it also has implications for zoonoses and AMR and therefore implications for human health.

The transmission of AMR between animals during transport forms indeed another threat to human health, on which EFSA published a Scientific Opinion only recently[167]. In this opinion, risk factors contributing to the probability of transmission of AMR during animal transport were identified, among which are contact with animals shedding antibiotic resistant bacteria and antibiotic resistance genes, the duration of transport (in combination with other risk factors), airborne transmission within the vehicle and adverse environmental conditions like high temperatures. EFSA added that shortening the duration of transport times could serve as a mitigating strategy with a likelihood of 95-99% to reduce the probability of ARB/ARGs transmission. Moreover, with a certainty of 90-95%, any measure improving animal health before or during transport is considered to reduce the transmission of ARB/ARGs. Reducing the number of animals per transport is also considered likely to reduce the probability of AMR transmission[168].

6.2.2. Impacts of the cost-increases (Agricultural Commodity Market Model)

The proposed EU legislation on animal welfare during transport is projected to increase or decrease the costs for transporting and, in some case, producing animals. The additional costs are presented in the sections above. A change in the production costs of meat or other products of animal origin may have an impact on the producer[169] and consumer prices, but also on the quantities produced and consumed, as well as the quantities imported and exported. There is therefore a direct relationship between the analysis of competitiveness impacts and the analysis of cost changes through the supply chain analysis. Those effects, resulting from a change in cost, can be assessed with the help of an agricultural economic model. The model used by the European Commission Joint Research Centre for this purpose is the Agricultural Commodity Market Model, and the main results are described below. Additional information can be found in Annex 4 and in the accompanying study[170].

The graphs 1 to 5 below present the impacts of the measures on exports (EX), imports (IM), quantity consumed domestically (QC), quantity produced domestically (QP), value of production, which is the multiplication of quantities and prices (VP), a well as producers' prices (PP) and consumers' prices (CP) in % versus the 2031 baseline. Additionally, it presents the impacts on producers and consumer prices in % versus the

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[166] European Parliament, Directorate-General for International Policies, Policy Department for Economic, Scientific and Quality of Life Policies, *The relation between different zoonotic pandemics and the livestock sector*, PE 695.456, 2021, p. 23.

[167] EFSA Panel on Biological Hazards (BIOHAZ), 'Transmission of antimicrobial resistance (AMR) during animal transport', *EFSA Journal*, Vol. 20, Issue 10 (e07586), 2022.

[168] Transmission of antimicrobial resistance (AMR) during animal transport (see note 168, page 40).

[169] The producer's price is the price received by the producer in exchange for a good.

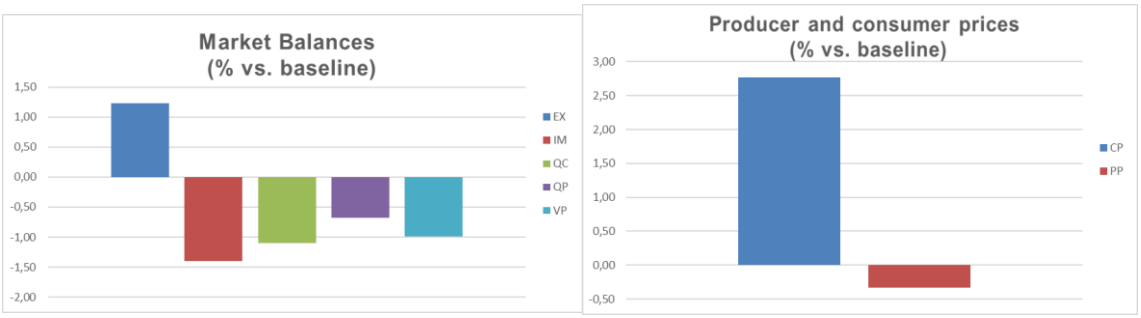
[170] Modelling of policy options to support the Impact Assessment accompanying the revision of the EU legislation on the welfare of animals during transport (see note 156, page 33).

2031 baseline. As shown by the graphs all impacts are very limited – which is to be expected as costs increase linked to animal transport are very limited (EUR 0.014 per kg). Additionally, transport costs are only a small fraction of the final production costs and even more so of consumer prices of meat, dairy and eggs.

Package I

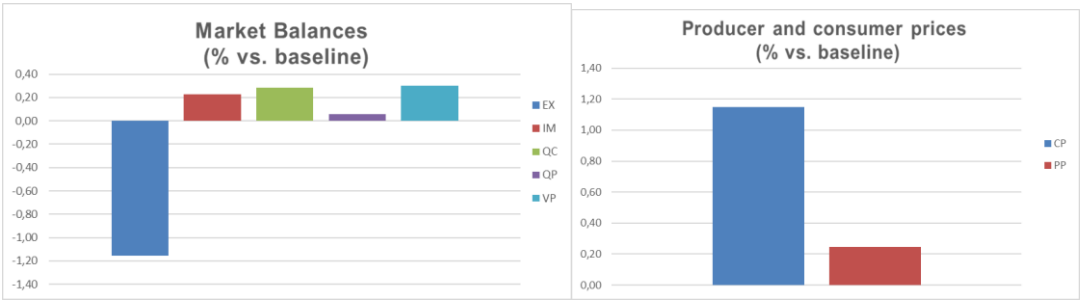
For poultry, this marginal cost increase is projected to minimally affect the producer's margin, because it would slightly decrease demand due to a marginally higher consumer price and reduce producer prices (the price received by producers). For the beef and veal market the effects are similar.

Graph 1: Poultry meat



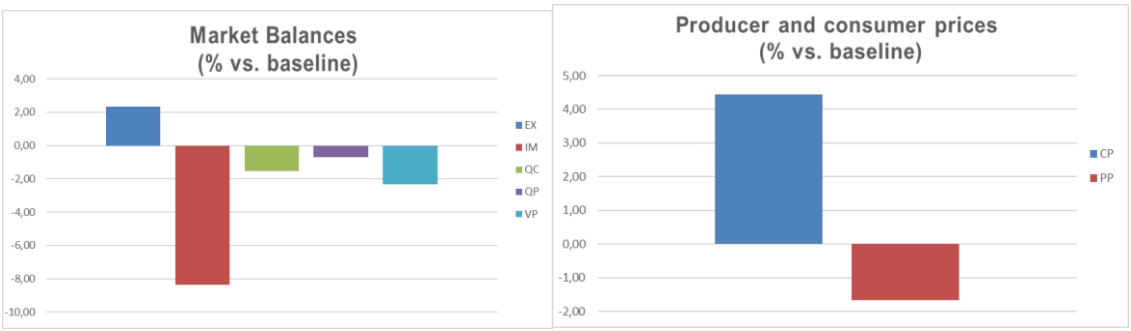
Quantities exported: +1.23% ; quantities imported: -1.40% ; quantities consumed: -1.10%; quantities produced : -0.68% ; value of production : -0.99% ; consumer price: +2.77% ; producer price: -0.33%

Graph 2: Pig meat



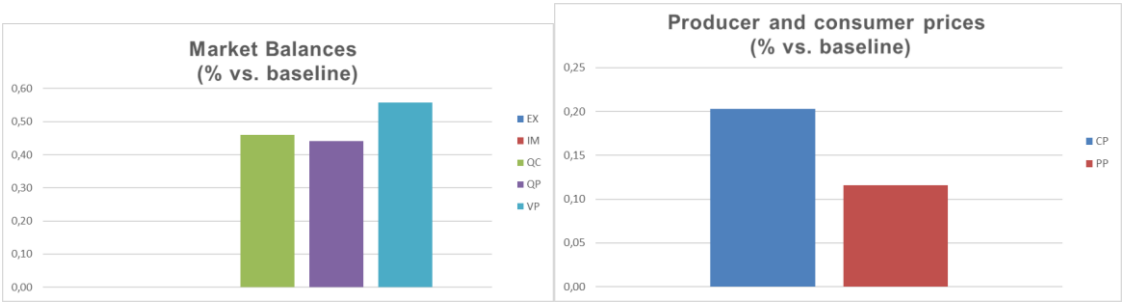
Quantities exported: -1.16% ; quantities imported: +0.23% ; quantities consumed: +0.29% ; quantities produced : +0.06% ; value of production : +0.30% ; consumer price: +1.15% ; producer price: +0.25%.

Graph 3: Beef and veal



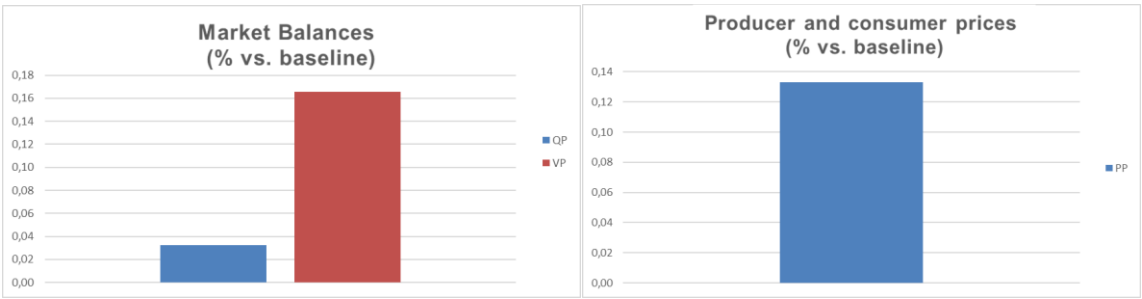
Quantities exported: +2.33% ; quantities imported: -8.35% ; quantities consumed: -1.54% ; quantities produced : -0.68% ; value of production : -2.34% ; consumer price: +4.45% ; producer price: -1.67%

Graph 4: Eggs



Quantities consumed: +0.46% ; quantities produced : +0.44% ; value of production : +0.56% ; consumer price: +0.20% ; producer price: +0.12%

Graph 5: Milk[171]



Quantities produced: +0.03% ; value of production : +0.17% ; producer price: +0.13%

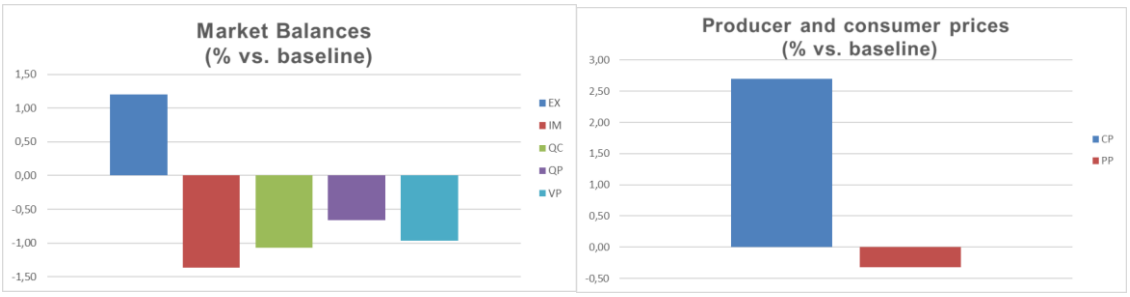
<u>Package II</u>

For poultry, this marginal cost increase is projected to minimally affect the producer's margin, because it would slightly decrease demand due to a marginally higher consumer

[171] The commodity "milk" in the ACMM corresponds to raw milk which is neither traded nor consumed. Hence, only the impacts on domestic production of milk are displayed.

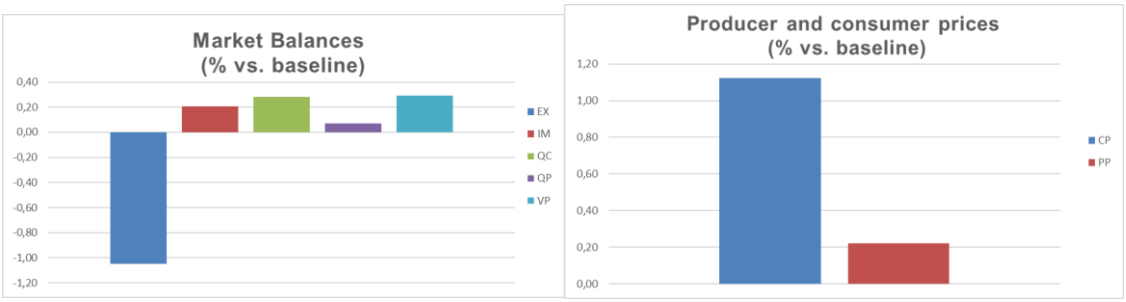
price and reduce producer prices (the price received by producers). For the beef and veal market the effects are similar.

Graph 6: Poultry meat



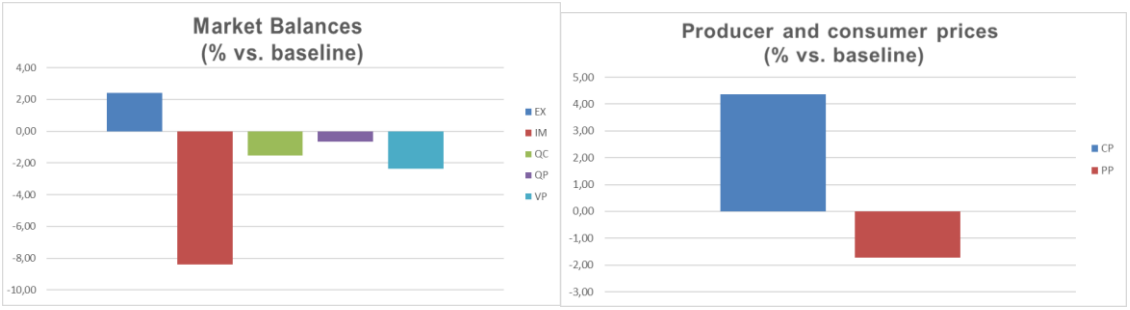
Quantities exported: +1.20% ; quantities imported: -1.36% ; quantities consumed: -1.07%; quantities produced : -0.66% ; value of production : -0.96% ; consumer price: +2.70% ; producer price: -0.33%

Graph 7: Pig meat



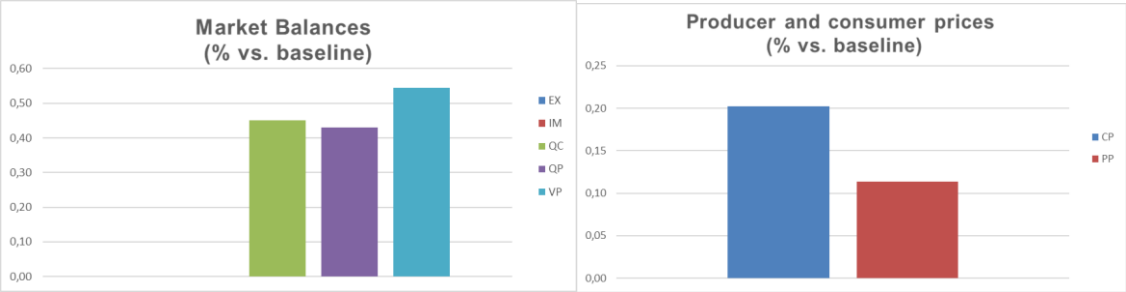
Quantities exported: -1.05% ; quantities imported: +0.20% ; quantities consumed: +0.28% ; quantities produced : +0.07% ; value of production : +0.29% ; consumer price: +1.12% ; producer price: +0.22%.

Graph 8: Beef and veal



Quantities exported: +2.41% ; quantities imported: -8.38% ; quantities consumed: -1.51% ; quantities produced : -0.64% ; value of production : -2.36% ; consumer price: +4.37% ; producer price: -1.73%

Graph 9: Eggs



Quantities consumed: +0.45% ; quantities produced : +0.43% ; value of production : +0.54% ; consumer price: +0.20% ; producer price: +0.11%

Graph 10: Milk[172]

Quantities produced: +0.03% ; value of production : +0.17% ; producer price: +0.13%

6.2.3. Impacts on international competitiveness

Depending on the animal species considered and the EU's net trade position, the impacts on the competitiveness of the EU animal products' export market will change, but is globally very limited and similar for both packages. A more detailed analysis by animal species follows here.

Poultry meat is a heavily traded commodity in both directions (imports and exports), but the EU produces more than it consumes in the internal market (i.e. there is a surplus of approximately 1.2 Mt in 2022). Given an increase in poultry consumer price (+EUR 180, or +2.8% for package I; and +EUR 175, or +2.7%, for package II), the animal transportation reform would imply a slightly lower level of domestic production (-92 kiloton (kt) or -0.68% for package I; and -90 kt, or -0.66%, for package II). The drop in domestic production and consumption (-134 kt or -1.1% for package I; and -130.5 kt or -1.07%, for package II) would imply a slight increase in exports (+29 kt or +1.23% for package I; and +28 kt or +1.20% for package II), given also that intra-EU producer price (EUR 2029) would drop compared to the baseline (EUR 2036, -0.3%) but would still be

[172] The commodity "milk" in the ACMM corresponds to raw milk which is neither traded nor consumed. Hence, only the impacts on domestic production of milk are displayed.

higher than the world market price (expressed in Euro, at EUR 1020 in the baseline in 2031). The drop in consumption, coupled with a lower drop in production, increases exports.

In the case of **pigmeat**, the EU is mainly an exporter country (4 Mt exported in 2022) with low pork imports (126kt) and a production of 22.5 Mt. Given an increase in EU consumer price (+ EUR 108 or +1.15% for package I; and + EUR 106, or +1.12% for package II in 2031) and in producer price (+ EUR 3.6 or +0.25% for package I; and + EUR 3.2 or +0.22% for package II in 2031), there is a slightly higher production (+12 kt, or +0.06% for package I; and +15 kt, or +0.07% for package II in 2031) but also consumption (+51 kt, or +0.29% for package I; and +50 kt, or +0.28% for package II in 2031) due to cross-price elasticity effects[173]. This implies slightly lower exports (-39 kt, or -1.16% for package I, and -35 kt, or -1.05% for package II) given the export price increases less than the domestic price (+ EUR 2.7, or +0.16% in package I; and + EUR 2.4, or +0.15% in package II). The lower increase in EU pork export price compared to the increase in domestic producer prices implies a lower demand toward export markets.

In the case of **beef and veal**, the EU baseline exports in 2022 (744 kt) are around 10.5% of what is produced (7 Mt) and imports approximately 5% (355 kt) of production. In the scenario, given an increase in EU consumer price (+ EUR 624, or +4.45% in package I; and + EUR 612, or +4.37% in package II in 2031), there is a drop in quantity demanded (consumption drops by -94 kt or -1.54% in package I and -92 kt, or -1.51% for package II in 2031), production (-44 kt or -0.7% for package I, and -42kt, or -0.64% for package II in 2031) and producer price (+ EUR 68, or -1.67% in package I, and – EUR 70, or -1.73% for package II in 2031). Exporters sell at a price that is only marginally decreasing (- EUR 9.60 or - 0.244% for package I and - EUR 9.75, or -0.247% in package II). Given the lower drop in exporter price, these changes imply a slight increase in exports (+18.6 kt or +2.33% in package I or +19.2 kt, or +2.4% in package II).

6.2.4. Impacts on food security

The current geopolitical context as well as the climate crisis have put food security as a high priority on the political agenda, both at EU and global level.

Regarding the availability dimension of the food security impact, the Agricultural Commodity Market Model points to modest impacts for both packages. EU production of poultry for example, for package I, is expected to contract by around 92 thousand tonnes (kt) in 2031, as compared to the Agricultural Outlook baseline. Poultry exports go up by around 29 kt, and imports down by 13 kt so the impact on EU consumption is around 134 kt. For package 2, it contracts by around 90 thousand tonnes (kt), with exports going up by

[173] When the price of a product increases, consumers may shift to another corresponding product. In this case, the increase in the price of other products lead consumers to switch to pork, increasing consumption.

around 28 kt, and imports down by 12 kt, so the impact on EU consumption is around 130.5 kt.

With a projected EU population of 445 million in 2031, the marginal reduction in production translates into 293g less poultry consumption per capita per year or 0.8g per capita per day for package 2, and 301g less poultry consumption per capita per year or 0.8g per capita per day for package 1. Total EU protein, fat and carbohydrate consumption in 2031 will change by negligible amounts, compared to the baseline.

In addition, the impact of the packages on food security can be assessed looking at the Self-Sufficiency ratio (SSR), as defined in the OECD-FAO outlook in terms of production divided by production availability (production + imports - exports). In aggregate, based on the results of the Agricultural Commodity Market Model, it can be further established that the animal welfare measures considered have negligible impacts on the SSR in terms of energy derived from food for both packages +0.02%).

6.2.5. Food affordability

Transport costs represent a small share of the total costs of animal products production and an even smaller share of the final retail price of meat (e.g. less than 1% of the total price[174]) or other products of animal origin[175]. As a result, even the most significant measure (in terms of cost) in the package of preferred options (increase in space allowance), is expected to have a minor impact. The Agricultural Commodity Market Model predicts a minimal impact on producer price and a limited increase for the consumer (between 0.06% and 4.45% for package 1 and 0.06% and 4.37% for package 2). Considering variations in market structure and the minimal marginal impact these options will have on the overall cost of production, it is difficult to robustly conclude whether transporters are likely to absorb these costs themselves or pass them upstream (farmers) or downstream (other farmers, slaughterhouses, retailers). However, even if those costs are entirely passed on to the consumer, the food affordability analysis concludes with very marginal impacts on food prices for package 2: between 0.06% and 4.37%.

Table 6: Consumer price increase by 2030[176] (in %)

Product	Retail price increase by 2030 (%)	
	Package 1	**Package 2**
Beef and Veal	4.45	4.37
Sheep and Goat[177]	0.18	0.17
Pig	1.15	1.12
Poultry	2.77	2.70
Eggs	0.20	0.20

[174] Van Horne, P.L.M. and Bondt, N., *Competitiveness of the EU poultry meat sector*, Wageningen University and Research, 2018, p. 6.

[175] One study informs that the transport costs of transporting live lambs from Hungary to Italy represents 11% of the value of the animals, while transporting spent hens (very low value animals) from the Netherlands to Poland represent 16% of the value of those animals (to be noted that the value of animals is less than the value of retail meat).

[176] The food affordability analysis is set as 2030, as GDP growth projections above 2030 are not reliable.

[177] Impact from endogenous response in the model to shocks to other products.

Fresh Dairy products	0.17	0.17
Cheese	0.06	0.06
Butter	0.08	0.08

In terms of affordability calculated as the additional expenditure to keep the same diet, these small changes mean that the additional expenditure needed is negligible. The specific details can be found in Annex 4 section 2.6. (food affordability), and the additional expenditure ranges from EUR 2.87 to EUR 14.38 per person and year for package 1 and 2.81 to EUR 14.09 per person and year for package 2, depending on diet and income. The additional expenditures amount to between 0.035% and 0.096% of total income for package 1 and 0.034% and 0.094% of total income for package 2.

6.2.6. Distributional effects

Distributional effects among stakeholders

Stakeholders involved in moving animals, i.e. transporters and public authorities who carry out official controls, would be directly affected by the measures. Other stakeholders in the value chain such as farmers, breeders, exporters, slaughterhouses, retailers, or consumers may experience indirect impacts. For instance, the options limiting animal transport to nighttime in periods of high temperature are expected to have limited additional impacts on farmers, control posts and slaughterhouses[178]. Either slaughterhouses will have to switch to slaughtering during the night, which is likely to result in higher labour costs, or they will have to increase the capacity of waiting areas since the whole day production will arrive during nighttime. This effect is highly dependent on the temperatures and therefore on regional area.

Concerning the measure related to fitness for transport (e.g. minimum age of animals to be transported), farmers and breeders will be directly impacted as they bear the responsibility to ensure operators respect rules on the fitness for transport at loading (and in some cases will need to keep their animals longer in their farm or establishment).

Producers relying on export of live animals will also be impacted by the enhanced conditions for such exports as their margins may be reduced if they are unable to reflect the increased cost in their selling price. However, as there is a trend from certain global exporters to ban exports of live animals for animal welfare reasons (e.g. Australia, New Zealand, ongoing discussions in Brazil), this may have an opposite effect by increasing market opportunities for EU operators.

In case of an EU ban on export of live animals, EU producers relying on exports will be impacted as they will need to either sell their animals on the EU market or export meat instead of animals.

[178] Transport study, section 5.2.2.3. (see note 25, page 4).

It is unclear if transporters can transfer increased transport costs to either farmers or slaughterhouses or whether they need to absorb (part of) these costs themselves[179].

Geographical distributional effects

Certain Member States would be naturally more affected due to their geographical situation (e.g. by being an island, like Ireland). Member States from the southern Europe will be more affected by the measure on temperature.

The impacts of limiting significantly journey times (e.g. to maximum 12h) will be greatest in those Member States that send large numbers of animals to other Member States, i.e. Denmark and the Netherlands (for pigs), Hungary and Romania (for sheep and goats) and Ireland (for unweaned calves) and also for those that rely on receiving animals from other Member States for their own production (e.g. Spain, the Netherlands and Italy for unweaned calves). As regards breeding animals, since they are mostly dairy animals the major dairy producing Member States will be affected most, i.e. Germany, France, Poland, the Netherlands, Italy and Ireland. In 2020, the main Member States of origin of bovines exported were Portugal with 101 552 bovines, Romania with 97 833 bovines, Spain with 82 217 bovines and Croatia with 80 035 bovines[180].

Furthermore, livestock production is not evenly spread across EU countries and regions (for instance, the production in Greece represents 26% of the livestock in goats), and the sector is increasingly specialised, which further incentivises the transport of animals[181] (e.g. cattle born in France or Lithuania are often fattened and slaughtered in Spain or Italy).

7. HOW DO THE OPTIONS COMPARE?

This section contains a comparison, in terms of effectiveness, efficiency, coherence and proportionality of all policy *options*[182] (sections 7.1. to 7.6.) using a --- to +++ scale[183]. This assessment builds on the preceding impact analysis in section 6 and Annex 9, including the multi-criteria analysis and a qualitative cost-benefit analysis[184]. This section also compares the two packages of options (section 7.7) using the same scale, based on the preceding analysis of impacts in section 6, in particular the cost-benefit analysis of section 6.2.1. The comparison is done against the non-EU-action, i.e. the dynamic baseline which is set at zero.

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[179] Transport study, section 5.2.2.1. (see note 25, page 4). Transporters have indicated that, due to fierce competition amongst transporters, such transfer is only possible to a limited extent.

[180] Comext; Transport Study, section 5.3.2.3. (see note 25, page 4). Indirect economic impacts on economic operators.

[181] Transport study, section 3.3.4. (see note 25, page 4).

[182] When required, under some measures, options are combined.

[183] The scores are given on the expected magnitude of impact: + + + being strongly positive, + + positive, + moderately positive, 0 neutral, – moderately negative, – – negative and – – strongly negative.

[184] The total benefits and total costs for each option (or combination of options when relevant) have been qualitatively assessed in the overview tables below under the criteria *efficiency.*

7.1. Journey times and space allowances for animal transports

Limiting the journey times would improve the welfare of animals during transport under all combinations considered (1.O.1A + 1.O.2A; 1.O.1A + 1.O.2B; 1.O.1B + 1.O.2B) which therefore all score positively in terms of *effectiveness*. The combination of options 1.O.1A + 1.O.2A scores the highest given that it would improve the welfare of the largest number of animals transported. Combinations 1.O.1A + 1.O.2B and 1.O.1B + 1.O.2B score lower given that they would improve the welfare of animals transported other than for slaughter to a more limited extent. The difference between these two combinations is limited given that only a small number of animals are transported for slaughter during journeys of more than 9 hours to date.

While the existing number of long journeys for slaughter together with the network of near available slaughterhouses makes it *proportionate* and *efficient* in terms of costs to opt for option 1.O.1A, for other type of journeys a maximum journey time of 21 hours + 24 hours' rest + 21 hours' journey with 1 hour for rest and feed after 10 hours of journey, and permanent access to water (as suggested in option 1.O.2B) would be more *efficient* and *proportionate* than option 1.O.1B. All options would be *coherent* with other measures, EU policies and pieces of EU legislation. However, a 9-hour maximum journey time (1.O.1A) would be easier to reconcile with the social legislation on drivers' resting time, and therefore the related combinations score better.

Aligning space allowances with EFSA recommendations (1.O.3) will bring very high animal welfare benefits and is therefore very *effective* to achieve specific objective 2. Given the very high benefits, it remains *efficient*, although the measure is associated with significant costs. The measure is overall *coherent* with other measures and EU policies, and therefore scores positively, however it is not given the highest scores given its impact on emissions. Nevertheless, combined with journey times, the impact on emissions is minor, and therefore the option is coherent with environmental policies. The measure is overall *proportionate*, and therefore scores positive, however it is not given the highest scores due to the costs of increasing the number of journeys for certain sectors (bovines and poultry).

Table 7: Comparison of policy options for journey times and space allowance:

Criteria	**Baseline scenario**	**Policy options 1.O.1A + 1.O.2A + 1.O.3**	**Policy options 1.O.1A + 1.O.2B + 1.O.3**	**Policy options 1.O.1B + 1.O.2B + 1.O.3**
Effectiveness: contributing to achieving the policy objectives				
SO1. Reduce animal welfare problems linked to long journeys and resting periods	0	+++	++	+
SO2. Ensure animals have more space when transported	0	+++	+++	+++
Efficiency: comparison of benefits and cost	0	0	+	0
Total Benefits	0	+++	++	+
Total Costs	0	---	-	-
Coherence	0	+++	+++	++
Proportionality	0	++	+++	++

7.2. Export of live ruminants

While a total ban on the export of live and small ruminants (combination of options 2.O.1A for road transport and 2.O.2A for maritime transport) would be seemingly *effective* to improve the welfare of EU animals, this combination would be less *effective* than the combinations of alternative options 2.O.1B (limit journey time for road transport), 2.O.2C (animal welfare officer on board) with 2.O.2E (white and grey flag of vessels) and than 2.O.1B, 2.O.2B (veterinarian) with 2.O.2D (white flag of vessels), as it would increase the likelihood that third countries import live animals from other third countries with lower animal welfare standards.

The ban of export of ruminants (combination of options 2.O.1A and 2.O.2A) is not expected to be *efficient* as it would have a great negative economic impact on the EU production chain, compared to the limited benefits to the environment and to the welfare of the animals if transported from other third countries. Similarly, the combination of options 2.O.1B + 2.O.2B + 2.O.2D would be challenging and costly to implement. Hence, such a combination would not be efficient. The most *efficient* alternative would be to limit the export by road by imposing limited journey time and to upgrade the conditions of road (option 2.O.1B) and maritime transports (options 2.O.2C and 2.O.2E) as it lowers the economic costs for operators while ensuring higher benefits in particular in terms of animal welfare and unchanged environmental and social benefits under both combinations considered.

All combinations would be equally *coherent* with other measures, EU policies and pieces of EU legislation. Both the ban on export and the requirements to have a veterinarian onboard and to be white flag compliant are expected to be *disproportionate* given the impact on EU operators and therefore scores negatively, while the combination of options to have an animal welfare officer and to be white or grey flags compliant is considered proportionate and scores positively.

Table 8: Comparison of policy options for live animal exports:

Criteria	**Baseline scenario**	**Policy option 2.O.1A + 2.O.2A**	**Policy option 2.O.1B + 2.O.2C (welfare officer) + 2.O.2E (white or grey flag)**	**Policy option 2.O.1B + 2.O.2B (veterinarian) + 2.O.2D (white flag)**
Effectiveness: contributing to achieving the policy objectives				
SO1. Reduce animal welfare problems linked to long journeys and resting periods	0	++	+++	+++
SO6. Better protect animals exported to non-EU countries	0	++	+++	+++
Efficiency: comparison of benefits and cost	0	-	++	0
Total Benefits	0	+	+++	+++
Total Costs	0	---	-	---

Coherence	0	+++	+++	+++
Proportionality	0	--	+++	-

7.3. Transport of unweaned calves

Option 3.O.1 is very *effective* as it provides an effective response to the welfare problems related to the transport of unweaned calves including during long journeys. The option therefore scores equally for both specific objectives considered. Although this option is expected to have some negative economic impact, in particular for transporters and dairy farmers, it is expected to bring important animal welfare benefits and some environmental benefits. Therefore, this option is considered *efficient* and scores positively. The option would be *coherent* with other measures, as well as with other EU policies and pieces of legislations. This option is considered *proportionate* as it allows to transport calves for a maximum of 19 hours provided that a feeding system is available, therefore allowing most of the current journeys to continue.

Table 9: Assessment of the policy option for the transport of unweaned calves:

Criteria	**Baseline scenario**	**Policy option 3.O.1**
Effectiveness: contributing to achieving the policy objectives		
SO1. Reduce animal welfare problems linked to long journeys and resting periods	0	+++
SO3. Improve the conditions of transport of vulnerable animals	0	+++
Efficiency: comparison of benefits and cost	**0**	**+**
Total Benefits	0	+++
Total Costs	0	--
Coherence	**0**	**+++**
Proportionality	0	+++

7.4. Hot temperatures

Option 4.O.1 is very *effective* to improve the conditions of animals during transport as it would allow them to avoid heat stress. As this option still allows the transport of animals by night when temperatures are above threshold, which is expected to remain occasional depending on the geographical area, it is expected to have limited negative economic impact on farmers and slaughterhouses. Compared to the important animal welfare benefits, it is therefore considered *efficient* and scores positively. The option would be *coherent* with other measures, as well as with other EU policies and pieces of legislation. The option is also *proportionate* considering the limited economic impacts on operators.

Table 10: Assessment of the policy option for the transport in hot temperatures:

Criteria	**Baseline scenario**	**Policy option 4.O.1**
Effectiveness: contributing to achieving the policy objectives		
SO4. Avoid exposing animals to hot temperatures	0	+++
Efficiency: comparison of benefits and cost	**0**	**++**
Total Benefits	0	+++
Total Costs	0	-

Coherence	**0**	**+++**
Proportionality	0	+++

7.5. New technologies

The combination of options 5.O.1A and 5.O.2 is the most *effective* as it provides for real-time access to data, while use of new technology that would only allow to perform retrospective checks (Option 5.O.1B + 5.O.2) would facilitate enforcement to a lesser extent. In particular, real-time access to data will allow to more effectively achieve the specific objective of reducing animal welfare problems linked to long journeys. Indeed, experience with enforcement shows that retrospective checks are insufficient to achieve proper enforcement of these rules. All options would be equally *coherent* with other measures, as well as with other EU policies and pieces of legislation, and are considered equally *proportionate* given the limited costs for operators and public administrations which is why they score positively for both criteria.

Table 11: Comparison of policy options for the use of new technologies:

Criteria	Baseline scenario	Policy option 5.O.1A	Policy option 5.O.1B
Effectiveness: contributing to achieving the policy objectives			
SO5. Facilitate enforcement of EU rules on the protection of animals, including through digitalisation	0	+++	++
SO1. Reduce animal welfare problems linked to long journeys	0	+++	++
Efficiency: comparison of benefits and cost	**0**	**+**	**+**
Total Benefits	0	+++	++
Total Costs	0	--	-
Coherence	**0**	**+++**	**+++**
Proportionality	0	+++	+++

7.6. Transport of cats & dogs

Option 6.O.1A is slightly more *effective* than option 6.O.1B to protect cats and dogs when transported for commercial purposes. This is due to the fact that option 6.O.1A protects more cats and dogs due to the higher minimum age required to be allowed to be transported than option 6.O.1B. Option 6.O.1B is more *efficient* given the slightly lower economic impact it has on breeders while still setting an age limit appropriate to allow the development of cats and dogs' immunity and providing higher social benefits. Option 6.O.1A would be slightly more *coherent* than option 6.O.1B with the animal health policy objectives. Both options would be equally *proportionate* as no operators are facing disproportionate costs.

Table 12: Comparison of policy options for the transport of cats and dogs:

Criteria	Baseline scenario	Policy option 6.O.1A	Policy option 6.O.1B

Effectiveness: contributing to achieving the policy objectives			
SO7. Better protect cats and dogs when transported for commercial purposes	0	+++	+++
Efficiency: comparison of benefits and cost	**0**	**+**	**++**
Total Benefits	0	+++	+++
Total Costs	0	--	-
Coherence	**0**	**+++**	**++**
Proportionality	0	+++	+++

7.7. Overall comparison of policy packages

Table 13: Comparison of policy packages:

Criteria	**Baseline scenario**	**Package 1**	**Package 2**
Effectiveness: contributing to achieving the policy objectives			
SO1. Reduce animal welfare problems linked to long journeys and resting periods	0	+++	++
SO2. Ensure animals have more space when transported	0	+++	+++
SO3. Improve the conditions of transport of vulnerable animals	0	+++	+++
SO4. Avoid exposing animals to high temperatures	0	+++	+++
SO5. Facilitate enforcement of EU rules on the protection of animals, including through digitalisation	0	+++	+++
SO6. Better protect animals exported to non-EU countries	0	++	+++
SO7. Better protect cats and dogs transported for commercial purposes	0	+++	+++
Efficiency: comparison of benefits and cost	**0**	**++**	**+++**
Total Benefits	0	+++	+++
Total Costs	0	---	--
Coherence	**0**	**++**	**+++**
Proportionality	0	+	+++

Regarding the *effectiveness* of the packages, the scores allocated to SO2 to SO7 for the two packages are explained in the scores allocated to the respective options in section 7.1. to 7.6. When it comes to the effectiveness of the two packages to reduce welfare problems linked to long journeys and resting periods (SO1), as is addressed by several measures, package 1 scores better than package 2 due to the different combination of options on journey times which improves the welfare of a higher number of animals transported.

Package 2 is more *efficient* and more *proportionate* than package 1. This is especially the case considering the high economic costs that package 1 would entail. This is mainly due to the impact of the ban on exports of animals. As established in section 6.1.2., an export ban would increase the supply of beef by 2.3% and the supply of mutton by 7.5%, which would affect market prices with losses amounting to EUR 1.9 billion per year. In addition, the high percentage of long journeys (49% of bovines for 47% of sheep) for the export of breeding animals that could no longer take place with a maximum 12 hours' rule, would

negatively impact the whole farming sector. Package 1 is also more costly for operators given the stricter restrictions in journey times, amounting to EUR 3.15 billion per year for this measure, without bringing considerably more benefits overall.

According to the estimates by the Spanish beef cattle industry (using a different methodology than in this report), the measures included in package 1 could result in the disappearance of 6 190 livestock production establishments in Spain and an increase in production costs of EUR 220.8 million, representing 3% of the production value[185].

The overall *coherence* of the two packages is high and similar. The only slight differences are the coherence with the options on cats and dogs with the animal health policy objectives, and the options on journey times where package 2 is better articulated with the social rules on drivers' resting times.

8. PREFERRED OPTION

8.1. Preferred package of options

The choice of the preferred package of options (package 2) is based on the analysis in terms of effectiveness, efficiency, coherence and proportionality, taking into account the outcome of the multi-criteria decision analysis (MCDA) and of the qualitative cost-benefit analysis.

Description of the preferred policy options:

MEASURE 1 (Options 1.O.1A, 1.O.2B, 1.O.3): 9 hours' maximum journey time for animals transported for slaughter. For animals transported for other reasons, a maximum journey time of 21 hours + 24 hours' rest + 21 hours' journey, with 1 hour for rest and feeding each 10 hours, and permanent access to water; space allowance according to EFSA recommendations. *Transition period: 5 years*.

MEASURE 2 (Options 2.O.1B, 2.O.2C + 2.O.2E): transport by road: a limit of 9 hours' journey time for animals exported for slaughter, and of 21 hours + 24 hours' rest + 21 hours' journey for animals transported for other reasons, with 1 hour for rest and feeding each 10 hours, and permanent access to water; maritime transport: upgrade the conditions of maritime transports, including requiring the presence of an animal welfare officer on board and to be listed under white or grey flag. *Transition period: 5 years*.

MEASURE 3 (Option 3.O.1): maximum journey time of 19 hours for unweaned calves (excluding the leg of the journey on vessels) provided that an efficient feeding system exists (in the absence of such a system, an 8 hour journey time would apply) (*5 years transition period*). Minimum age of 5 weeks and minimum weight 50kg (*2 years transition period*).

MEASURE 4 (Option 4.O.1): length and timing of journeys subject to weather forecasts. If weather forecast is between 25°C and 30°C, only short journeys (maximum 8 hours)

[185] PROVACUNO, *Welfare of cattle during transport: pre-revision assessment July 2023*, 2023, p. 9.

should be allowed, with access to water for the animals. If the weather forecast is higher than 30°C only transport at night (i.e. between 21h00 and 10h00) allowed.

MEASURE 5 (Options 5.O.1A, 5.O.2): real-time positioning; central database and digital application. *Transition period: 5 years.*

MEASURE 6 (Option 6.O.1B): requirements for the transport of cats and dogs for economic purposes, e.g. age limits (12 weeks) and temperature conditions. *Transition period: 3 years.*

Justification of the preferred combination:

The options presented above are considered to constitute **the best combination of options** for the following reasons:

While limitations in journey times alone would improve the welfare of animals during transport, it would not address the problems related to transport conditions, including the risk for heat stress, the animals' fitness to travel, animal welfare problems linked to poor enforcement (particularly at export) and the problem of cramped environments during the journey. Hence, the provisions on journey times must be supplemented with policy options covering these aspects as well, combined with a greater use of modern technology for monitoring purposes to better ensure compliance.

In addition, the preferred package of options strikes a balance between different stakeholder views. Indeed, even if there are some internal divisions within groups of stakeholders, the general tendency in the spectrum of stakeholders' views goes from certain transport operators and producers, in particular in those Member States most involved in exports of bovines with very long journeys, advocating for smaller changes than the preferred option, and animal welfare NGOs, advocating for more radical changes. Furthermore, a vast majority (36 out of 42, or 85%) of the transport organisers, transporters, traders and assembly centres that responded to the public consultation were against a ban on the export of live animals for breeding, as suggested in Package 1.

Implications of the preferred combination of options:

The combination of preferred options will generate significant welfare benefits for the more than 1.4 billion animals that are transported each year with a cross-border movement within the EU Member States as well as for the millions of animals transported annually within Member States over long distances. Clearer provisions and a greater use of modern technology will make the revised legislation easier to comply with and to enforce. In addition, the set of preferred options responds to European citizens' expectations of high EU standards on animal welfare during transport.

For business operators, investments and adaptations of business practices will be needed in different areas. Transport companies will have to adapt to new transport patterns, invest in new trucks to provide more space for animals, and in the case of maritime transport, some of the transporters will need to renovate their vessels. Some costs will be offset by the savings incurred by a lower administrative burden due to digitalisation and a reduced fuel consumption. While the economic impacts for business operators are important, 2 to 5 years' transition periods are foreseen to facilitate a smooth transition. Ultimately, with

clearer and more harmonised rules than today, business operators will profit from a more level playing field on the single market.

In terms of trade, an increase in production costs and decrease in production levels will lead to decreases in exports for beef, sheep and goat (in quantity, but not necessarily in value)[186]. Economic impacts on imports are expected to be very limited considering the relatively minor proportion of live animals that are transported into the Union.

8.2. REFIT (simplification and improved efficiency)

Providing more harmonised requirements – such as common rules on the maximum journey times for animal transport – will bring a simplification for business operators, as well as for public authorities, compared to the current rules which are now different for the different species and categories of animals. Furthermore, clearer definitions and less use of open norms will make the legislation more efficient and easier to comply with, as business operators no longer need to make their own assessments to decide on the thresholds to use for different provisions to apply.

A greater use of digital tools will simplify the communication between businesses and public authorities. This will represent an improvement, mainly regarding paper based systems e.g. as regards the journey logs for animal transports. For instance, real-time tracking of vehicles would allow to better plan, target and streamline all official controls on animal welfare during transport.

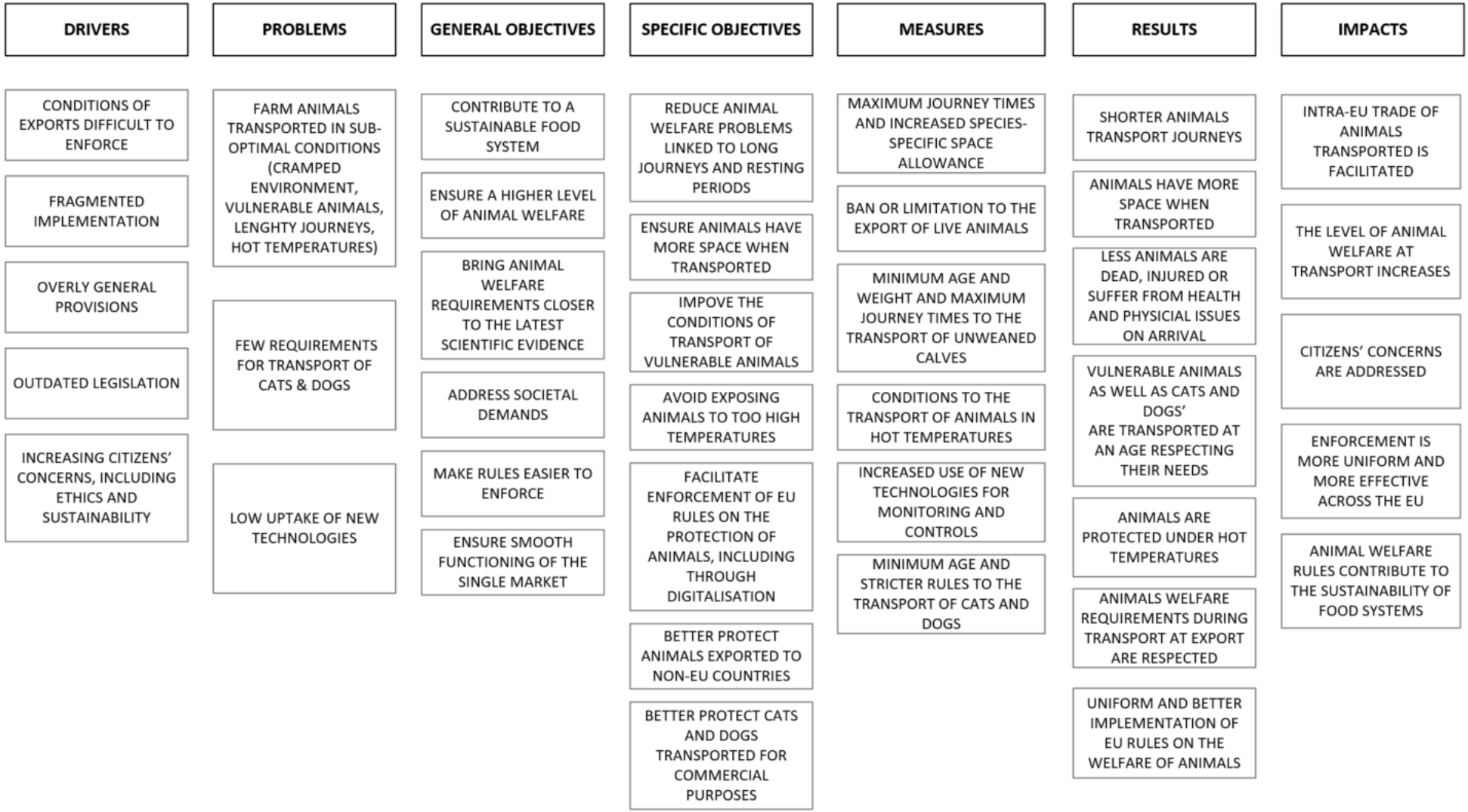
8.3. Application of the 'one in, one out' approach

The package of preferred options will result in certain adjustment costs and administrative costs for business operators, as described in Annex 3. These costs will partly be off-set by mitigating measures, as well as by the further simplification provided by the actions referred to in Section 8.2., and could be expected to be negligible in the long-term, after the end of the depreciation period of the investments made.

Transporters may benefit from up to EUR 71 million in savings from an increased use of digital technologies, such as Global Positioning System (GPS). For export via sea of beef and sheep, the administrative burden would be EUR 195 000 for the one-off registration of vessels to a white or grey flag and EUR 21 208 million annually for the training of a certified animal welfare officer onto each consignment. Additionally, transporters of cats & dogs will face a reoccurring yearly administrative cost of EUR 94.5 million for veterinary checks. Adjustment costs are presented in detail in Annex 3. Adjustment costs by sectors are also presented in Section 6.2.

[186] Modelling of Policy Options, Study Supporting the Impact Assessment accompanying the revision of the EU legislation on the protection of animals during transport (see note 156, page 33).

Figure 3: Intervention Logic



9. HOW WILL ACTUAL IMPACTS BE MONITORED AND EVALUATED?

The measures will be considered successful if, at the end of the transition period, animals suffer less during transport. In addition, the measures would be successful if implementation of EU rules on the welfare of animals during transport improves and becomes more uniform throughout the EU. To monitor and evaluate the measures on the protection of animals during transport, indicators have been identified (Table 14).

Some indicators will continue to be collected from relevant operators and competent authorities through the existing TRACES database. Some additional data – however already available - will also be reported from operators through TRACES and will be collected every 3 years. The introduction of information into TRACES will be simplified by the use of a user-friendly app. In addition, data will be collected through the already existing annual reports from the Member States' competent authorities on their official controls[187], as well as through the THETIS database, with higher granularity. These will serve as the basis for the monitoring reports.

A **monitoring report** on the state of animal welfare in the Union with regards to transport shall be presented 5 years after the date of entry into force of the new Regulation**.** These reports shall be presented at least every 5 years. In order to be able to gather robust evidence after the 5 years transition periods, **an evaluation report** should be presented 10 years after the entry into force. Data on the implementation of the new Regulation will notably be gathered in the network of liaison bodies on the protection of animals during transport, data collected through the monitoring reports, data from audits carried out by the Commission in relation to the new Regulation, as well as relevant data collected and analysed through the four EU Reference Centres for Animal Welfare[188].

[187] Regulation (EU) 2017/625 of the European Parliament and of the Council of 15 March 2017 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products OJ L 95, 7.4.2017, p. 1-163.

[188] Four EU Reference Centres for animal welfare have been established, which cover inter alia welfare of animals during transport: on pigs, on poultry and small farmed animals, on ruminants and equines, and on farmed aquatic animals.

Table 14: Monitoring indicators

Specific objectives	Operational objectives	Indicators	Data source/frequency	Actors responsible for data collection
SO1. Reduce animal welfare problems linked to long journeys and resting periods	- Specify requirements on journey times and resting periods for animals for slaughter as well as transported for other reasons	1. Duration of journey times	- Operators /real-time	- EC (via TRACES)
		2. Number of transports of animals	- Operators /real-time	- EC (via TRACES)
		3. Number and percentage of animals dead on arrival	- Operators /every 3 years	- EC or EFSA (via TRACES)
		4. Number and percentage of animals injured during transport	- Operators /every 3 years	- EC or EFSA (via TRACES)
		5. Absence or presence of animals with health and physical issues other than injuries	- Operators /every 3 years	- EC or EFSA (via TRACES)
SO2. Ensure animals have more space when transported	- Specify requirements on space allowance	6. Percentage of non-compliance of space allowance requirements	- Official controls	- NCA
		7. Number and percentage of animals dead on arrival	- Operators /every 3 years	- EC or EFSA (via TRACES)
		8. Number and percentage of animals injured during transport	- Operators /every 3 years	- EC or EFSA (via TRACES)
		9. Absence or presence of animals with health and physical issues other than injuries	- Operators /every 3 years	- EC or EFSA (via TRACES)
SO3. Improve the conditions of transport of vulnerable animals	- Specify requirements on journey times for transport of unweaned calves	10. Duration of journey times	- Operators /real-time	- EC (via TRACES)
		11. Number of transports of animals	- Operators /real-time	- EC (via TRACES)
		12. Number and percentage of animals injured during transport	- Operators /every 3 years	- EC or EFSA (via TRACES)
		13. Absence or presence of animals with health and physical issues other than injuries, including prolonged thirst and hunger	- Operators /every 3 years	- EC or EFSA (via TRACES)
	- Specify requirements on minimum age	14. Percentage of non-compliance of minimum age requirements	- Official controls	- NCA
SO4. Avoid exposing animals to high temperatures	- Specify conditions and requirements on journey departure and arrival times and journey duration, based on weather forecast	15. Duration of journey times	- Operators /real-time	- EC (via TRACES)
		16. Absence or presence of animals with health and physical issues other than injuries, including heat stress	- Official controls	- NCA
		17. Number and percentage of transports that respect time of departure	- Operators /real-time	- EC (via TRACES)
		18. Number and percentage of transports that respect time of arrival	- Operators /real-time	- EC (via TRACES)
SO5. Facilitate enforcement of EU rules on the protection of animals, including through digitalisation	- Develop additional modules in TRACES - Set up a digital application - Provide access to real-time data to competent authorities as regards the location of trucks	19. Percentage of use of a digital app based on TRACES by operators and national authorities compared to the total transports	- Operators and NCA /real-time	- EC (via digital app)
		20. Number of NCA enforcement actions based on real-time data	- Official controls	- NCA
SO6. Better protect animals exported to non-EU countries	- Specify requirements on journey times and resting periods for animal exports by road	21. Duration of journey times	- Operators/ real-time	- EC (via TRACES)
		22. Number of transports of animals	- Operators/ real-time	- EC (via TRACES)
	- Specify requirements for the presence of an animal welfare officer on board of vessels for exports - Require vessels to be listed under white or grey flag for exports	23. Number of organisers involved in exports from the EU which have received a certificate from a certifying body	- Operators /real-time	- EC (via TRACES)
		24. Percentage of non-compliance of animal welfare office presence requirement	- Official controls	- NCA
		25. Number of listed vessels under white or grey flags	- Operators /real-time	- EC (via THETIS)
SO7. Better protect cats and dogs transported for commercial purposes	- Specify minimum age requirements for the transport of cats and dogs - Specify temperature conditions for the transport of cats and dogs	26. Percentage of non-compliance of minimum age and temperature requirements	- Official controls	- NCA