Review
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Transport of live animals in the EU: challenges and opportunities

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ECA team

Executive summary

I Each year, billions of live animals are transported by road, sea, rail and air within, and to and from the EU, for a number of reasons, such as breeding, fattening or slaughter. The EU has adopted legislation on animal protection during transport. Weaknesses detected by the European Commission and academic studies have shown that current welfare standards are not always upheld and questions on their adequacy have arisen.

II Our review describes the main factors behind the transport of live animals, and illustrates the trends in animal transport. It provides an opportunity to contribute to the debate on animal transport in time for the upcoming revision of the EU's animal welfare legislation. This is not an audit report; it is a review based mainly on publicly available information, material collected specifically for the purpose of this review and our previous work.

III Several inter-linked factors – mainly economic and regulatory – influence the transport of livestock within the EU and to non-EU countries. The EU animal transport legislation is not evenly enforced by member states and there is a risk that transporters could exploit loopholes that derive from the different national sanctions systems. The Common Agricultural Policy supported animal production to ensure stable supplies of affordable food and stimulated actions to promote higher levels of animal welfare on the farm, but thus far has not focused on animal welfare during transport.

IV Economic factors are the main driving force behind animal transport. In a single market, operators such as farmers and meat producers aim to reduce costs, maximise revenues and optimise economies of scale by exploiting cost differences between member states. The negative impact of transport on animal welfare could be mitigated by reducing the number and length of journeys, improving the conditions for live animals during transport, and finding alternatives to animal transport.

V The quality of animal welfare during transport is not taken into account in the cost of transport and price of meat. According to academic and Commission studies, the lack of data hampers the development of incentive systems that could encourage transport companies to prevent animal welfare problems, and minimise the economic incentives of non-compliance.

VI Consumers may play an important role in driving change. Respondents to Commission surveys claimed to take account of animal welfare when buying meat products, but be willing to pay higher prices only if they were informed about good animal welfare conditions. However, the sheer number of different labelling schemes, especially at national level, and the absence of specific information, make it difficult for consumers to make informed choices.

VII The European Green Deal and the Farm to Fork Strategy promote the transition towards a more sustainable food system. Such a transition would require structural changes in the supply chain and in food consumption patterns. From a broader perspective, there is a relationship between the volume of meat consumption and the number of live animals transported. Through its promotional campaigns and funding programmes, the Commission helps EU farmers and the food industry to sell their farm products, including meat (fresh, chilled and frozen) and meat preparations.

VIII Member states record animal movements in national identification and registration databases. For movements between member states or entering into the EU, data are recorded in a Commission database. These databases were created to record animal identification, farm registration and sanitary certification for the purposes of disease control, and are not currently adapted to provide the Commission with comprehensive centralised data on animal transport. The use of new technologies could improve the monitoring of animal transport in terms of movements, and also in terms of animal welfare during transport. Digital tools could optimise the planning and logistics of animal transport.

IX We also highlighted several challenges for EU policy makers and stakeholders:

- identifying and adopting alternatives to animal transport;
- providing better information to help consumers to make informed choices;
- promoting structural changes towards a more sustainable food system;
- assigning monetary value to animal suffering during transport and taking account of this in the transport costs and the price of meat; and
- obtaining a comprehensive centralised overview of animal transport at EU level, and exploiting new technologies to monitor animal transport, measure animal welfare during transport and promote logistic optimisation.

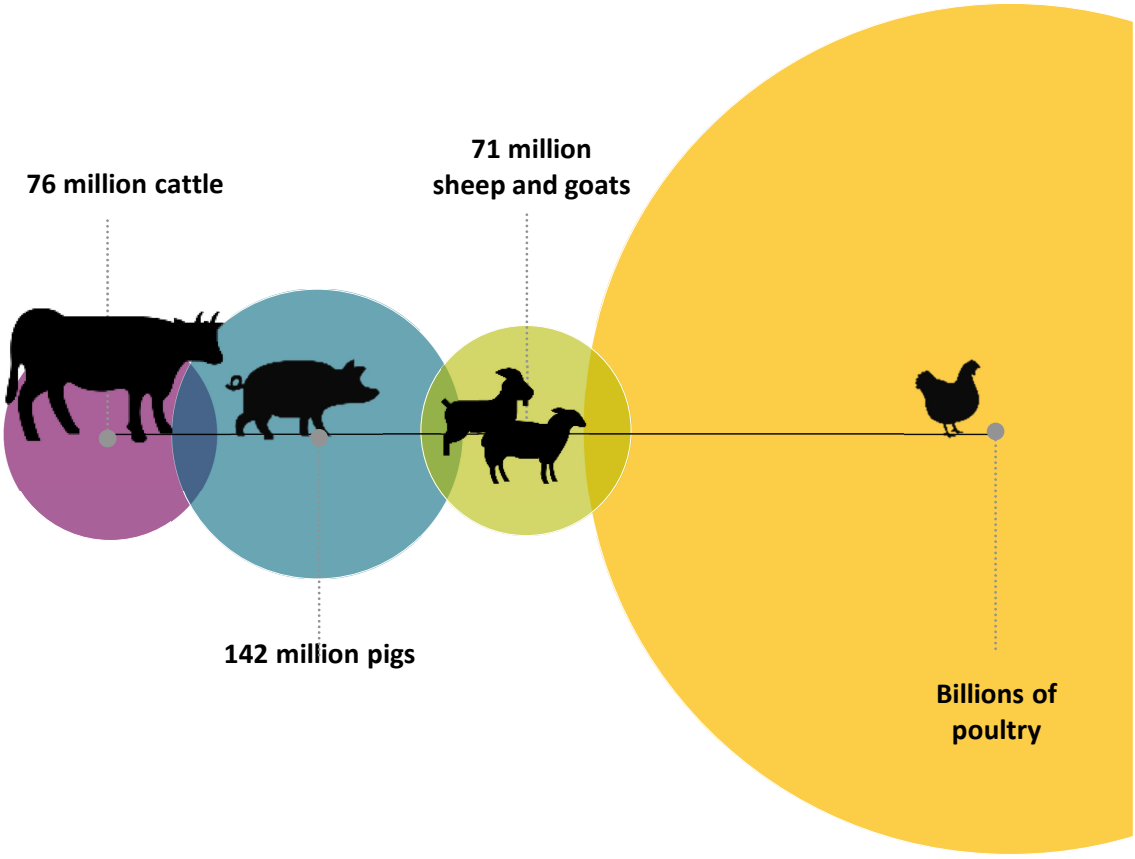
X We identified the following related opportunities, which could be taken into account in light of the upcoming revision of EU legislation:

- promoting the transport of meat rather than live animals, and the use of local and mobile slaughterhouses;
- increasing transparency and harmonisation in meat labelling, for example through an EU animal welfare labelling system;
- providing the right incentives to producers, users and consumers in order to encourage sustainable behaviour;
- developing a methodology to price-in animal suffering in transport costs and the meat price;
- harnessing the potential of IT and technological improvements to track all animal journeys, including domestic journeys; using cameras and sensors to measure and monitor animal welfare during transport; and using digital tools to optimise the planning and logistics of animal transport.

Introduction

01 In 2021, EU farmers reared 76 million cattle, 142 million pigs, 60 million sheep, 11 million goats, together with billions of poultry and other animals, ranging from rabbits to horses (*Figure 1*)[1].

Figure 1 – Animals farmed in the EU in 2021



Source: ECA based on Eurostat and EPRS data

02 During their lifetime, these animals may travel from one farm to another for breeding or fattening, and to slaughterhouses for slaughter. In most cases, they remain in the same country, but they may also travel to another member state or to another country outside the EU. Distances travelled and journey duration can vary considerably[2].

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[1] Eurostat, Livestock population in numbers; European Parliamentary Research Service (EPRS), EU trade and transport of live animals (2020), p. 1.

[2] EPRS, EU trade and transport of live animals (2020), p. 1.

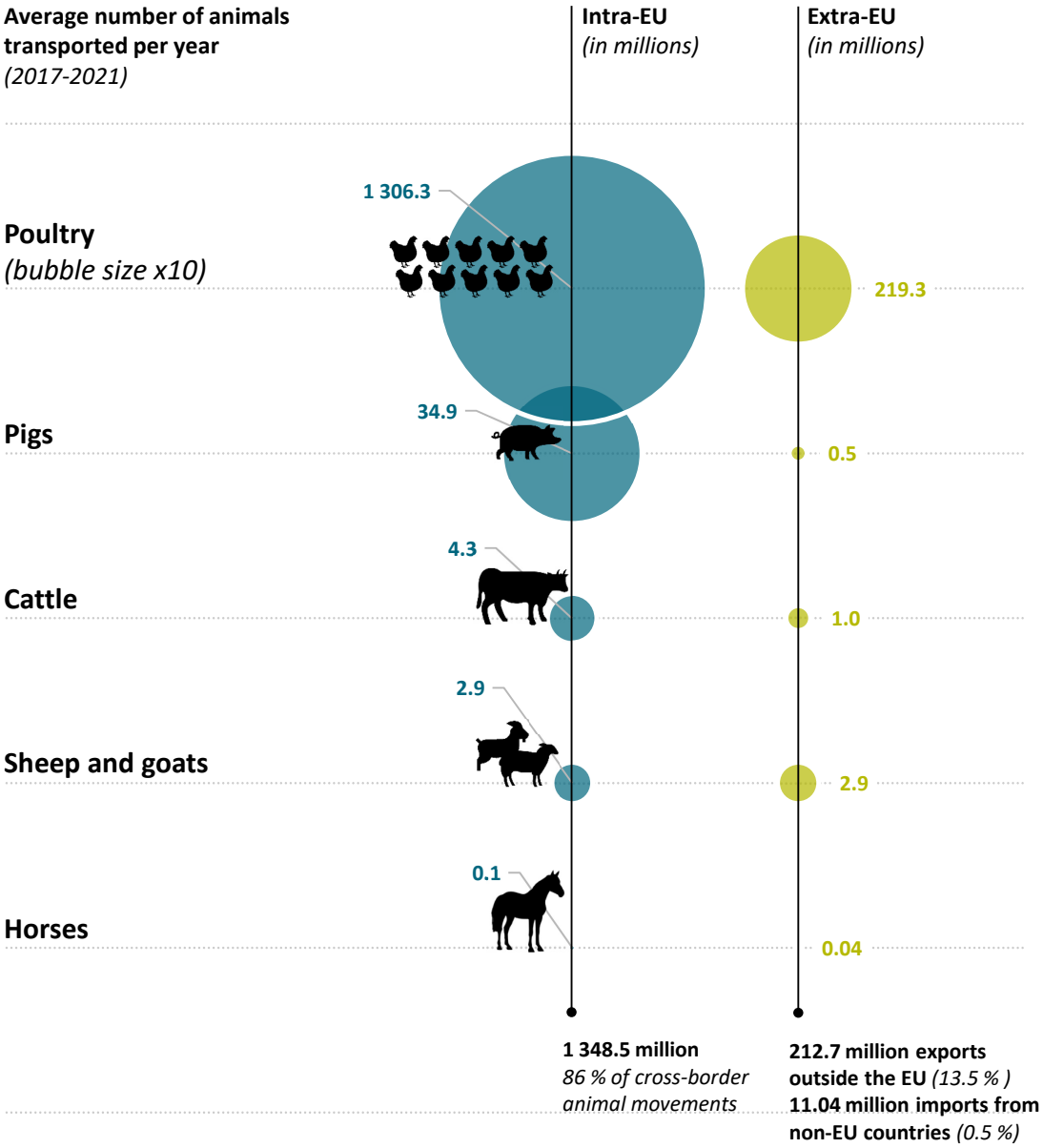
03 The Commission (Eurostat) categorises animal transport as:

- domestic transport, i.e. within a member state;
- intra-EU transport, i.e. between member states;
- extra-EU transport, i.e. to or from non-EU countries[3].

04 In 2017-2021, cross-border animal transport (both in terms of number of animals and weight) consisted of 86 % intra-EU movements, 13.5 % exports outside the EU, and 0.5 % imports from non-EU countries. 1.6 billion live animals were transported between member states and to or from non-EU countries (see ***Figure 2***).

[3] Eurostat, Statistics explained.

Figure 2 – Composition of live animal transport between member states and to or from non-EU countries in 2017-2021



Note: Data on domestic transport are not included in Comext.

Source: ECA, based on Comext data

05 Animals can be transported by road, sea, air, and rail. Whatever the mode, transport is a source of stress for animals and as such can have a negative impact on their welfare[4]. Animals are exposed to stress when they are being loaded and unloaded and during transport, they may suffer from hunger, thirst, heat, a lack of space and rest[5]. Animal welfare depends on the distance and duration of the journey and on the journey conditions (e.g. space allowance, microclimatic and road conditions, and the level of consideration shown by drivers)[6].

06 In recent years, EU citizens have become increasingly concerned about animal welfare, and non-governmental organisations (NGOs) have highlighted the poor conditions animals can endure during transport[7]. All this has not only raised questions about the effectiveness of EU rules, but also about the justification for transporting live animals over long periods of time or over long distances.

07 In 2019, the Council[8] stressed the need to improve the welfare of animals transported over long distances and encouraged the Commission to review and update the current EU legislation on animal transport. The European Parliament also called on the Commission to review the legislation[9] (***Box 1***).

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[4] European Food Safety Authority (EFSA), Welfare of cattle during transport (2022), p. 16.

[5] European Parliament's Directorate-General for Internal Policies of the Union (IPOL), Patterns of livestock transport in the EU and to third countries (2021), p. 7; EFSA, Welfare of cattle during transport (2022), p. 5.

[6] EFSA, Welfare of cattle during transport (2022), p. 91.

[7] Eurogroup for Animals (EFA), Live animal transport (2021); Animals' Angels, The myth of enforcement (2016).

[8] Council, Conclusions on animal welfare (2019), paragraph (7).

[9] European Parliament, Resolution on the protection of animals during transport (2012), paragraph 23, European Parliament, Resolution on the implementation of Council Regulation (EC) No 1/2005 (2019), paragraph 68.

Box 1

The European Parliament's inquiry into the protection of animals during transport

In June 2020, the European Parliament set up a committee of inquiry on the protection of animals during transport (ANIT) to investigate alleged violations in the application of EU animal transport rules.

In December 2021, the committee presented its report concluding that EU provisions in this area did not fully take into account the different needs of animals, and that member states did not always comply with EU provisions[10].

In January 2022, the European Parliament adopted a final recommendation, calling on the Commission and member states to step up their efforts to ensure respect for animal welfare during transport, and update EU rules. In particular, the Parliament asked for restrictions on journey times, checks on the export of live animals to non-EU countries and expressed a preference for transporting meat rather than live animals.

Source: ANIT Committee's webpage

08 In May 2020, the Commission presented its Farm to Fork Strategy, where it committed to revising the current EU animal welfare legislation, including animal transport rules, in order to (i) align the legislation with the latest scientific evidence, (ii) broaden its scope, (iii) make it easier to enforce, and (iv) ultimately ensure a higher level of animal welfare. The Commission intends to propose revised animal welfare legislation by the end of 2023[11].

[10] European Parliament, 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 (2021).

[11] Commission's webpage on the revision process.

09 The Commission is responsible for proposing EU legislation and monitoring member states' application thereof. It carries out controls in the member states and verifies that EU legislation is properly implemented and enforced. It can also take legal action against member states that fail to correctly transpose and implement EU legislation[12].

10 Member states are responsible for applying EU rules at national level, including carrying out official inspections, and taking appropriate enforcement measures[13]. The member states lay down the rules on applicable penalties for non-compliance infringements and take any measures necessary to ensure that the rules are applied[14]. Member states report to the Commission on the results of their inspections on an annual basis[15].

11 The European Food Safety Authority (EFSA) is an EU agency set up in 2002, which provides scientific advice on the risks associated with the food chain, from farm to fork, including animal welfare during transport.

12 The European Parliament's Directorate-General for Internal Policies of the Union (IPOL) supports the European Parliament in exercising and developing its legislative and control powers in the field of internal policies, including animal transport.

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[12] ECA, special report 31/2018: "Animal welfare in the EU: closing the gap between ambitious goals and practical implementation", Figure 2.

[13] ECA, special report 31/2018: "Animal welfare in the EU: closing the gap between ambitious goals and practical implementation", Figure 2.

[14] Article 25 of Regulation (EC) No 1/2005.

[15] Article 27(2) of Regulation (EC) No 1/2005.

Scope and approach of the review

13 Our review describes the main factors behind the transport of live animals, focusing on the role of EU policies and economic factors, and illustrates the trends in animal transport. In this review, the term "live animals" should be understood as the following terrestrial animals, namely: cattle, pigs, poultry, sheep, goats, and horses (whether for meat production, breeding or competitions). Pets, laboratory, zoo and circus animals are excluded from the scope of this review.

14 This is not an audit report; it is a review based mainly on publicly available information, material collected specifically for the purpose of this review, and our 2018 report on animal welfare[16]. We reviewed relevant EU legislation, including the Common Agriculture Policy, labelling, and hygiene rules. We examined publications relevant to the review topic by the European Parliament, the Commission, member states, Supreme Audit Institutions, academic institutions, NGOs, and professional associations (***Annex I***). Our analysis of the factors that influence animal transport focuses on the reasons for moving livestock both within the EU and to non-EU countries.

15 We analysed data from the EU's TRACES and Comext databases, and other datasets from Eurostat. We mainly used data from the 2017-2021 period. Since there is no publicly available data on domestic transport, our data analyses do not cover this aspect: they refer only to intra-EU or extra-EU transport, as specified in each figure.

16 We interviewed Commission officials; we consulted professional associations in the farming and meat production sectors and NGOs in the field of animal protection; we used input from academic experts to support our analysis of the impact of economic factors on animal transport. To contribute to our understanding of the issues involved, we took part in an information visit to Poland to meet national authorities and visit facilities involved in animal transport (i.e. a slaughterhouse and a control post where animals stop to rest on long-distance journeys).

17 Publishing this review at the beginning of 2023 provides an opportunity to contribute to the ongoing debate on animal transport in time for the Commission's upcoming revision of EU animal welfare legislation.

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[16] ECA, special report 31/2018: "Animal welfare in the EU: closing the gap between ambitious goals and practical implementation".

Factors behind animal transport

18 Several factors can influence the transport of livestock within the EU and to non-EU countries[17]. For the purposes of this review, we have classified them into two inter-linked categories:

- regulatory;
- economic.

Regulatory factors

19 EU legislation, policies and initiatives that are currently in force and either directly or indirectly affect animal transport include:

- **EU animal transport legislation**: this provides the EU baseline that member states must respect to ensure animal welfare during transport.
- The **Common Agriculture Policy (CAP)**: through its rules and incentives, the CAP can influence how individual farmers choose to manage their land, crops, and livestock.
- **EU labelling policies**: based on mandatory or voluntary requirements, labelling helps consumers to make an informed choice when purchasing food. Meat sold in the EU can bear different indications, such as origin labelling and animal welfare labelling.
- The **Geographical indication system** and the **Traditional specialities guaranteed system**: these EU quality schemes protect the names of specific products to promote their unique characteristics, which are linked to their geographical origin or traditional know-how. The EU symbol labelling is mandatory.
- The **European Green Deal**: introduced in 2019, this strategy aims to eliminate net emissions of greenhouse gases by 2050 and shift to a sustainable food system.
- The **Farm to Fork Strategy**: introduced in 2020, this strategy aims to accelerate the transition throughout the food supply chain.

[17] IPOL, Patterns of livestock transport in the EU and to third countries (2021), section 2.

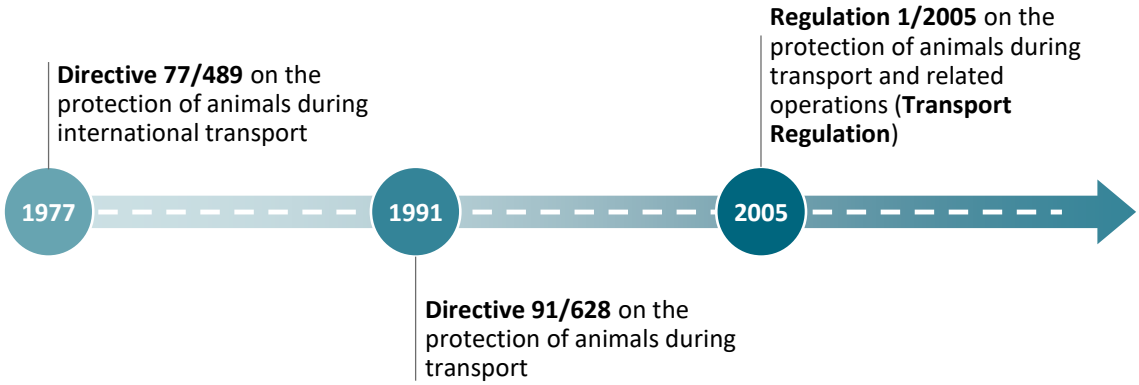
- The **EU Hygiene package**: adopted in 2004, this created a single hygiene regulatory framework applicable to all foodstuffs and food operators, covering all stages of the food supply chain, including slaughterhouses.

- The **Animal health law**: applicable since April 2021, this legislation regulates animal traceability to help prevent transmissible animal diseases.

EU animal transport legislation is not evenly enforced across member states

20 The EU first introduced legislation on animal protection during transport more than 40 years ago. ***Figure 3*** shows the key milestones. The current legislation (the Transport Regulation) defines the responsibilities of the various parties in the transport chain, and regulates the transport of live vertebrate animals within the EU, including checks on animals when entering or leaving the EU[18].

Figure 3 – Key EU legislation on animal welfare during transport



Source: ECA

21 According to respondents' feedback from a public consultation launched by the Commission in 2021, the EU's rules on animal welfare, including the Transport Regulation, have facilitated trade and improved competition in Europe by removing obstacles to trading live animals in the single market[19]. This was also confirmed with the Commission's 2010 evaluation of EU animal welfare legislation[20].

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[18] ECA, Background paper: Animal welfare in the EU (2018), p. 6.

[19] Commission, Factual summary report of the online public consultation in support to the fitness check and revision of the EU animal welfare legislation (2022), p. 3.

[20] Commission, Fitness check of EU animal welfare legislation (2022), p. 25.

22 However, the Commission detected weaknesses in the implementation of the Transport Regulation, especially in the official controls carried out by member states for journeys to non-EU countries and for the transport of unfit animals[21]. In 2020, member states carried out more than 900 000 official controls and applied almost 8 000 sanctions. The main issues were:

- animal fitness (for cattle and pigs);
- transport practices (for poultry);
- problems with transport documentation (for sheep, goats, horses and donkeys[22]).

23 Since penalty setting and application is delegated to member states, there are significant differences in their administrative and sanctioning procedures, the types of sanction imposed for non-compliance, and the severity of the sanctions[23]. As researchers discovered, enforcement differences between member states could result in transport companies opting for a longer route to avoid member states with tighter local rules or tighter enforcement of the Transport Regulation[24]. In its 2011 report on the impact of the Transport Regulation, the Commission recognised the need for a more harmonised application of the rules in the transport sector[25].

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[21] Commission, Overview report on systems to prevent the transport of unfit animals in the EU (2015); Commission, Welfare of animals exported by road (2020); Commission, Welfare of animals transported by sea (2020).

[22] Commission, Staff Working Document accompanying the Report on the overall operation of official controls performed in Member States (2019-2020) to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products (2022), pp. 28-31.

[23] EPRS, Protection of animals during transport: sanctions for infringements (2021), p. 4.

[24] Van Wagenberg, Baltussen, Socio-economic reasons for long-distance cross-border transport of animals in the EU (2021).

[25] Commission, Report on the impact of Council Regulation (EC) No 1/2005 on the protection of animals during transport (2011), p. 12.

The Common Agricultural Policy is focused on elements other than animal welfare during transport

24 The Common Agriculture Policy (CAP) was set up in 1962. In order to achieve its objective of ensuring stable supplies of affordable food, , it initially encouraged farmers to produce food by guaranteeing prices for the key agricultural products (such as beef) and farmers' incomes[26]. This changed the traditional livestock sector, leading to its specialisation and concentration, and consequently affecting the transport of live animals[27].

25 After its first major reform in 1992, the CAP gradually reduced price support and introduced direct payments linked to the area of production and to certain animals (cattle and sheep)[28]. From 2003, subsequent reforms further broke the link between direct payments and the type and amount of products that farmers produced. At the same time, these reforms introduced stricter environmental and animal welfare rules in order for farmers to receive payments[29]. The new CAP, which came into force in 2023, has not introduced any significant changes that would affect animal transport, either in terms of volume or welfare conditions.

26 The granting of most CAP support is linked to compliance with two sets of baseline conditions:

- Good Agricultural and Environmental Conditions (GAEC), which do not cover animal welfare;
- Statutory Management Requirements (SMRs), which refer to regulatory requirements outside the CAP[30]. These include EU directives[31] on animal welfare, but do not include the Transport Regulation.

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[26] Commission, The future of the livestock sector (2020), p. 38.

[27] Commission, The future of the livestock sector (2020), p. 36.

[28] Commission, CAP explained (2017).

[29] Commission, CAP explained (2017).

[30] Commission, Study on CAP Measures and Instruments Promoting Animal Welfare and Reduction of Antimicrobials Use (2022), p. 7.

[31] Directive 2008/119/EC laying down minimum standards for the protection of calves; Directive 2008/120/EC laying down minimum standards for the protection of pigs; Directive 98/58/EC concerning the protection of animals kept for farming purposes.

27 The CAP finances animal welfare measures in member states' rural development programmes, focusing on conditions on the farm rather than during transport. In addition to rural development interventions, from 2023 the CAP provides direct payments in the form of "eco-schemes" for climate, the environment and animal welfare, covering commitments that go beyond the minimum EU or national requirements[32]. The Commission has published a factsheet listing the potential agricultural practices that eco-schemes could support but these do not cover transport-related operations[33].

28 Rural development measures also finance investments in physical assets, quality schemes and organic farming, all of which may encourage higher animal welfare standards[34]. For instance, in Poland, the CAP financed a "Quality meat programme for beef", which included animal welfare requirements for housing, antibiotics use, and transport and slaughter conditions[35]. The CAP allows for animal transport alternatives to be financed: in Malta, the CAP granted support to a small slaughterhouse linked to a rabbit farm, and in Latvia it provided support for a mobile slaughterhouse for common use.

There is no common meat labelling standard

29 The indication of the country of origin – **origin labelling** – has been mandatory at EU level for beef since 2000[36], and for pork, poultry, sheep and goat meat since 2015[37]. There are no mandatory requirements for other meats, such as horsemeat and rabbit meat. As part of its Farm to Fork Strategy, the Commission is considering extending the mandatory origin requirements to include other food products[38].

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[32] Article 31 of Regulation (EU) No 2021/2115.

[33] Commission, List of potential agricultural practices that eco-schemes could support (2021).

[34] Commission, Study on CAP Measures and Instruments Promoting Animal Welfare and Reduction of Antimicrobials Use (2022), pp. 7-10, 48-50.

[35] Commission, Study on CAP Measures and Instruments Promoting Animal Welfare and Reduction of Antimicrobials Use (2022), pp. 53 and 69.

[36] Article 25 of Regulation (EC) No 1760/2000.

[37] Article 9 of Regulation (EU) No 1337/2013.

[38] Commission, Farm to Fork Strategy (2020), p. 13.

30 The current EU legal framework requires specific information on origin to be provided, depending on the type of meat (***Table 1***).

Table 1 – Information on origin labelling

Type of meat	Labelling requirements
Beef	Obligation to indicate places of birth, rearing and slaughter
Pork, poultry, sheep and goat meat	No obligation to indicate place of birth. Obligation to indicate places of rearing and slaughter but: o the definition of rearing allows the animal to spend a short period of time in a country other than the country indicated as the rearing country on the label; o indications of rearing and slaughtering sites may be replaced by the indication "Origin" if the food business operator can prove that the meat has been obtained from animals born, reared and slaughtered in one single country.

Source: ECA

31 According to a consumer survey launched by the Commission in 2020, consumers have little understanding of the terms "reared in" and "origin". Most of them interpret "reared in" as the country where the animal has spent its whole life, or where it was born[39].

32 Other types of labels are used in the EU **geographical indication system** (paragraph ***19***), which designates a product where its quality or reputation is linked to its geographical origin. Animal-related products can use the following two label systems: protected designation of origin and protected geographical indication (***Table 2***).

[39] Commission Staff Working Document, Evaluation of the mandatory indication of the country of origin or place of provenance for fresh, chilled and frozen meat of swine, sheep, goats and poultry (2021), p. 13; Commission, Report evaluating the mandatory indication of the country of origin or place of provenance for meat of swine, poultry, sheep and goat (2021), p. 6.

Table 2 – Transparency limitations of the EU's geographical indication labels

Protected designation of origin	Protected geographical indication
All production steps (birth, rearing, and slaughtering) must take place within the defined geographical area	At least one production step must take place in the defined area The animal may be born or slaughtered in places other than the geographical area covered by the Protected Geographical Indication

Source: ECA

33 The **Traditional specialities guaranteed system** (paragraph ***19***) also uses special labelling for food products. It highlights traditional aspects, such as the way the product is made or its composition, without being linked to a specific geographical area. This quality scheme protects the production method, but the product itself could be produced elsewhere.

34 At present, there is one EU-wide compulsory **labelling system for animal welfare** (paragraph ***19***), and it applies to table eggs. Egg marking depends on the system used for rearing laying hens. Marketing standards for poultry meat define certain optional terms, which also include references to different types of farming [40].

35 In the absence of other specific EU rules, animal welfare-related products are subject to voluntary certification at national level[41]. As a result, various national labelling schemes have emerged. These follow different approaches, provide different levels of animal welfare protection, and can confuse consumers[42]. As part of its Farm to Fork Strategy, the Commission announced that it would consider options for animal welfare labelling[43].

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[40] EPRS, Animal welfare on the farm – ex-post evaluation of the EU legislation: Prospects for animal welfare labelling at EU level (2021), p. 73.

[41] Articles 36 and 37 of Regulation (EU) No 1169/2011; Commission Communication, EU best practice guidelines for the voluntary certification schemes for agricultural products and foodstuffs (2010).

[42] Commission, Inception Impact Assessment on animal welfare (2021), p. 2.

[43] Commission, Farm to Fork Strategy (2020), p. 8.

36 According to a 2022 study[44], two thirds of consumers felt that the information available to them was not sufficient to make informed purchase choices based on animal welfare. Almost half would like to receive more information on slaughter conditions (40 %) and adequate feeding (40 %). Respondents were less interested in transport duration (16 %) and transport conditions (16 %).

Recent EU strategies have proposed a more sustainable food system

37 Animal transport involves significant environmental costs[45]. Specific studies compared the impact of transporting meat and carcasses with the transport of live animals. These studies showed that the former is more sustainable from an environmental and climate change point of view[46].

38 The European Green Deal and the Farm to Fork Strategy promote the transition towards a more sustainable food system. The Green Deal suggests that the transport price should reflect its impact on the environment. Well-designed financial initiatives could play a direct role by sending the right price signal and providing the right incentives to encourage sustainable behaviour from producers, users and consumers[47]. According to the Commission, such a transition cannot be envisaged without structural changes in both the supply chain and in food consumption patterns[48].

Economic factors

39 While several factors (e.g. natural production conditions) influence transport of live animals, economic factors are the main driving force behind animal transport. In the context of the EU single market, operators exploit differences in production and

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[44] Commission, Study on animal welfare labelling (2022), pp. 18-21.

[45] Baltussen et al., Transport of live animals versus meat (2017), p. 7; Commission, Fitness check of EU animal welfare legislation (2022), p. 49.

[46] Baltussen et al., Transport of live animals versus meat (2017), pp. 13 and 15; Baltussen et al., Sustainable production: transporting animals or meat? (2009), pp. 7 and 10.

[47] Commission, European Green Deal (2019), p. 17.

[48] Commission, Fitness check of EU animal welfare legislation (2022), p. 49.

slaughter costs between member states to reduce costs and maximise revenues[49]. We identified five key economic factors to encourage the transport of live animals:

- specialisation of livestock sector;
- concentration in the slaughter sector;
- differences in animal production and slaughter costs between member states;
- marginality of transportation costs; and
- consumer preferences.

Specialisation in the livestock sector

40 For more than 70 years, the livestock sector has engaged in a process of modernisation and intensification, aiming at maximising production per animal and reducing costs[50]. Some EU territories have become highly specialised in intensive animal production, others in crop production. This specialisation was also due to natural production conditions (e.g. pasture areas have a higher concentration of milk production and dairy calves). Between 2005 and 2016, the total number of agricultural holdings decreased by 28.6 %, and those with livestock by 37.6 %[51]. While the overall number of agricultural holdings decreased, the size of the remaining holdings increased.

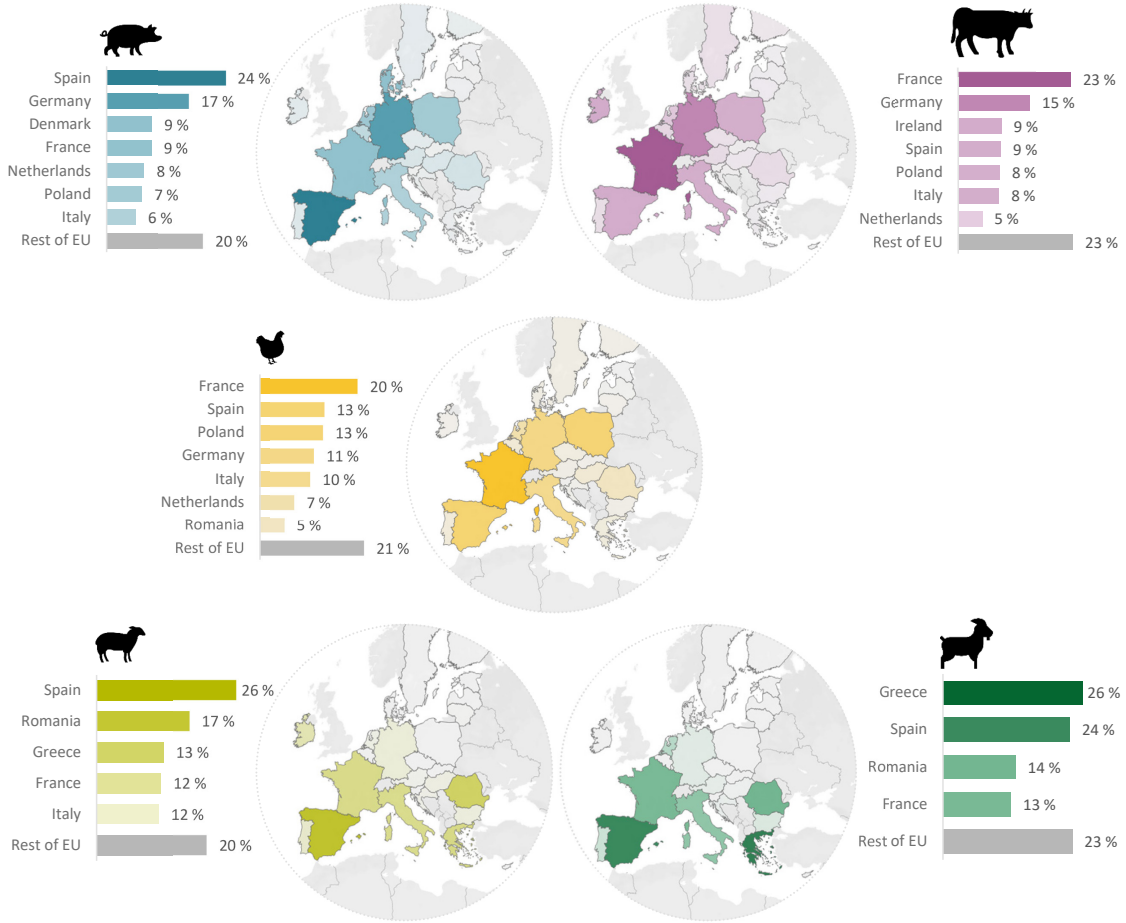
41 While the number of cattle, pigs, sheep and goats in the EU-27 was relatively stable from 2010 to 2020, the number of poultry increased. Livestock production is not evenly distributed across the EU (***Figure 4***) and there are also differences in the density of livestock production between regions within individual member states.

[49] Commission, Fitness check of EU animal welfare legislation (2022), p. 15.

[50] Commission, The future of the livestock sector (2020), p. 36.

[51] Eurostat, Agri-environmental indicator: livestock patterns.

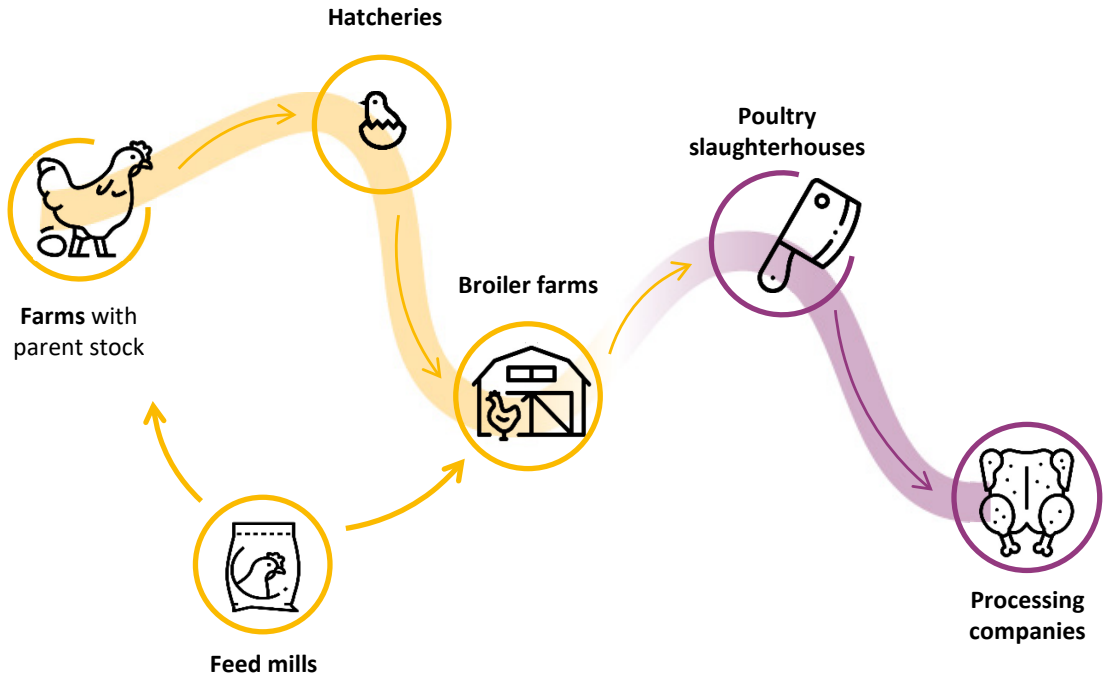
Figure 4 – Distribution of livestock among member states (2016 for poultry; 2021 for pigs, cattle, sheep and goats)



Source: ECA, based on Eurostat data

42 Specialisation occurs at regional level, but also at farm level, with farms specialising in one species e.g. poultry (meat or eggs), pigs, veal or dairy cows, or one stage of production e.g. breeding or fattening. ***Figure 5*** illustrates the example of the poultry sector.

Figure 5 – Specialisation in the poultry sector



Source: Van Horne, Competitiveness of the EU poultry meat sector (2018), page 17

43 Among other factors, this specialisation contributes to the transport of live animals between member states, for example:

- pigs fattened and slaughtered in Germany are often born in Denmark or Netherlands[52];
- cattle born in France, Ireland or Lithuania are often fattened and slaughtered in Spain or Italy (***Box 2***).

[52] Bittlmayer, Local Characteristics of Pig Production in Germany and Bavaria (2019).

Box 2

Veal and beef production in Italy and Spain depends on calves from other member states

Italy produces veal and Spain produces beef. Both countries mostly rely on cattle of national origin, but also import calves from other member states to cope with:

- **seasonal demand**: Italy imports cattle from April to June to compensate for inadequate supply from national sources during this period, and to ensure veal supplies when national demand is higher in December-January;
- **export demand**: Spain (Catalonia and Aragon) depends on imports of calves to meet the increasing demand for cattle to be exported to the Middle East for slaughter.

Source: Commission, Study on shifting from transport of unweaned dairy calves over long distance to local rearing and fattening (2022), pp. 25-29

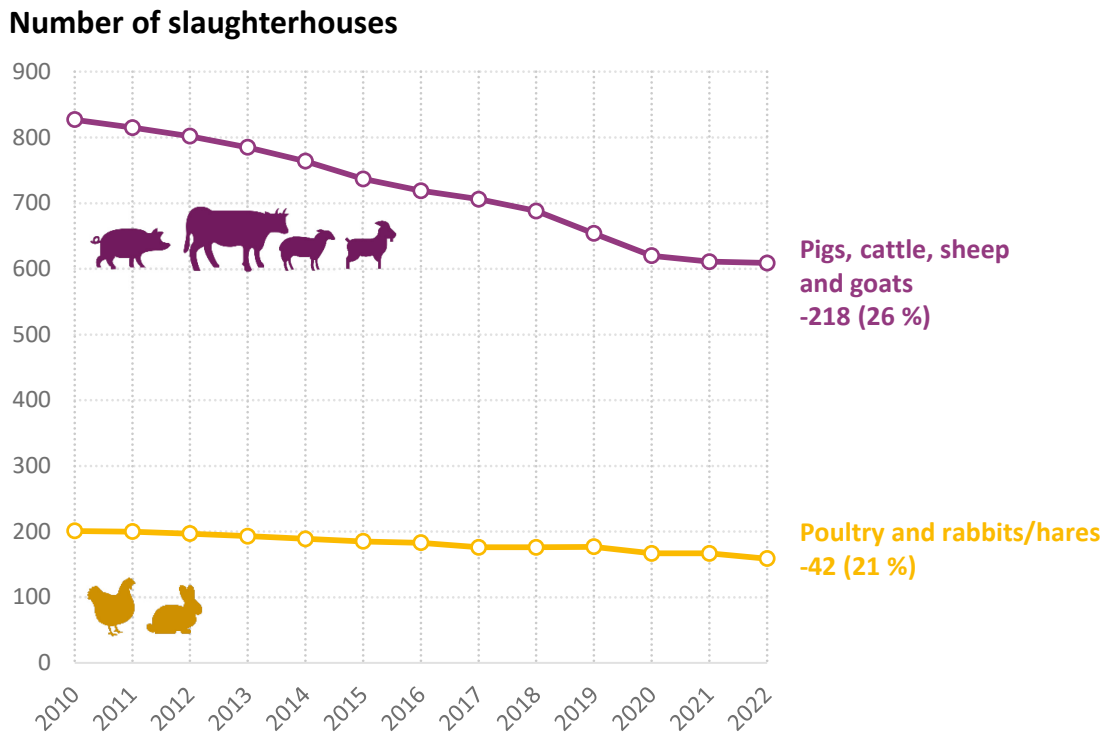
Increased concentration in the slaughter sector

44 There are no exhaustive data on the number of slaughterhouses in the EU, but the sector has undergone a process of consolidation, with a trend towards fewer and larger slaughterhouses[53]. ***Figure 6*** shows the trend in Poland since 2010. This trend accelerated with the entry into force of the EU hygiene package (paragraph ***19***) in 2006. Many small slaughterhouses found it difficult to comply with the stricter hygiene requirements under the new legislation and still remain economically viable[54].

[53] EFA, A strategy to reduce and replace live animal transport (2019), p. 18.

[54] IPOL, Patterns of livestock transport in the EU and to third countries (2021), p. 11.

Figure 6 – Number of slaughterhouses in Poland (2010-2022)



Source: ECA, based on data provided by Polish authorities

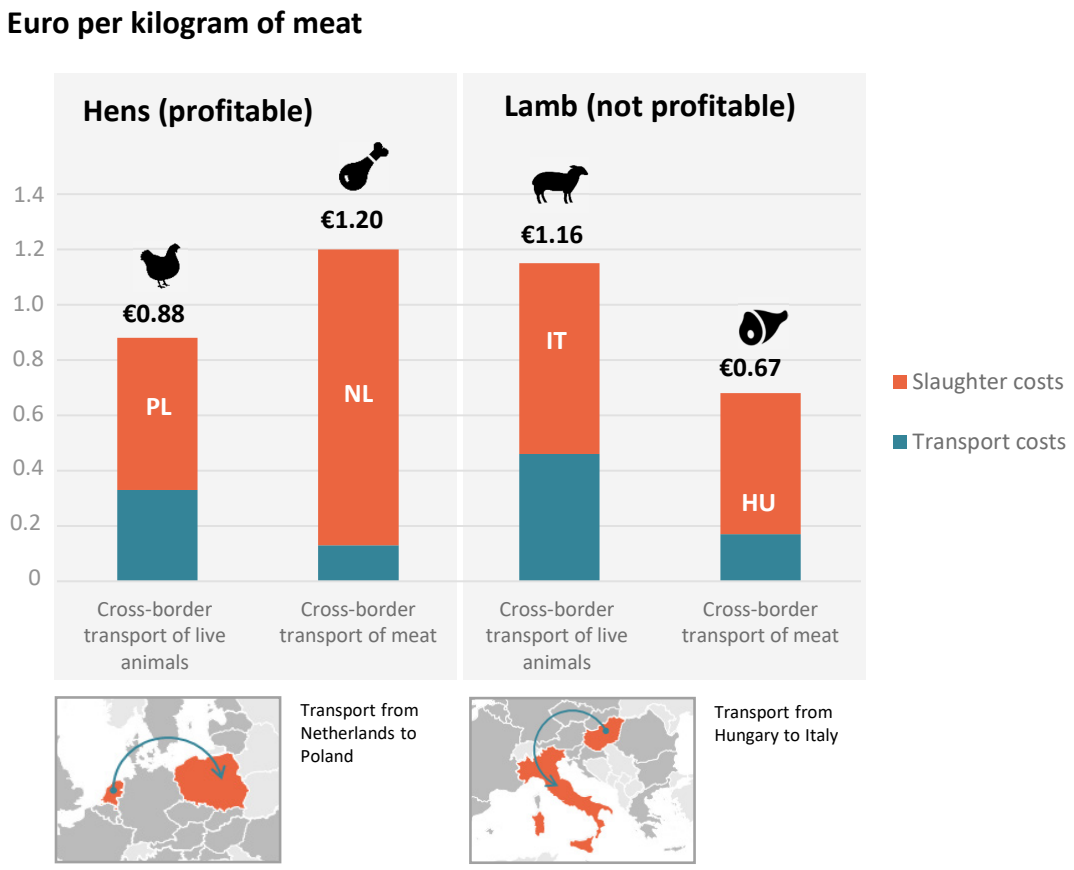
45 It is easier for larger slaughterhouses to meet the stricter hygiene rules. However, since they generally operate with low profit margins, they need to maintain high productivity to achieve economies of scale, which requires a sufficiently high number of animals from a wider geographical area. They also tend to specialise in particular types of animal e.g. pigs, sows, veal calves, bulls, poultry, or lambs. All of these issues have contributed to the decline in the number of slaughterhouses and led to an increase in long-distance transport and a potential increase in the cross-border transport of live animals for slaughter, especially for animals belonging to small categories in terms of their numbers, such as turkeys or animals at the end of their productive life (e.g. laying hens)[55].

[55] EFA, A strategy to reduce and replace live animal transport (2019), p. 18; IPOL, Patterns of livestock transport in the EU and to third countries (2021), p. 11.

46 Two studies[56] have assessed the advantages and disadvantages of long-distance transport of live animals for slaughter, compared to local slaughter followed by the transport of meat. Both studies concluded that transporting meat rather than live animals may be more sustainable in terms of animal welfare.

47 The 2017 study estimated the costs related to transporting laying hens at the end of their productive period from Netherlands to Poland, and transporting live lambs from Hungary to Italy (***Figure 7***). In the first case, due to higher slaughter costs in Netherlands than Poland, it was cheaper to transport live animals rather than meat. Although in the second case it was cheaper to transport meat rather than live animals, the lambs were transported anyway because other factors prevailed (e.g. the limited slaughter capacity in Hungary[57]).

Figure 7 – Cost of transporting live animals compared with meat



Source: Baltussen et al., Transport of live animals versus meat (2017), pp. 12-14

[56] Baltussen et al., Sustainable production: transporting animals or meat? (2009); Baltussen et al., Transport of live animals versus meat (2017).

[57] Baltussen et al., Transport of live animals versus meat (2017), p. 14.

48 One possibility to reduce animal transport is to bring slaughter closer to the production site by developing local slaughterhouses and mobile slaughtering facilities. Researchers concluded that a sufficient number of mobile and small-scale slaughterhouses would make pig and cattle journeys of more than four hours almost unnecessary in Sweden[58]. However, local and mobile slaughterhouses represent small-scale solutions, meeting niche demand and specific needs [59]:

- **Local slaughterhouses**: in Germany, some local slaughterhouses have specialised in premium, traditionally processed products, using meat from the region and providing a transparent supply chain from the farm to the butcher's shop[60]. Similarly, in Sweden, strict regulatory standards for animal welfare and an increased consumer focus on locally sourced sustainable meat have encouraged investments in the small-scale production of premium products[61].

- **Mobile slaughterhouses**: these could provide a complementary solution to meet specific needs e.g. to prevent having to transport unfit end-of-career cows[62]. However, mobile slaughterhouses also face challenges in terms of logistics and profitability. They have high running costs and their success depends on opportunities to create added value and charge premium retail prices for final products[63].

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[58] Håkansson et al., Improvement of animal welfare by strategic analysis and logistic optimisation of animal slaughter transportation (2016), p. 261.

[59] EFA, A strategy to reduce and replace live animal transport (2019), pp. 5 and 27.

[60] Eurofound, Meat processing workers (2018), p. 3; IPOL, Patterns of livestock transport in the EU and to third countries (2021), p. 13.

[61] Eurofound, Meat processing workers (2018), p. 2.

[62] EFA, A strategy to reduce and replace live animal transport (2019), p. 27; Commission, Study on economic models to prevent the transport of unfit end-of-career dairy cows (2022), pp. 157-162.

[63] IPOL, Patterns of livestock transport in the EU and to third countries (2021), p. 12; Hultgren, Avoiding live-animal transport to slaughter: mobile abattoirs (2022); Commission, Study on economic models to prevent the transport of unfit end-of-career dairy cows (2022), p. 161.

49 In January 2022[64], the European Parliament recommended building local slaughtering and processing facilities in more locations, and developing on-farm slaughter using mobile slaughterhouses, especially in remote areas (e.g. mountainous regions and islands). It suggested financing such solutions with existing EU funds. An EU farmers' interest group, Copa Cogeca, would prefer EU support to be granted to existing slaughterhouses to improve their facilities and animal management, rather than building more local slaughterhouses[65].

Animal production and slaughter costs differ between member states

50 Differences in costs between production stages (e.g. breeding and finishing) may influence animal transport. Piglets are relatively cheap in Denmark and Netherlands, which explains the high number transported to Germany from both of these countries[66]. Fattening pigs for slaughter (finishing) is more expensive in Germany than in Denmark, but the meat industry in Germany is more efficient due to lower labour costs[67].

51 Differences in slaughter costs per animal may encourage the transfer of slaughtering activities to more cost-effective member states. As an example, a study on the poultry sector estimated that the main components of slaughter costs are:

- labour (35 %);
- buildings and equipment (25 %);
- other costs (40 %), including transport, energy, water, inspection and packing[68].

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[64] European Parliament, Recommendation on protection of animals during transport (2022), paragraphs 39, 89, 105.

[65] Copa and Cogeca position on animal welfare during transport (2021), p. 2.

[66] Hoste, International comparison of pig production costs (2018), p. 16.

[67] Hoste, International comparison of pig production costs (2018), p. 16.

[68] Van Horne, Competitiveness of the EU poultry meat sector (2018), p. 22.

52 The costs in the poultry sector vary between member states. However, as all slaughterhouses in the EU use similar equipment, the study assumed that differences in slaughter costs in the poultry sector between countries were mainly the result of wage differences[69]. In general, the meat processing industry increasingly employs migrants, workers on temporary contracts and temporary workers recruited through external agencies[70].

53 There is no EU-wide publicly available database to provide an insight into animal production costs or slaughter costs by member state[71].

Animal suffering is not reflected in transportation costs or meat prices

54 Studies have calculated transport costs using different methods (by consignment, by animal, by kilometre)[72]. The cost of livestock transportation depends on a number of factors, such as the type of animal and the distance travelled. Labour costs account for a significant part of the total transport costs, as well as fuel, equipment, animal health checks and tolls[73].

55 There is no database to provide an insight into transport costs in individual EU member states. In the absence of harmonised data, we could not determine the contribution of transport costs to the final meat price paid by the consumer. However, the limited evidence and statements from industry suggest that transport costs generally account for a small fraction of the total retail meat price. A poultry study estimated that for breast fillets from EU producers sold in Germany, transport costs account for an average of two cents per kilogram, i.e. less than 1 % of the total price for the meat[74].

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69 Van Horne, Competitiveness of the EU poultry meat sector (2018), p. 22.

70 Eurofound, Meat processing workers (2018), pp. 6 and 13.

71 Commission, Fitness check of EU animal welfare legislation (2022), p. 7.

72 Van Wagenberg, The economics of animal transport (2019), p. 6; Commission, Study on shifting from transport of unweaned dairy calves over long distance to local rearing and fattening (2022), p. 39; Commission, Welfare of animals exported by road (2020), p. 5.

73 Van Wagenberg, The economics of animal transport (2019) p. 6.

74 Van Horne, Competitiveness of the EU poultry meat sector (2018), p. 6.

56 We found few data available on the financial consequences of animal welfare problems during transport. A 2015 study[75] estimated the costs related to wounds, lameness, death and other issues, for animals transported for production or slaughter. The lack of comprehensive data available to member states' authorities and the Commission hampers the development of incentive systems that could encourage transport companies to take steps to prevent animal welfare problems.

57 In Ireland, the financial impact of rejected meat in slaughterhouses due to poor animal welfare (e.g. resulting in skin lesions or bruises to limbs) is estimated at 43 % of the producers' profit margin, and poses a serious threat to the viability of pig farms[76]. However, in certain cases non-compliance with rules on the transport of unfit animals may bring financial gain for the producers (***Box 3***).

Box 3

Examples of reasons for sending unfit animals to slaughterhouses

A farmer's decision not to treat unfit cows prior to slaughter is due to the perceived lack of cost-effectiveness in doing so. It is generally more expensive for farmers to slaughter unfit cows on the farm than to send them to a slaughterhouse, while selling an animal to the slaughterhouse – even in an unfit state –may result in a financial gain.

In addition, sanctions do not generally act as a deterrent to poor practice or illegal activity, as operators perceive the sanctions to be low compared to the price obtained for the animal. For example, during one of its controls, the Commission found that a fine of €250 had been imposed for transporting a bull with a broken leg, when the approximate value of a slaughtered bull can be around €1 500.

Source: Commission, Study on economic models to prevent the transport of unfit end-of-career dairy cows (2022) page iv; Commission, Fitness check of EU animal welfare legislation (2022), p. 33; Commission, Overview report on systems to prevent the transport of unfit animals in the EU (2015), p. 9

[75] Van Wagenberg et al., Cost-benefit analysis of private certification schemes for animal welfare during long-distance transport in the EU (2015).

[76] Commission, Fitness check of EU animal welfare legislation (2022), p. 42.

Consumer preferences could affect animal transport

58 Consumer preferences influence animal transport[77]. Consumer demand for local meat, freshly slaughtered meat, or particular cuts of meat, together with seasonal demand for specific types of meat, are all factors that can affect the need for animal transport. An example is the import of lambs to Italy during the Easter period.

59 According to the 2022 Eurobarometer on food safety, when buying food most respondents (54 %) consider the cost of the product, 46 % look at the geographical origin, and fewer respondents consider the impact on the environment and climate (16 %) or ethical aspects, such as animal welfare (15 %)[78].

60 The Commission's study on animal welfare labelling found that although consumers claimed that they took account of animal welfare aspects when buying meat products, they were not always willing to pay higher prices for products with better animal welfare. Their willingness to pay extra increased if they were informed about animal farming conditions, and if they believed a product was of higher quality[79]. However, industry organisations believe that the market return is still not sufficient to be able to recover investments in animal welfare, because consumers are not aware of the standards according to which their food is produced, and therefore price remains the most important factor in the consumer food purchase choices[80].

61 In the future, consumers may play an important role in promoting change, since according to the Commission, they are expected to pay more attention to:

- production processes and product origin (e.g. local markets, organic and other quality schemes, animal welfare, and the environmental footprint);
- health considerations (lower or no intake of animal-based proteins);
- convenience (a shift from fresh meat towards more processed meat)[81].

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[77] EFA, A strategy to reduce and replace live animal transport (2019), p. 17.

[78] EFSA, Eurobarometer on food safety in the EU (2022), p. 8.

[79] Commission, Study on animal welfare labelling (2022), p. 110.

[80] Commission, Fitness check of EU animal welfare legislation (2022), p. 42.

[81] Commission, EU Agricultural outlook 2021-2031 (2021), p. 30.

62 By 2031, EU meat consumption is expected to decrease, contrary to the global trend. However, through its promotional campaigns, the Commission helps EU farmers and the food industry to sell their farm products, including meat (fresh, chilled and frozen) and meat preparations[82]. From a broader perspective, there is a relationship between the volume of meat consumed and the number of live animals transported[83].

[82] Article 5(1)(a) of Regulation (EU) No 1144/2014.

[83] IPOL, Patterns of livestock transport in the EU and to third countries (2021), pp. 13-14.

Trends in animal transport

There are no comprehensive centralised data on animal transport at EU level

63 Data on the transport of live animals are fragmented at EU level[84]. The main reason for this is that the EU legislation does not require member states to collect and report data on the transport of live animals. The Transport Regulation only requires member states to report on the inspections carried out[85]. In the context of preventing transmissible animal diseases, the Animal health law requires member states to record animal movements in national identification and registration databases[86]. These national databases were created for the purpose of animal identification, farm registration, and disease control. The Commission's view is that these databases are not appropriate for the extraction and analysis of data on animal transport.

64 There are two EU databases, that provide information on animal transport:

- **Comext**, a Eurostat database on international trade in goods, including live animals.
- **TRACES**, the Commission's online platform for sanitary and phytosanitary certification relating to intra-EU trade and the import and export of animals, food, feed and plants.

65 Animals may be moved to another member state, if accompanied by an animal health certificate[87]. These movements must be notified through the TRACES database[88]. Journeys to non-EU countries are recorded in TRACES only when animals pass through another member state. The Commission acknowledges that it does not have a complete picture of the animal exports that take place by road[89]. It is the same

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[84] EPRS, Protection of animals during transport (2021), p. 8; European Parliament, Resolution on the implementation of Council Regulation (EC) No 1/2005 (2019), paragraph 23.

[85] Article 27(2) of Regulation (EC) No 1/2005.

[86] Article 109 of Regulation (EU) No. 2016/429.

[87] Article 143(1) of Regulation No. 2016/429.

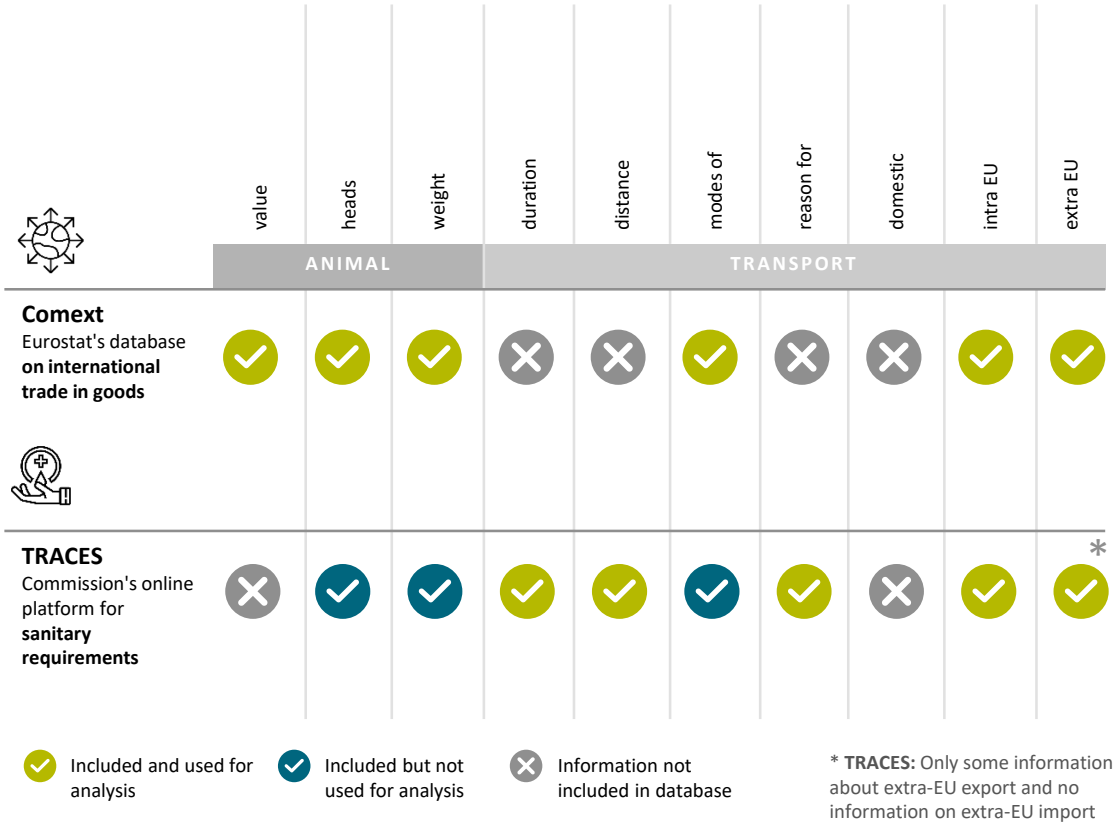
[88] Article 153(2) of Regulation No. 2016/429.

[89] Commission, Welfare of animals exported by road (2020), p. 13.

for other modes of transport. For exports by sea in 2018, the Commission estimated that TRACES recorded only 31.6 % of the cattle and 3.5 % of the sheep exported by livestock vessels from Croatia, Slovenia, Spain, France, Ireland, Portugal and Romania combined[90].

66 TRACES contains certain transport-related data, together with the results of official inspections. TRACES does not allow for a comprehensive overview of animal transport[91]. In addition, data on international trade in goods, including live animals, is available in Comext. Neither source of data captures domestic animal transport. ***Figure 8*** shows the relevant data from the two databases and our use of them for the present review.

Figure 8 – Comext and TRACES data used in our analysis



Source: ECA

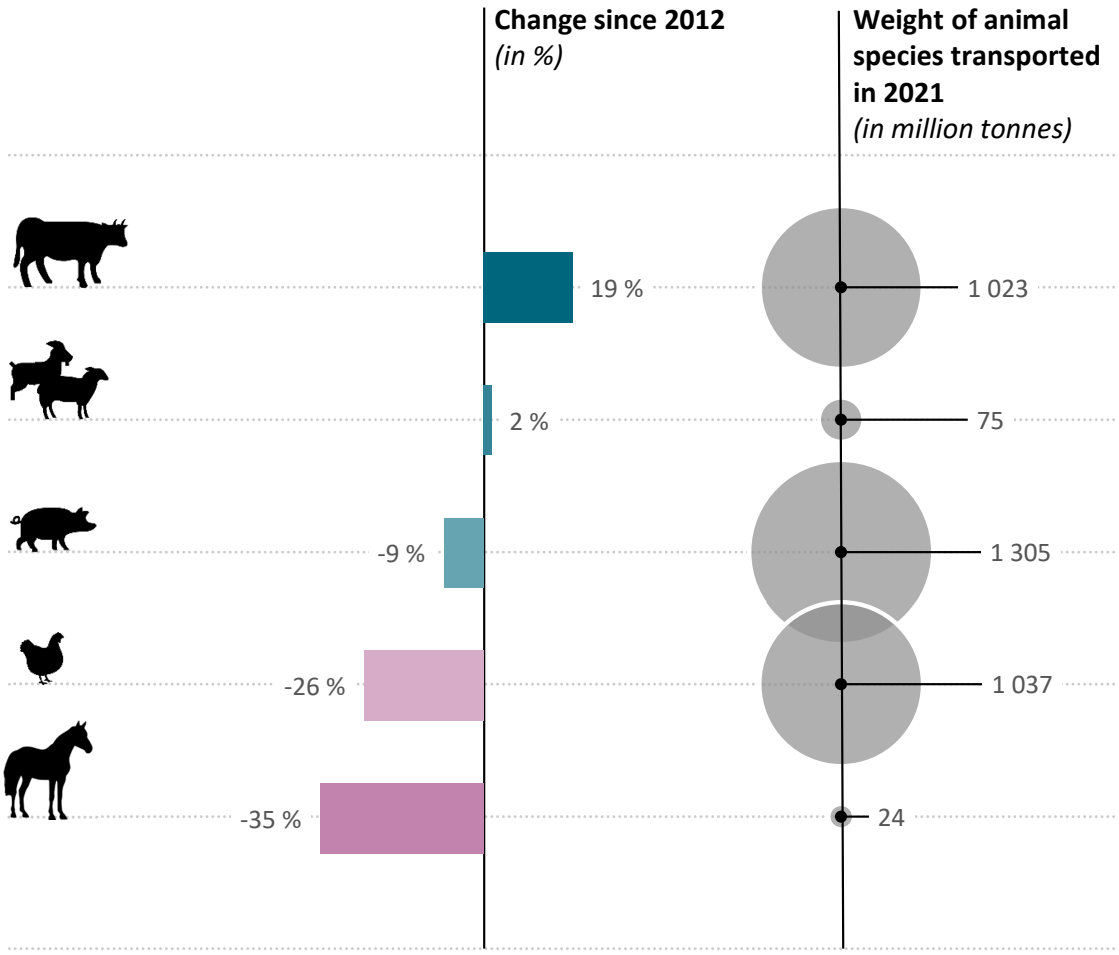
[90] Commission, Welfare of animals transported by sea (2020), p. 5.

[91] Commission, Fitness check of EU animal welfare legislation (2022), p. 32.

Trends in intra-EU and extra-EU animal transport

67 We analysed the available data on intra-EU trade of live animals over the 2012-2021 period. ***Figure 9*** shows the trends identified.

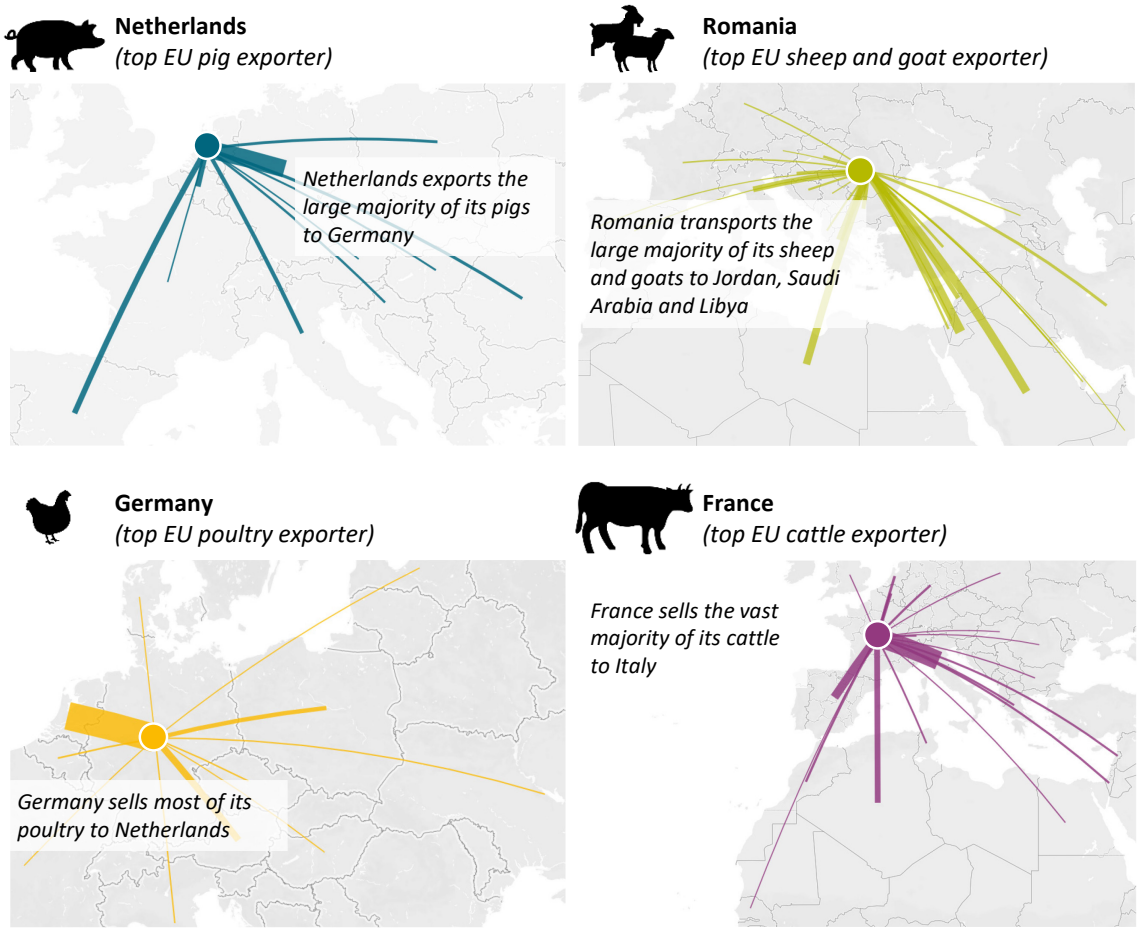
Figure 9 – Trends in intra-EU transport of live animals (2012-2021)



Source: ECA, based on Comext data (in weight)

68 ***Figure 10*** illustrates the countries to where the top exporters of each species transport their live animals. The main recipients are usually neighbouring countries, but animals are often transported much further afield, including outside the EU.

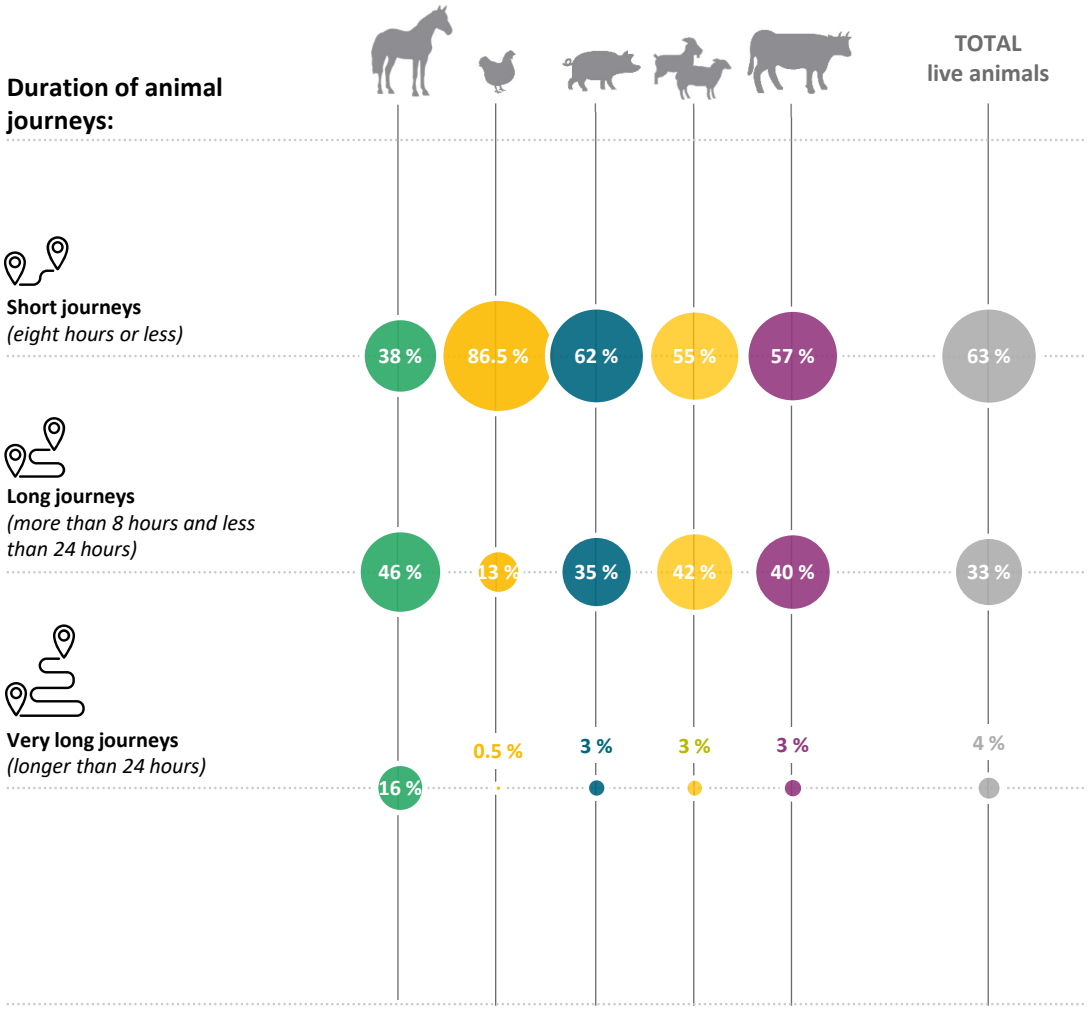
Figure 10 – Main EU exporters by animal species and their main destinations (intra-EU and extra-EU combined) for the 2017-2021 period



Source: ECA, based on Comext data (in cumulative weight)

69 In terms of duration, the majority of animal transport within the EU in 2017-2021 was comprised of short journeys (63 %), followed by long journeys (33 %) and very long journeys (4 %). Poultry are usually transported on short journeys (***Figure 11***), while horses tend to travel longer journeys.

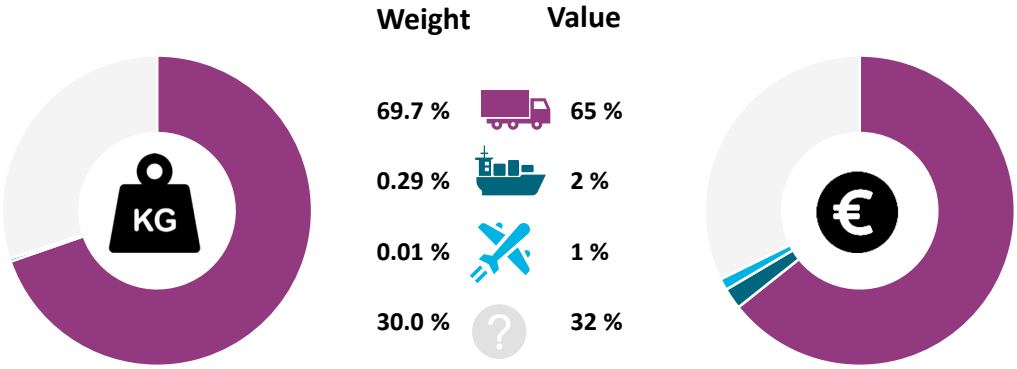
Figure 11 – Duration of animal journeys in intra-EU transport, by species (2017-2021)



Source: ECA, based on TRACES data (in consignments)

70 Most trade in live animals between member states takes place by road, accounting for 70 % in terms of weight and 64 % in terms of market value (***Figure 12***).

Figure 12 – Mode of transport for intra-EU trade of live animals (2017-2021)

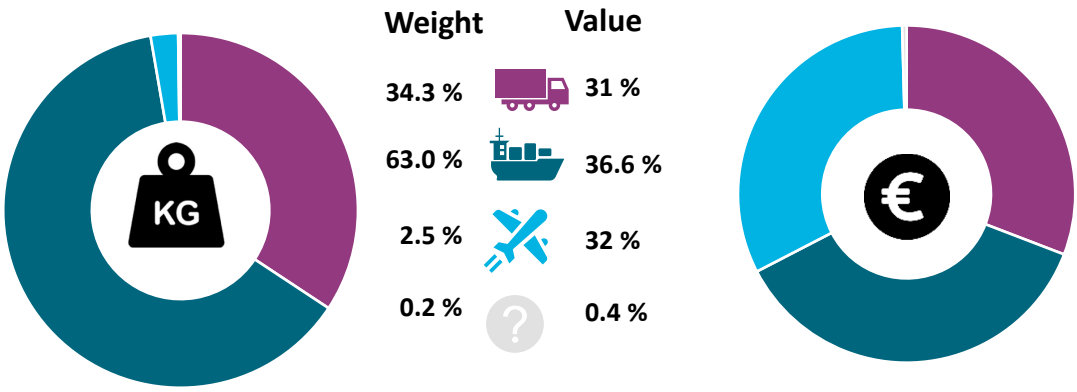


Around one third of the data registered in Comext (30.00 % in terms of weight, 32 % in terms of value) do not show the mode of transport

Source: ECA, based on Comext data

71 For exports outside the EU, most transport is by sea (63 %), although in terms of market value, it is equally distributed between the different modes of transport (***Figure 13***).

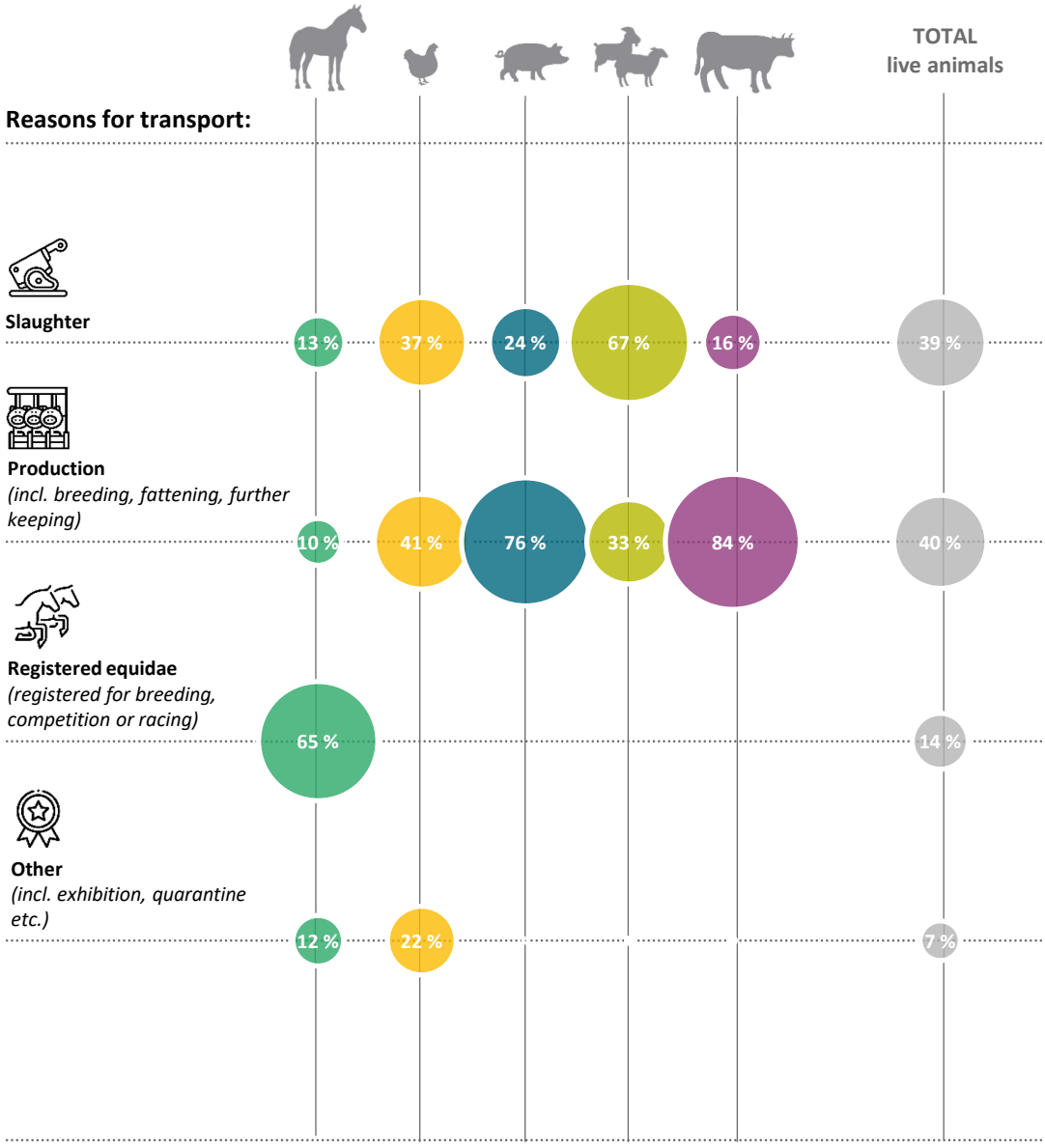
Figure 13 – Mode of transport for EU exports of live animals to non-EU countries (2017-2021)



Source: ECA, based on Comext data

72 In 2017-2021, live animals were mainly transported between member states for production purposes and for slaughter (***Figure 14***).

Figure 14 – Reasons for transport within the EU, by species (2017-2021)



Source: ECA, based on TRACES data

73 Over its lifetime, a single animal may be transported several times and for different reasons. ***Figure 15*** shows the example of a calf sold for meat production.

Figure 15 – Journey of a dairy calf sold for meat production

Note: This example is the result of the analysis of available literature and data. It does not show the journey of any specific animal.

Source: Commission, Study on shifting from transport of unweaned dairy calves over long distance to local rearing and fattening (2022), pp. 15, 19, 38; Comext data

New technologies to improve the monitoring of animal transport

74 In its 2019 resolution on the implementation of the Transport Regulation[92], the European Parliament called on the Commission to set common minimum tracing system standards for all journeys in order to facilitate more harmonised data collection.

75 A Commission report suggested that using an IT system or specific software to track the routes, journey times and other parameters of vehicles transporting animals could improve monitoring[93]. As part of its revision of the animal welfare legislation, the Commission is considering introducing new technologies to improve monitoring and enforcement. The two options under consideration are:

- 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; or
- to require member states to adopt such tools at national level[94].

76 In Sweden, researchers have shown that using digital tools could optimise the route planning and logistics of animal transport. Such an optimisation could potentially reduce transport distances[95].

77 The European Food Safety Agency (EFSA) deems that the assessment of animals' fitness for transport is of the utmost importance in contributing to animal welfare[96]. In 2015, the Commission launched a pilot project to develop and disseminate Guides to Good and Better Practice for animals transported within Europe and to non-EU countries for slaughter, fattening and breeding. Guides were developed for the

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92 European Parliament, Resolution on the implementation of Council Regulation (EC) No 1/2005 (2019), paragraph 23.

93 Commission, Evaluation of the EU Strategy for the Protection and Welfare of Animals 2012-2015 (2021), p. 26.

94 Commission, Inception Impact Assessment on animal welfare (2021), p. 4.

95 Håkansson et al., Improvement of animal welfare by strategic analysis and logistic optimisation of animal slaughter transportation (2016), p. 261.

96 EFSA, Welfare of cattle during transport (2022), pp. 27 and 91.

transport of cattle, horses, pigs, poultry and sheep[97]. In 2022, a Commission study on the transport of unfit dairy cows showed that a lack of understanding or different interpretations of the definition of "unfit" contributed to the transport of cows that were unfit for the journey[98].

78 The monitoring of animal welfare during transport is hampered by limited access to animals during transit[99]. In 2011, EFSA recommended developing better tools for monitoring animal welfare during long journeys, e.g.:

- incorporating temperature monitoring and warning systems, already required by the Transport Regulation for vehicles transporting animals for long journeys[100], into navigation systems;
- establishing common minimum standards to allow for a more harmonised assessment of the monitored parameters[101].

None of these EFSA recommendations has thus far been reflected in EU legislation. The lack of monitoring tools can have a negative impact on compliance and enforcement, and consequently, on animal welfare[102].

79 In 2022, EFSA suggested developing artificial intelligence-based cameras to monitor animal welfare during transport, sensors to detect the motion stress caused to animals by vehicle movements, and belts worn by horses to record their physiological data during transport. The technological tools available in this area have been used in scientific studies, but have not yet been applied in practice[103].

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97 Pilot project's website "Animal Transport Guides".

98 Commission, Study on economic models to prevent the transport of unfit end-of-career dairy cows (2022), p. iv.

99 EFSA, Welfare of cattle during transport (2022), p. 91.

100 Section 3 under Chapter VI of Annex I to Regulation (EC) No 1/2005.

101 EFSA, Scientific Opinion on Welfare of Animals during Transport (2011), p. 88.

102 Commission, Fitness check of EU animal welfare legislation (2022), p. 33.

103 EFSA, Welfare of cattle during transport (2022), pp. 18-19, 91.

Challenges and opportunities

80 The transport of live animals can have negative consequences on animal welfare. The EU has taken initiatives to improve animal welfare during transport, adopting legislation and supervising its enforcement by member states. Economic factors are the main driving force for animal transport. Differences in costs between member states and the need to exploit economies of scale have led to specialisation in the livestock sector and concentration in the slaughter sector, encouraging animal transport. Consumer preferences may also affect the willingness of economic operators to move live animals.

81 The negative consequences of transport on animal welfare could be mitigated by reducing the number and length of journeys, and improving the conditions for live animals during transport. In this review, we have identified several challenges and opportunities for EU policy makers and stakeholders, which could be taken into account for the upcoming revision of the EU legislation in this area.

82 **Identifying alternatives to live animal transport**. Transporting meat rather than live animals may be more sustainable in terms of both animal welfare and the impact on the environment and climate change, but from an economic point of view it might not always be profitable. Another way to partly reduce animal transport is to bring slaughter closer to the production site. Finding ways to promote and incentivise the development of local slaughterhouses and the use of mobile slaughter facilities could contribute to this purpose, although these tend to be small-scale solutions to meet specific needs and niche demand.

83 **Providing better information to consumers to help them make informed choices.** Consumer choices could play an important role in driving change. Consumers usually prefer locally produced meat, and some are willing to pay more if they are informed about good animal welfare conditions. However, the terminology used on food labels and the sheer number of labelling schemes in the member states often confuse consumers. More transparency and harmonisation, for example, through an EU animal welfare labelling system, could help consumers to make informed choices. Through its promotional campaigns, the Commission helps EU farmers and the food industry to sell their farm products, including meat (fresh, chilled and frozen) and meat preparations.

84 **Promoting structural changes to move towards a more sustainable food supply chain**. The European Green Deal and the Farm to Fork Strategy promote the transition towards a more sustainable food system Such a transition would require structural changes in the supply chain and in food consumption patterns. Well-designed financial initiatives could play a direct role by sending the right price signal and providing the right incentives for sustainable behaviour from producers, users and consumers.

85 **Assigning monetary value to animal suffering and taking account of this in the cost of transport and in the price of meat.** The quality of animal welfare is not taken into account in the cost of transport or the price of meat. Developing a methodology to price-in animal suffering could be an opportunity to introduce incentive systems, encouraging transport companies to prevent animal welfare problems, and minimise the economic incentives of non-compliance.

86 **Obtaining a comprehensive centralised overview of animal transport, monitoring the conditions of live animals during transport, and promoting logistical optimisation**. Member states collect information on animal movements for disease control purposes. The Commission has no comprehensive centralised data on animal transport. An EU level IT system to track all journeys including domestic journeys of live animals, could improve monitoring and allow the Commission to obtain comprehensive centralised data on animal transfers. The use of digital tools could also optimise the planning and logistics of animal transport. The monitoring of animal welfare during transport is hampered by limited access to animals in transit. The technological tools available in this area have been used in scientific studies, but have not yet been applied in practice. New technologies such as cameras and sensors could contribute to measuring and monitoring animal welfare during transport.

This review was adopted by Chamber I, headed by Mrs Joëlle Elvinger, Member of the Court of Auditors, in Luxembourg at its meeting of 1 March 2023.

For the Court of Auditors

Tony Murphy
President

Annex

Annex I – Key publications reviewed

Baltussen et al., Sustainable production: transporting animals or meat? (2009)

Baltussen et al., Transport of live animals versus meat (2017)

Bittlmayer, Local Characteristics of Pig Production in Germany and Bavaria (2019)

Commission, Report on the impact of Council Regulation (EC) No 1/2005 on the protection of animals during transport (2011)

Commission, Overview report on systems to prevent the transport of unfit animals in the EU (2015)

Commission, The future of the livestock sector (2020)

Commission, Welfare of animals exported by road (2020)

Commission, Welfare of animals transported by sea (2020)

Commission, Report evaluating the mandatory indication of the country of origin or place of provenance for meat of swine, poultry, sheep and goat (2021)

Commission, EU Agricultural outlook 2021-2031 (2021)

Commission, Fitness check of EU animal welfare legislation (2022)

Commission, Study on animal welfare labelling (2022)

Commission, Study on CAP Measures and Instruments Promoting Animal Welfare and Reduction of Antimicrobials Use (2022)

Commission, Study on shifting from transport of unweaned dairy calves over long distance to local rearing and fattening (2022)

Commission, Study on economic models to prevent the transport of unfit end-of-career dairy cows (2022)

ECA, special report 31/2018: “Animal welfare in the EU: closing the gap between ambitious goals and practical implementation”

EFSA, Scientific Opinion on Welfare of Animals during Transport (2011)

EFSA, Welfare of cattle during transport (2022)

EFSA, Eurobarometer on food safety in the EU (2022)

EPRS, Animal welfare on the farm – ex-post evaluation of the EU legislation: Prospects for animal welfare labelling at EU level (2021)

EFA, A strategy to reduce and replace live animal transport (2019)

EFA, Live animal transport (2021)

Eurofound, Meat processing workers (2018)

European Parliament, Resolution on the protection of animals during transport (2012)

European Parliament, Resolution on the implementation of Council Regulation (EC) No 1/2005 (2019)

European Parliament, 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 (2021)

Håkansson et al., Improvement of animal welfare by strategic analysis and logistic optimisation of animal slaughter transportation (2016)

Hoste, International comparison of pig production costs (2018)

Hultgren, Avoiding live-animal transport to slaughter: mobile abattoirs (2022)

IPOL, Patterns of livestock transport in the EU and to third countries (2021)

Van Horne, Competitiveness of the EU poultry meat sector (2018)

Van Wagenberg et al., Cost-benefit analysis of private certification schemes for animal welfare during long-distance transport in the EU (2015)

Van Wagenberg, The economics of animal transport (2019)

Van Wagenberg, Baltussen, Socio-economic reasons for long-distance cross-border transport of animals in the EU (2021)

Abbreviations

ANIT: European Parliament's committee of inquiry on the protection of animals during transport

CAP: common agricultural policy

EFA: Eurogroup for Animals

EFSA: European Food Safety Agency

EPRS: European Parliamentary Research Service

IPOL: European Parliament's Directorate-General for Internal Policies of the Union

NGO: non-governmental organisation

Glossary

Breeding: Keeping animals to produce offspring.

Comext: Eurostat's database on the EU's trade in goods, both among EU member states and with non-EU countries.

Consignment: A quantity of goods covered by a single certificate or document and transported from the same premises of origin to the same destination by the same mode of transport.

Dairy calf: A young cow bred to produce milk.

Fattening: Keeping animals to produce meat.

Finishing: The last stage of fattening, in preparation for slaughter.

TRACES: The Commission's online platform with information about sanitary and phytosanitary certification for trade in animals, food and feed of both animal and non-animal origin and plants, both within the EU and with other countries.

ECA team

This report was adopted by Chamber I Sustainable use of natural resources, headed by ECA Member Joelle Elvinger. The task was led by ECA Member Eva Lindström, supported by Kristina Maksinen, Head of Private Office, Katharina Bryan, former Head of Private Office, Johan Stalhammar, Private Office Attaché, Elena Graziuso, Policy Assistant and Andrzej Robaszewski, Economist in Cabinet; Emmanuel Rauch, Principal Manager; Michela Lanzutti, Head of Task; Michal Szwed, Magdeline Owusu Agyemang and Zvonimir Novoselic, Auditors. Marika Meisenzahl provided graphical support. Stamatis Kalogirou and Lukasz Kolodziej provided data analysis and dashboard creation support. Agata Sylwestrzak and Laura McMillan provided linguistic support.

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Our review describes the main factors surrounding the transport of live animals, and illustrates the trends in animal transport. Each year, billions of live animals are transported by road, sea, rail and air within, and to and from, the EU, for a number of reasons, such as breeding, fattening or slaughter. The EU has adopted legislation on animal protection during transport, but the European Commission and academic studies have detected weaknesses. Future challenges and opportunities lie in identifying alternatives to live animal transport, providing better information to consumers, promoting structural changes towards a more sustainable food supply chain, assigning monetary value to animal suffering and incorporating it into transport costs and meat prices, and promoting the use of new technologies.

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