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

European Implementation Assessment

STUDY

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European implementation assessment

The European Union (EU) has a long history of regulating the welfare of farmed animals. Currently, the 'on-farm' aspects of animal welfare (AW) are regulated by five directives adopted by the Council of the EU. The European Parliament is scrutinising the implementation of the EU legislation through a dedicated report (with the Agriculture and Rural Development Committee (AGRI) taking the lead and the Environment, Public Health and Food Safety Committee (ENVI) giving its opinion). This European Implementation Assessment (EIA), aimed at providing evidence in support of the committees' work on the report, shows that the implementation of the EU *acquis* has been challenging. Based on a large data collection programme, it presents findings on the implementation of the EU legislation against the standard criteria for ex-post evaluation, namely relevance, effectiveness, efficiency, coherence and EU added value. The EIA also maps and assesses AW labelling systems operating across the EU in terms of their design (including their scientific substantiation), regulatory status and functioning (including their effectiveness, efficiency and transparency). Furthermore, the paper analyses the prospects for a possible introduction of AW labelling at EU level.

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AUTHOR(S)

1. The section introducing the research project in terms of context, scope, methodology and added value has been drawn up by Ekaterina Karamfilova from the Ex-post Evaluation Unit of the Directorate for Impact Assessment and European Added Value, within the Directorate-General for Parliamentary Research Services (EPRS) of the Secretariat of the European Parliament.

To contact the authors, please email: EPRS-ExPostEvaluation@ep.europa.eu.

2. The 'Research Paper: Implementation of EU legislation on 'on-farm' animal welfare. Potential EU added value from the introduction of animal welfare labelling requirements at EU level', which is an integral part of this European Implementation Assessment, has been drawn up by Arcadia International (Francesco Montanari, Julien Étienne, Inês Ferreira, Ana Oliveira, and Filippa Löfström), under the scientific guidance of Prof. Charlotte Berg (Swedish University of Agricultural Sciences, Department of Animal Environment and Health), and with management support from the Austrian Institute for Regional Studies and Spatial Planning (ÖIR) (Erich Dallhammer, Arndt Münch), at the request of the Ex-post Evaluation Unit of the Directorate for Impact Assessment and European Added Value, within the Directorate-General for Parliamentary Research Services (EPRS) of the Secretariat of the European Parliament.

ADMINISTRATOR RESPONSIBLE

Ekaterina Karamfilova, Ex-post Evaluation Unit, Directorate for Impact Assessment and European Added Value, within the Directorate-General for Parliamentary Research Services (EPRS) of the Secretariat of the European Parliament

To contact the publisher, please e-mail EPRS-ExPostEvaluation@ep.europa.eu.

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eprs@ep.europa.eu
http://www.eprs.ep.parl.union.eu (intranet)
http://www.europarl.europa.eu/thinktank (internet)
http://epthinktank.eu (blog)

Executive summary

This document presents the main findings of the European Implementation Assessment published by the Ex-post Evaluation Unit of the European Parliamentary Research Service (EPRS) in support of an ongoing implementation report by the European Parliament's Committee on Agriculture and Rural Development (AGRI) on animal welfare (AW) on the farm, upon which the Committee on the Environment, Public Health and Food Safety (ENVI) gives an opinion. This research project has been conducted by Arcadia International and the Austrian Institute for Regional Studies and Spatial Planning (ÖIR) between December 2020 and May 2021.

Under Research Task 1, which combined primary and secondary data collection, the research team studied the implementation of five EU directives on on-farm AW – one General Directive covering all farmed animal species [1] and four species-specific directives with specific rules covering pigs, calves, broilers and laying hens. [2] The limited timeframe for the research project did not allow for inclusion of all farmed animal species and EU Member States in its scope, therefore, 7 species [3] and 11 Member States [4] were covered. The available evidence was assessed against the standard set of criteria for ex-post evaluation, namely relevance, effectiveness, efficiency, coherence and EU added value. Impacts have also been studied. The main findings under Research Task 1 are:

- On the **relevance** of the legislation, it was found that, of those stakeholders who felt in a position to comment on whether the legislation was aligned or not with the state of scientific knowledge, most agreed that it was outdated and in need of revision. The legislation is not recent, and several new findings have emerged that establish bases for revision. The European Food Safety Authority (EFSA) has been mandated by the European Commission to issue opinions that will contribute to the review of the legislation in this respect. While a number of stakeholders interviewed (representatives of farmers in particular) considered the current legislation fit for purpose and written in an appropriate manner, most of them (National Competent Authorities (NCAs), non-governmental organisations (NGOs), experts, some industry representatives) considered the wording of the legislation is often inadequate, being too vague, or providing exceptions or derogations to requirements. As a result, a number of undesirable practices have continued to be allowed. There was a shared sense among many stakeholders that fully specified requirements may not always be feasible, nor desirable, as this could impose excessive burden and rigidity on production sectors that are very diverse.
- On the **effectiveness** of the legislation, a mixed picture emerges from the data: some directives have achieved desirable structural changes to the manner animals are reared (the Laying Hens, Pigs (for pregnant sows) and Calves Directives). In contrast, the General Directive and the Broilers Directive have been said to have achieved only small impacts. The Pigs Directive has also failed to achieve some of its objectives, as mutilations and cramped and stressful housing conditions without enrichment remain the norm for pigs in many Member States. With the exception of the Laying Hens and Calves directives, a combination of derogations, exceptions, vague requirements or the absence of specific protections in EU legislation have existed in parallel to various national legislations, all of which have been blamed by many stakeholders from different categories for distorting competition. The evidence on non-compliance, which is limited and of varying quality, points to patterns of non-compliance that are common to some countries and sectors, as well as national and sectoral specificities. The reasons for non-compliance are multifarious. Some of them are common to many Member States. The outlook of a leading north and west and a lagging south and east has begun

to evolve, due to greater awareness, political commitment and activism in such countries as Italy, France and Czechia. EU legislation and official controls have more often than not been secondary to other factors when it comes to explaining improvements on the ground.

- On **impacts,** the General Directive has generally been the least impactful of the directives in scope. Due to the vague nature of the requirements and the large margins of interpretation it has allowed, links between improvements on the ground and the directive have been impossible to characterise. The absence of species-specific protections for a number of species was seen by most stakeholders as a key problem for dairy cows, broiler and hen breeders, rabbits, sheep and turkeys. The peculiar constraints of each species and of the farmers concerned were highlighted as calling for a specific approach to each species, rather than a common one. The Broilers Directive appears to have been the least impactful of the species-specific directives, in the sense that it did not fundamentally alter production systems, although it incorporated an animal-centred approach to the welfare of broilers and has paved the way for the greater use of animal-based indicators in welfare assessments on the farm. The evidence available suggests that the implementation costs it has generated for the sector may have been a fraction of those that were incurred by the eggs, veal meat and pigs sectors to comply with the other directives. In those three sectors, the directives have driven significant changes to buildings and equipment, and contributed to some changes to the number and size of farms in the sector. While working conditions were said to have improved for laying hen and veal meat farmers as a result, this was not necessarily the case for pig farmers.
- On **efficiency**, the evidence, albeit limited, indicates that the costs of implementing the legislation were generally justified given the impacts they had, although there are strong views to the contrary from a few industry stakeholders.
- On **coherence**, the legislation was found to be broadly coherent with animal health (AH) legislation, although greater integration was called for between the two. There were strong and consistent views among stakeholders to suggest that there should be better integration between AW legislation and international trade policy, aquaculture policy, policy on fair prices within value chains, and the common agriculture policy (CAP). There were disagreements on the extent to which the legislation on AW is coherent with environmental policy.
- On **EU added-value**, there was a general agreement that the directives have added value by providing a common framework of rules, although more needs to be done to address divergence in their implementation and consumer demands on AW within the EU.

The research conducted under Research Task 1 encountered significant **obstacles in terms of data availability and data quality**, especially as regards compliance rates ('effectiveness' of the implementation). Getting a clear sense of the reality of practices on the ground for the wide range of businesses, species and issues in scope would be challenging in any circumstances. In the context of AW legislation, this challenge is made far greater by two main factors. Firstly, the legislation does not specify a number of requirements (how they should be complied with or monitored) and therefore leaves much discretion to Member States to specify numerous requirements and how they would assess them. This ample space for different approaches and sometimes for subjectivity, leads to inconsistent monitoring and enforcement across the EU. Secondly, Member States have different approaches to resourcing and prioritising official controls, and to making information on those controls and their outcomes publicly available. Sometimes, and particularly for species which are not subject to specific regulations (such as rabbits), there are no or very few official controls. There are therefore major data gaps and uncertainties (including on quality) regarding the available data.

Expert views and an assessment of stakeholder opinions can, to some extent, address these issues, but greater margins of uncertainty than would be desirable persist nonetheless. This is a regulatory problem with negative implications at every stage of the policy cycle – from policy design, monitoring and evaluation of the implementation of the legislation, to its revision. For the above reason, the only firm recommendation that could be provided in the context of Research Task 1 concerns the European Commission, NCAs and business organisations, which should work collaboratively on ways to tackle this information gap. The findings of this research project could serve as a useful basis for future work to further specify the scope of the data problem[5] and its various regulatory aspects, which need to be addressed as a matter of priority.

Under **Research Task 2**, which also combined primary and secondary data collection, existing labelling systems operating across the EU market have been identified. In total, 24 such systems (concentrated in nine Member States)[6] have been identified and analysed by the research team in terms of their design (including their scientific substantiation), regulatory status and functioning (including their effectiveness, efficiency and transparency). Furthermore, the project analysed the potential added value stemming from the introduction of mandatory AW labelling requirements at EU level. Some of the most important conclusions under Research Task 2 are:

- The majority of the systems analysed have been initiated by the private sector, while the remainder is the result of public-private partnerships or, to a lesser extent, of initiatives by NCAs in some EU Member States.
- All systems analysed are voluntary in nature, thus leaving the choice to join them to food business operators. The label's standard of most systems includes other aspects related to the product besides AW, among which traceability, sustainability and health are the most recurrent. In terms of animal species, pigs, broilers and dairy cows are those most frequently labelled. In terms of food products, the systems cover primarily fresh, frozen and processed meat. The systems analysed vary greatly in terms of functioning and design. Despite this heterogeneity, the features which are common to most systems are: a single-tier design; the fact that AW requirements laid down in the label standards are based on private rules, among other things; and the independence of the audits to verify compliance with that standard.
- A comparative assessment of a more limited sample of labelling systems (n=11) has shown that their level of scientific substantiation and transparency can be considered satisfactory, overall. However, further research is needed to determine the effectiveness of those systems when considering, in particular, their impact on food businesses or in relation to consumer understanding of animal production systems. Likewise, future research may further investigate their efficiency, namely to establish to what extent costs and benefits deriving from the participation by food businesses in such systems are equitably shared across the relevant product chain.
- Concerning the possible added value from the introduction of mandatory EU AW labelling requirements for animal-based products, data collection activities carried out during the research indicate that, overall, EU and national stakeholders hold different views in this respect. Currently, the prospect of AW mandatory labelling rules at EU level does not encounter the support of EU business stakeholders across all categories and national farmers' organisations, the main reason being the economic implications stemming from their implementation for food business operators and, above all, for farmers. Besides, while mandatory rules could ensure a greater level playing field across the EU market, they could have the effect of discouraging, if not preventing, private initiatives oriented to product differentiation from using AW as a market leverage. Likewise, most Member States are not in favour of the introduction of compulsory

requirements in this area, supporting EU harmonisation through a voluntary approach instead. Reasons to support a non-binding approach emerging from the research include implementation costs for food business operators and NCAs alike, challenges in enforcing AW labelling requirements and a possible generalised loss of competitiveness in the EU agri-food sector.

Conversely, AW NGOs are in favour of the establishment of compulsory AW labelling rules. Among the benefits they attribute to an EU-wide label improvements in AW practices across the EU are expected through a market-driven approach, greater market transparency and consumer empowerment, as well as new business opportunities for farmers and other food business operators through the commercialisation of AW-friendly products.

Future research in this area should examine the possible financial impacts of the introduction of mandatory labelling requirements at EU level more closely, among other things, drawing from the experience of the public AW labelling systems that have been introduced over the last few years in some Member States.

- The evidence collected during the research indicates that, at this stage of the policy discussion, a voluntary approach to AW labelling at EU level is more likely to encounter the support of a larger stakeholder base in the EU. In terms of design, stakeholders generally consider that an EU label should set out criteria that are species-specific, cover all the stages of the life of the animal and, with the exception of the EU meat industry sector, strictly focus on AW aspects. Conversely, no strict consensus exists, as of yet, as to whether the EU label should be designed as a single- or as a multi-tier labelling system.

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1. Context of the research project

The European Union has a long history of regulating the welfare of farmed animals at all stages of their life, namely, on the farm, during transport and at slaughter.

The first EU-level rules on AW concerned slaughter[7] and were adopted as early as in 1974 by the then European Economic Community (EEC), i.e. long before AW was first acknowledged by the EU founding Treaties in 1992 (see below). In 1976, the European Convention for the protection of animals kept for farming purposes[8] was adopted under the auspices of the Council of Europe. Back to the European Union, in 1998, the Council adopted Directive 98/58/EC on the protection of animals kept for farming purposes,[9] whose provisions on AW on the farm are largely based on the latter Convention. The first animal species covered by specific 'on the farm' AW rules were laying hens kept in battery cages in 1986[10] (currently covered by Council Directive 1999/74/EC),[11] followed in 1991 by rules on on-farm AW of calves[12] and pigs[13] (updated by Council Directive 2008/119/EC on calves[14] (in force) and Council Directive 2008/120/EC on pigs[15] (in force) respectively). The first 'on the farm' AW rules on chickens kept for meat production were adopted in 2007 (Council Directive 2007/43/EC,[16] in force). Rules on AW during transport were first adopted in 1977[17] and last updated in 2005.[18] The 1974 rules on slaughter were updated in 1993,[19] but eventually a new set of rules was adopted in 2009.[20] It is of note that the EU AW rules, including those currently in force, were adopted by the Council of the EU alone, i.e. the European Parliament was not involved as a co-legislator.

AW was first integrated into the founding EU Treaties as late as in 1992, when the Treaty on the European Union[21] (Maastricht Treaty), and in particular the Declaration on the protection of animals attached to this Treaty, were signed. Later, this declaration was upgraded to a protocol on the protection and welfare of animals, included in the Amsterdam revision[22] of the founding Treaties signed in 1997. The protocol, which has legal status, recognised that animals 'are sentient beings' for the first time. The protocol also obliged the EU institutions and Member States to take account of AW considerations and was later, after the 2007 Lisbon revision[23] of the Treaties, integrated into Article 13 of the Treaty on the Functioning of the European Union (TFEU).[24] In particular, Article 13 (TFEU) requires that, when designing and implementing EU policies in a number of areas, the EU and its Member States must pay full regard to the welfare requirements of animals because they 'are sentient beings'. The policy areas concerned are: agriculture, fisheries, transport, internal market, research and technological development and space. Article 13 TFEU also requires that the EU and its Member States respect the legislative or administrative provisions and customs of the Member States relating in particular to religious rites, cultural traditions and regional heritage.

The European Parliament has repeatedly addressed the issue of AW, including the implementation of the relevant EU legislation. For example, as regards transport-related aspects, the Parliament adopted a resolution on the implementation of Council Regulation (EC) No 1/2005 on the protection of animals during transport within and outside the EU[25] in February 2019, whose recommendations were, among other things, based on the findings of a topical European Implementation Assessment[26] published by EPRS in 2018. Furthermore, in its current (9th) legislature, the European Parliament established a Committee of inquiry on the protection of animals during transport (ANIT),[27] from which a report is expected in the second half of 2021. In addition, on 15 April 2021, the parliamentary standing Committees on agriculture and rural development (AGRI) and on petitions (PETI) held a joint hearing[28] on the European Citizens' Initiative 'End the Cage Age'[29] to which the European Parliament reacted with a resolution adopted on 10 June 2021.[30] The Parliament has also adopted several resolutions in previous legislatures concerning animal welfare such as, for example, the resolution of July 2012 on the EU strategy for the protection and welfare of animals[31] and the resolution of November 2015 on a new animal

welfare strategy for 2016-2020.[32] The European Parliament has also received several petitions and citizens' enquiries related to animal welfare.

An essential part of Parliament's scrutiny of the implementation of the EU legislation on AW is an implementation report by the AGRI committee, which has a particular focus on AW 'on the farm'. The European Parliament's Committee on the Environment, Public Health and Food Safety (ENVI) provides an opinion on this report. This EPRS study, from the 'European Implementation Assessment' (EIA) series, has been prepared in support of the work of the European Parliament on this implementation report. The EIA presents original findings on the implementation of the EU legislation on 'on-farm' AW, which falls strictly within the scope of the implementation report, and, on the potential EU added value from the introduction of AW labelling requirements at EU level.

The following sections give a brief overview of the scope, methodology and added value of the research project, carried out between December 2020 and May 2021, by the Austrian Institute for Regional Studies and Spatial Planning (ÖIR) and Arcadia International at the request of the Ex-post Evaluation Unit of EPRS. The results of the project are published in the research paper entitled: 'Implementation of EU legislation on on-farm AW. Potential EU added value from the introduction of AW labelling requirements at EU level', which is an integral part of this EIA.

2. Scope and methodology of the research project

2.1. Research task 1 – Implementation of the EU legislation on 'on-farm' animal welfare

This first research task covers the whole EU *acquis* in force on AW on the farm,[33] which includes Directive 98/58/EC concerning the protection of animals kept for farming purposes (commonly referred to as the General Directive, which applies to all animal species), and the following species-specific directives: Directive 1999/74/EC laying down minimum standards for the protection of laying hens, Directive 2007/43/EC laying down minimum rules for the protection of chickens kept for meat production, Directive 2008/119/EC laying down minimum standards for the protection of calves, and Directive 2008/120/EC laying down minimum standards for the protection of pigs.

Within the very limited timeframe of the research project, it was not possible to cover all animal farmed species across all EU Member States. Therefore, for the research project to be feasible, its scope had to be restricted to:

- broilers, laying hens, pigs and calves under the four species-specific directives;
- cows (including beef cattle and dairy cows), sheep and rabbits under the General Directive,
- a sample of Member States, selected based on the criterion of the five EU Member States that are the biggest producers of each of the above animal species.

In total, 7 animal species and 11 EU Member States[34] were thus included in the sample under Research Task 1.

For this research task, the project team relied on secondary data from available information sources and primary data collected for the needs of the research project, using the semi-structured interview method, in which a large number of respondents representing stakeholders at both EU and national level took part. Auditing was not used as a data collection tool because neither EPRS nor the external team have auditing powers.

The available evidence has been analysed against the standard set of criteria for ex-post evaluation used in the context of the EU better regulation agenda, namely relevance, effectiveness, efficiency, coherence and EU added value.[35] Furthermore, the impacts of the legislation's implementation were analysed. The main elements included in the scope of Research Task 1 are briefly presented below.

Under the **relevance** criterion, the team analysed, among other things, whether the directives in scope set appropriate objectives and requirements on AW, in accordance with evolving scientific evidence. Under the same criterion, the team also checked whether the directives contain loopholes or unclearly defined provisions, which negatively affect their implementation in practice and the achievement of their objectives. Challenges regarding both aspects were identified. The findings on relevance may be consulted under section 4.1 of the research paper.

Under the **effectiveness** criterion, the main question was whether the objectives of the directives are being achieved as a result of the implementation of the directives. Furthermore, the team analysed good and bad implementation practices and the relevant root causes that lead to both compliance and non-compliance. A data gap on non-compliance with the EU AW legislation, resulting from problems related to monitoring and enforcement at national level, was noted and the reasons behind this were explained. This is a regulatory problem with negative implications at every stage of the policy cycle – from policy design, monitoring and evaluation of the implementation of the legislation to the relaunch of the policy cycle by the revision of the legislation. The findings on effectiveness can be consulted under section 4.2 of the research paper.

Besides the **impacts** of the implementation of the EU AW on-farm legislation on the welfare of farmed animals, the research project also identified relevant economic, social and administrative impacts, as well as impacts on public health, to the extent possible considering the availability of data on each of the five pieces of EU legislation in scope. In the context of the General Directive, and especially as regards the impacts it has produced on animal species currently not covered by species-specific directives, the team aimed to identify which of the three animal species examined by this project under the General Directive (but also more broadly, from those farmed across the EU in highest numbers) are most in need of coverage from species-specific rules, as is already the case for broilers, laying hens, calves and pigs. The findings on impacts are available under section 4.3 of the research paper.

As regards the **efficiency** criterion, and similarly to other policy fields, quantitative data is scarce and therefore the assessment of the cost-benefit ratio inherent to the implementation of the EU AW on on-farm legislation was difficult. The findings on efficiency can be consulted under section 4.4 of the research paper.

Under the **coherence** criterion, the research team checked for incoherence within each of the five directives in scope, and between the directives and other relevant EU policies, such as on animal health, trade, the environment and the CAP. The findings on coherence may be consulted under section 4.5 of the research paper.

Under the **EU added value** criterion, the project aimed at establishing the added value of the directives and their implementation, compared to what is likely to have been achieved by Member States, if acting on their own (i.e. if the five EU directives had neither been in place nor implemented). The findings on EU added value are available under section 4.6 of the research paper.

2.2. Research task 2 – Potential EU added value from the introduction of animal welfare labelling requirements at EU level

Under this second research task, the team mapped existing labelling systems operating across the EU. Although labelling is not strictly included in the scope of the implementation report, during the preparatory phase of the research project, it was considered that studying labelling is indeed pertinent, given that it could have an impact on AW practices, which do fall in the scope of the report. As a matter of principle, the task covered all farmed animal species; and all phases of their life, on the farm, during transport and at slaughter; and all EU Member States in which such systems exist (or are under development). In total, 24 such systems (concentrated in 9 Member States)[36] have been identified and analysed by the research team in terms of their design (including their scientific substantiation), regulatory status and functioning (including their effectiveness, efficiency and transparency). Furthermore, the project analysed the potential added value stemming from the introduction of mandatory AW labelling requirements at EU level. The findings under Research task 2 are available in section 5 of the research paper.

The labelling systems examined were identified based on the results of an online survey targeting their owners/managers. The online survey was designed and carried out especially for the needs of this research project. The data collected via the survey tool was checked and validated via follow-up interviews with a sample of the respondents to the survey, using the semi-structured interview method. In addition, the team relied for their analytical conclusions on extensive secondary data collected from available information sources and primary data collected with the method of the semi-structured interview with stakeholders at both EU and national level. As for Research Task 1, the research team was not in a position to use auditing techniques for data collection, although a focus has been placed on the practices of auditing (internal and/or external) of the identified labelling systems.

The main conclusions of the research paper are summarised in its section 6.

3. Added value of the research project

Although limited in scope (only on-farm AW was studied for a limited number of farmed animal species and Member States), the findings of the ex-post evaluation under Research Task 1, conducted following the principles established by the EU better regulation agenda,[37] contribute to a better understanding of the implementation of the applicable EU AW legislation in scope. In particular, the large primary data collection programme run by the research team at both EU and national level allowed the team to cross-check and complement the information already available in written sources.

Furthermore, Research task 2 represents a first attempt at presenting a comprehensive picture of the existing AW labelling systems across the EU market and the manner in which they operate. It also provides a state-of-the-art view of the prospects of introducing mandatory AW labelling requirements at EU level, based on current stakeholders' views.

The findings of this research paper (under both research tasks) are presented in a way that makes it clear what stakes each specific party - with a vested interested in AW – holds. This research paper therefore provides a transparent account of the views expressed by stakeholders, and of clear disagreements when documented, which is another contribution of the research project to transparent EU policy-making on AW, in line with the EU better regulation agenda.

This EIA would therefore be of added value to the work of the European Parliament's committees involved in the consideration of the implementation report (AGRI and ENVI). It could also provide valuable evidence for the European Parliament when taking part in ongoing and/or future discussions on the prospects of introducing AW labelling at EU level. Furthermore, the transport-related aspects of labelling, covered under the second Research Task, could be of interest to the European Parliament's ANIT Committee.

In addition, this EIA could also feed into the ongoing work of the European Commission's DG SANTE on several initiatives carried out under the Farm to Fork Strategy[38] announced in May 2020 in the context of the European Green Deal, [39] namely the Fitness check (evaluation) on the implementation of the whole EU AW *acquis*, expected towards the end of 2021,[40] and the related revision of the legislation expected in 2023,[41] as well as its work on AW labelling.

ENDNOTES

1 Directive 98/58/EC concerning the protection of animals kept for farming purposes (commonly referred to as the 'general' directive)

2 Directive 1999/74/EC laying down minimum standards for the protection of laying hens, Directive 2007/43/EC laying down minimum rules for the protection of chickens kept for meat production, Directive 2008/119/EC laying down minimum standards for the protection of calves, and Directive 2008/120/EC laying down minimum standards for the protection of pigs

3 Broilers, laying hens, pigs, calves, beef cattle and dairy cows, sheep and rabbits.

4 These Member States are: Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, Poland, Portugal, Romania, and Spain. However, it should be noted that, evidence permitting, other Member States have also been covered, as appropriate.

5 This can include forthcoming EU-funded research on improving data on AW as part of the research funding package under the Horizon Europe programme, aiming at achieving the objectives of the Farm to Fork Strategy.

6 Austria, Denmark, France, Germany, Italy, the Netherlands, Portugal, Spain and Sweden.

7 Council Directive 74/577/EEC on stunning of animals before slaughter (no longer in force)

8 The Convention applies to animals bred or kept for the production of food, wool, skin or fur or for other farming purposes. It concerns animals in intensive stock-farming systems in particular. The EEC signed and ratified the Convention in 1988; its entry into force for the EEC followed in 1989.

9 Directive 98/58/EC concerning the protection of animals kept for farming purposes, commonly referred to as the General Directive (in force)

10 By Council Directive 86/113/EEC of 25 March 1986, laying down minimum standards for the protection of laying hens kept in battery cages (no longer in force)

11 Directive 1999/74/EC laying down minimum standards for the protection of laying hens (in force)

12 Council Directive 91/629/EEC of 19 November 1991, laying down minimum standards for the protection of calves (no longer in force)

13 Council Directive 91/630/EEC of 19 November 1991, laying down minimum standards for the protection of pigs (no longer in force)

14 Directive 2008/119/EC laying down minimum standards for the protection of calves (in force)

15 Directive 2008/120/EC laying down minimum standards for the protection of pigs (in force)

16 Directive 2007/43/EC laying down minimum rules for the protection of chickens kept for meat production (in force)

17 Council Directive 77/489/EEC of 18 July 1977, on the protection of animals during international transport (no longer in force)

18 Council Regulation (EC) No 1/2005 of 22 December 2004, on the protection of animals during transport and related operations (in force)

19 Council Directive 93/119/EC of 22 December 1993, on the protection of animals at the time of slaughter or killing (no longer in force)

[20] Council Regulation (EC) No 1099/2009 of 24 September 2009, on the protection of animals at the time of killing (in force)

[21] Treaty on the European Union signed in Maastricht on 7 February 1992 (in force)

[22] Treaty of Amsterdam amending the Treaty on European Union, the Treaties establishing the European Communities and certain related acts signed in Amsterdam on 2 October 1997 (in force)

[23] Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community, signed at Lisbon, 13 December 2007 (in force)

[24] The provision of Article 13 (TFEU) could be found here.

[25] Among other things, the European Parliament emphasised that partial implementation is insufficient to achieve the regulation's overarching purpose of avoiding injury to or undue suffering by animals, or their death during transport, and that greater efforts should therefore be made to prevent serious incidents which have a significant impact on animal welfare and to prosecute those responsible for them. The text of the resolution can be found here.

[26] A. Dinu, Regulation (EC) No 1/2005 on the protection of animals during transport and related operations, European Implementation Assessment, Study, European Parliamentary Research Service, 2018

[27] See the details on the work of the ANIT Committee here.

[28] See the details of the hearing here.

[29] See the details of the ECI here.

[30] European Parliament resolution of 10 June 2021 on the European Citizens' Initiative 'End the cage age' The Commission is expected to adopt a Communication in response to this European Citizens' Initiative at the end of June 2021.

[31] Among other things, the Parliament called on the Commission to prepare a proposal for a simplified EU legislative framework for animal welfare. The text of the resolution can be found here.

[32] Among other things, the Parliament called on the Commission to draw up a new and ambitious strategy for 2016-2020, to ensure continuity of the framework for high animal welfare standards across the EU. The text of the resolution can be found here.

[33] Including the related measures (if any) adopted by the Commission with the aim to ensure the uniform implementation of each of these five directives and relevant guidance prepared at EU and/or national level.

[34] These Member States are: Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, Poland, Portugal, Romania, and Spain.

[35] These are internationally recognised criteria (for example by the OECD) adapted to the EU regulatory context. More specifically, they were taken on board by the EU in the Commission's better regulation guidelines and toolbox adopted in 2015. The latter guidelines and toolbox are currently under revision in the context of the Commission Communication on 'Better Regulation: Joining forces to make better laws' published in April 2021.

[36] These Member States are: Austria, Denmark, France, Germany, Italy, the Netherlands, Portugal, Spain and Sweden.

[37] And to the extent allowed by the available data.

[38] Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions – A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system, COM(2020)381 final, European Commission, May 2020

[39] Communication on the European Green Deal, COM/2019/640 final, European Commission, December 2019

[40] Following the information provided in the Commission May 2020 roadmap, which launched the Fitness check, its results are expected to be published in Q4 of 2021.

[41] Following the information provided in the Annex to the Farm to Fork Strategy, the revision of the EU legislation, which will cover all phases of the life of farmed animals – on the farm, during transport and at slaughter – is expected in Q4 of 2023.

Implementation of EU legislation on 'on-farm' animal welfare: Potential EU added value from the introduction of animal welfare labelling requirements at EU level

Research Paper

The European Union (EU) has been progressively promoting animal welfare (AW) over the last 40 years throughout the agri-food chain. At farm level, five EU directives currently set out minimum standards for the protection of farmed animals in general and for some specific animal species (notably, laying hens, broilers, calves and pigs).

This research paper evaluates the implementation of EU legislation governing on-farm AW against a standard set of criteria (namely relevance, effectiveness, efficiency, coherence and EU added value) together with its impacts. In addition, it maps and assesses existing models for AW labelling of animal-based products and examines the potential added value from the introduction of mandatory AW labelling requirements for such products at EU level.

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This research paper has been written by Arcadia International (Francesco Montanari, Julien Étienne, Inês Ferreira, Ana Oliveira, and Filippa Löfström), under the scientific guidance of Prof. Charlotte Berg (Swedish University of Agricultural Sciences, Department of Animal Environment and Health), and with management support from the Austrian Institute for Regional Studies and Spatial Planning (ÖIR) (Erich Dallhammer, Arndt Münch) at the request of the Ex-post Evaluation Unit of the Directorate for Impact Assessment and European Added Value, within the Directorate-General for Parliamentary Research Services (EPRS) of the General Secretariat of the European Parliament.

ADMINISTRATOR RESPONSIBLE

Ekaterina Karamfilova, Ex-post Evaluation Unit

To contact the publisher, please e-mail EPRS-ExPostEvaluation@ep.europa.eu

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eprs@ep.europa.eu
http://www.eprs.ep.parl.union.eu (intranet)
http://www.europarl.europa.eu/thinktank (internet)
http://epthinktank.eu (blog)

Executive summary

The European Union (EU) has been progressively promoting animal welfare (AW) over the last 40 years throughout the agri-food chain. At farm level, five EU directives currently set out minimum standards for the protection of farmed animals in general and for some specific animal species (notably, laying hens, broilers, calves and pigs).

This research paper evaluates the implementation of EU legislation governing on-farm AW against a standard set of criteria (namely relevance, effectiveness, efficiency, coherence and EU added value) together with its impacts. In addition, it maps and assesses existing models for AW labelling of animal-based products and examines the potential added value from the introduction of mandatory AW labelling requirements for such products at EU level.

Ex-post evaluation of the EU *acquis* regulating on-farm animal welfare

EU on-farm AW legislation combines one general directive that sets out principles for the welfare of farmed animals irrespective of the species, and four species specific directives on laying hens, broilers, pigs and calves. This evaluation was carried out in the context of an implementation report on on-farm AW to be drawn up by the European Parliament's Committee on Agriculture and Rural Development (AGRI), and could also support Parliament's work as a co-legislator on the revisions to the legislation in scope expected by the end of 2023.

Relying on desk research and interviews of stakeholders at EU and national level in a sample of 11 Member States (MS), the research paper has provided a first overview of how the full set of on-farm directives has been implemented.

On the **relevance** of the legislation, the research paper found that, of those stakeholders who felt in a position to comment on whether the legislation was aligned or not with the state of scientific knowledge, most agreed that it was outdated and in need of revision. The legislation is not recent, and several new findings have emerged that establish bases for revision. The European Food Safety Authority (EFSA) has been mandated by the European Commission (EC) to issue opinions that will contribute to the review of the legislation in this respect. While a number of stakeholders interviewed (representatives of farmers in particular) considered the current legislation fit for purpose and written in an appropriate manner, most of them – national competent authorities (NCAs), non-governmental organisations (NGOs), experts, some representatives of the industry – considered the wording of the legislation often inadequate in the sense that it was too vague, or provided exceptions or derogations to requirements. As a result, a number of undesirable practices have continued to be allowed. There was a shared sense among many stakeholders that fully specified requirements may not always be feasible, nor desirable, as this could impose a level of burden and rigidity on production sectors that are very diverse.

On the **effectiveness** of the legislation, a mixed picture emerges from the data: some directives have achieved desirable structural changes to the manner animals are reared (the laying hens, the pigs directive (for pregnant sows) and the calves directives). In contrast, the general directive and the broilers directive have been said to have achieved only small impacts. The pigs directive has also failed to achieve some of its objectives, as mutilations and cramped and stressful housing conditions without enrichment remain the norm for pigs in many MS. With the exception of laying hens and calves directives, a combination of derogations, exceptions, vague requirement or the absence of specific protections in EU legislation have existed in parallel to various national legislations, all of which have been blamed by many stakeholders from different categories for distorting competition. The evidence on non-compliance, which is limited and challenging as explained in the research paper, points to patterns of non-compliance that are common to some countries and sectors, as well as national and sectoral specificities. The reasons for non-compliance are multifarious, and there too

are common for some of them to many MS. The outlook of a leading north and west and a lagging south and east has begun to evolve, due to greater awareness, political commitment and activism in such countries as Italy, France and the Czech Republic. EU legislation and official controls have more often than not been secondary to other factors when it comes to explaining improvements on the ground.

On **impacts,** the general directive has generally been the least impactful of the directives in scope. The vague nature of the requirements and the large margins of interpretation it has allowed have made links between improvements on the ground and the directive impossible to characterise. The absence of species-specific protections for a number of species was seen by most stakeholders as a key problem for dairy cows, broiler and hen breeders, rabbits, sheep and turkey. The peculiar constraints of each species and of the farmers concerned were highlighted as calling for a specific approach to each species rather than a common one. The broilers directive appears to have been the least impactful of the species-specific directives, in the sense that it did not fundamentally alter production systems, although it incorporated an animal centred approach to the welfare of broilers and has paved the way for the greater use of animal-based indicators in farming. The evidence available suggests that the implementation costs it has generated for the sector may have been a fraction of those that were incurred by the eggs, veal meat and pigs sectors to comply with the other directives. In those three sectors, the directives have driven significant changes to buildings and equipment, and contributed to some changes to the demography of the sector. While working conditions were said to have improved for laying hen and veal meat farmers as a result, this was not necessarily the case for pig farmers.

On **efficiency,** the evidence, albeit limited, indicates that the costs of implementing the legislation were generally justified given the impacts they had, although there are strong views to the contrary from a few industry stakeholders.

On **coherence,** the legislation was found to be broadly coherent with animal health (AH) legislation, although greater integration was called for between the two. There were strong and consistent views among stakeholders to suggest that there should be better integration between AW legislation and international trade policy, aquaculture policy, policy on fair prices within value chains, and the common agriculture policy (CAP). There were disagreements on the extent to which the legislation on AW is coherent with environmental policy.

On **EU added-value,** there was a general agreement that the directives have added value by providing a common framework of rules, although more needs to be done to address divergence in their implementation and consumer demands on AW within the EU.

Finally, the research conducted has encountered significant obstacles in terms of data availability and data quality especially as regards compliance rates ('effectiveness' of the implementation). Getting a clear sense of the reality of practices on the ground for the wide range of businesses, species and issues in scope would be a challenging in any circumstances. In the context of AW legislation, this challenge is made far greater by two main factors. Firstly, the legislation does not specify a number of requirements (how they should be complied with or monitored) and therefore leaves much discretion to MS to specify numerous requirements and how they would assess them. This ample space for different approaches and sometimes for subjectivity leads to inconsistent monitoring and enforcement across the EU. Secondly, MS have different approaches to resourcing and prioritising official controls, and to making information on those controls and their outcomes publicly available. Sometimes, and particularly for species that are not subject to specific regulations (such as rabbits), there are no or very few official controls. There are therefore major data gaps and uncertainties (including on quality) regarding the available data. Expert views and an assessment of stakeholder opinions can, to some extent, address these issues but greater margins of uncertainty than would be desirable persist nonetheless. For the above reason, the only firm recommendation that could be provided in the context of Research Task 1 concerns the EC, NCAs and business organisations, which

should work collaboratively on ways of tackling this information gap. The findings of this research project could serve as a useful basis for future work to further specify the scope of the data problem,[1] and its various regulatory aspects, which need to be addressed as a matter of priority.

Animal welfare labelling

The research led to the identification of **24 different labelling systems covering AW** across the EU market providing a first comprehensive overview of the existing labelling practices in this area at EU level. Labelling systems addressing AW have been proliferating on the EU market over the last years. The systems studied are currently concentrated in a limited number of MS with Southern European countries registering the highest increase of newly established systems over the last five years. The majority of the systems analysed have been initiated by the private sector, while the remainder is the result of public-private partnerships or, in few cases, of the initiative of EU MS. Denmark has been the first MS to introduce a national AW label in 2017 and has been recently followed by Germany and Italy.

All systems analysed are **voluntary** in nature, thus leaving to food business operators the choice to join them. The label's standard of most systems includes other aspects related to the product besides AW, among which traceability, sustainability and health. In terms of animal species, **pigs, broilers and dairy cows** are those most frequently labelled. In terms of food products, the systems cover primarily fresh, frozen and processed meat. The systems analysed vary greatly in terms of functioning and design. Despite this heterogeneity, the features, which are common to most systems are: a single-tier design, the fact that AW requirements laid down in the label's standard are based on private rules, among others, and the independence of the audits to verify compliance with that standard.

A comparative assessment of a more limited sample of labelling systems (n=11) has then shown that their level of **scientific substantiation** and **transparency** can be considered satisfactory, overall. However, further research is needed to determine the **effectiveness** of those systems when considering, in particular, their impact on food businesses or in relation to consumer understanding of animal production systems. Likewise, future research may further investigate their **efficiency,** namely to establish to what extent costs and benefits deriving from the participation by food businesses in such systems are equitably shared across the relevant product chain.

Concerning the possible **added value** from the introduction of **mandatory EU AW labelling requirements** for animal-based products, the data collection activities carried out during the research indicate that, overall, EU and national stakeholders hold different views in this respect. Currently, the prospect of AW mandatory labelling rules at EU level does not encounter the support of EU business stakeholders across all categories and national farmers' organisations, the main reason being the economic implications stemming from their implementation for food business operators and, above all, for farmers. Besides, while mandatory rules could ensure a greater level playing field across the EU market, they could have the effect of discouraging, if not preventing, private initiatives oriented to product differentiation from using AW as a market leverage. Likewise, most MS are not in favour of the introduction of compulsory requirements in this area supporting EU harmonisation through a voluntary approach instead. Reasons to support a non-binding approach emerging from the research include implementation costs for food business operators and NCAs alike, challenges in enforcing AW labelling requirements and a possible generalised loss of competitiveness in the EU agri-food sector.

Conversely, AW NGOs are in favour of the establishment of compulsory AW labelling rules. Among the benefits they attribute to an EU-wide label improvements in AW practices across the EU are expected through a market-driven approach, greater market transparency and consumer

empowerment, as well as new business opportunities for farmers and other food business operators through the commercialisation of AW-friendly products.

Future research in this area should examine the possible financial impacts of the introduction of mandatory labelling requirements at EU level more closely, among others things, drawing from the experience of the public AW labelling systems that have been introduced over the last few years in some MS.

The evidence collected during the research indicates that, at this stage of the policy discussion, a **voluntary approach to AW labelling** at EU level is more likely to encounter the support of a larger stakeholder base in the EU. In terms of design, stakeholders generally consider that an EU label should set out criteria that are species-specific, cover all the stages of the life of the animal and, with the exception of the EU meat industry sector, strictly focus on AW aspects. Conversely, no strict consensus exists, as of yet, as to whether the EU label should be designed as a single- or as a multi-tier labelling system.

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List of abbreviations

ABMs	Animal-based measures
AH	Animal Health
AW	Animal Welfare
AWIN	Animal Welfare Indicators Network
AWS	Animal Welfare Strategy
CAP	Common agricultural policy
EC	European Commission
ECA	European Court of Auditors
EFSA	European Food Safety Authority
EP	European Parliament
EPRS	European Parliamentary Research Service
EU	European Union
FCEC	Food Chain Evaluation Consortium
FTEs	Full Time Equivalents
IFOAM	International Federation of Organic Agriculture Movements
MoP	Method of production
MS	Member State
NCAs	National Competent Authorities
NGOs	Non-governmental organisations
ODG	Organismes de Défense et de Gestion
OIE	World Organisation for Animal Health
RDP	Rural Development Programme
RSPCA	Royal Society for the Prevention of Cruelty to Animals
SCAHAW	Scientific Committee on Animal Health and Animal Welfare
SMRs	Statutory Management Requirements
SVC	Standing Veterinary Committee
UK	United Kingdom

Glossary

Animal-based measures	A response of an animal or an effect on an animal used to assess its welfare. It can be taken directly on the animal or indirectly and includes the use of animal records. It can result from a specific event, e.g. an injury, or be the cumulative outcome of many days, weeks or months, e.g. body condition [2]
Enrichment	Environmental modifications that facilitate strongly motivated behaviours that are specific to a species, or lead the animal to express behaviours which are more complex. Enrichment can include bedding, substrates, objects, etc. [3]
Extensive farming	Farming system often practised on larger farms, characterised by low levels of inputs per unit area of land [4]
Input-based measures	See non-animal-based measures
Intensive farming	Farming system with higher levels of input and output per unit area of land
Mixed label	Labelling system that covers AW alongside other product- or process-related dimensions
Multi-tier label	Label involving different levels of compliance with progressively higher AW requirements
Non-animal-based measures	An evaluation of a factor of combination of factors (resources or management) that may be linked to change in the likelihood of good or poor welfare [5]
Output-based measures	See animal-based measures

1. Objectives and scope of the research

Following the launch by the European Parliament (EP) Committee on Agriculture and Rural Development (AGRI) of an own-initiative implementation report on animal welfare (AW) at farm level, the European Parliament Research Service (EPRS) (notably, the Ex-Post Evaluation Unit) has been requested to provide expertise in support of the drafting of that report. It has therefore commissioned the present research paper with the following objectives:

1 Evaluate the implementation of the legislation of the European Union (EU) on AW with a focus on "on-farm" aspects against a standard set of criteria (namely relevance, effectiveness, efficiency, coherence and EU added value) together with its impacts (*Research Task 1*); in particular the EU legislation subject to the evaluation consists of the following legal acts:

- Council Directive 98/58/EC concerning the protection of animals kept for farming purposes (the "general" directive);[6]
- Council Directive 1999/74/EC laying down minimum standards for the protection of laying hens ("species-specific" directive);[7]
- Council Directive 2007/43/EC laying down minimum rules for the protection of chickens kept for meat production ("species-specific" directive);[8]
- Council Directive 2008/119/EC laying down minimum standards for the protection of calves ("species-specific" directive);[9] and,
- Council Directive 2008/120/EC laying down minimum standards for the protection of pigs ("species-specific" directive).[10]

2 Map and assess existing models for AW labelling of animal-based products while examining the potential added value from the introduction of mandatory AW labelling requirements at EU level for such products (*Research Task 2*); while the focus of ex-post evaluation under Research Task 1 is strictly limited to on-farm AW, the scope of Research Task 2 is broader insofar as labelling systems may also cover AW during transport and/or at slaughter.

Against this background, this research paper is structured in five main chapters:

- **Chapter 2, Methodological approach** – This chapter illustrates the methodological approach that was designed and implemented by the research team to complete the two research tasks;
- **Chapter 3, EU policy and legislation on animal welfare: general context and evolution of on-farm animal welfare practices for the studied species** – This chapter serves as a scene-setter for Chapters 4 and 5 insofar as it describes the broader policy and legislative framework for AW at EU level besides providing an historical overview of the evolution of on-farm AW practices for the animal species covered by the research paper, i.e. laying hens, broilers, pigs, calves and, in the context of Directive 98/58/EC, cattle (for all farming purposes), sheep and rabbits;
- **Chapter 4, Ex-post evaluation of the EU acquis regulating on-farm animal welfare**– This chapter contains the results of the ex-post evaluation exercise conducted by the research team. This examined the implementation of the five on-farm AW directives referred above, alongside relevant guidance documents, considering their relevance, effectiveness, efficiency, coherence, EU added value and impacts;
- **Chapter 5, Animal welfare labelling** – This chapter contains a mapping of the labelling systems covering AW that currently exist on the EU market together with an assessment of their scientific substantiation, effectiveness, efficiency and transparency. In addition, it considers and discusses the potential added value that may derive from the

introduction of mandatory AW labelling requirements for animal-based products at EU level;

- **Chapter 6, Conclusions and recommendations –** The final chapter of the research paper draws the main conclusions of the research conducted and, on that basis, formulates relevant recommendations for EU policy-makers and for future research to be conducted in this area.

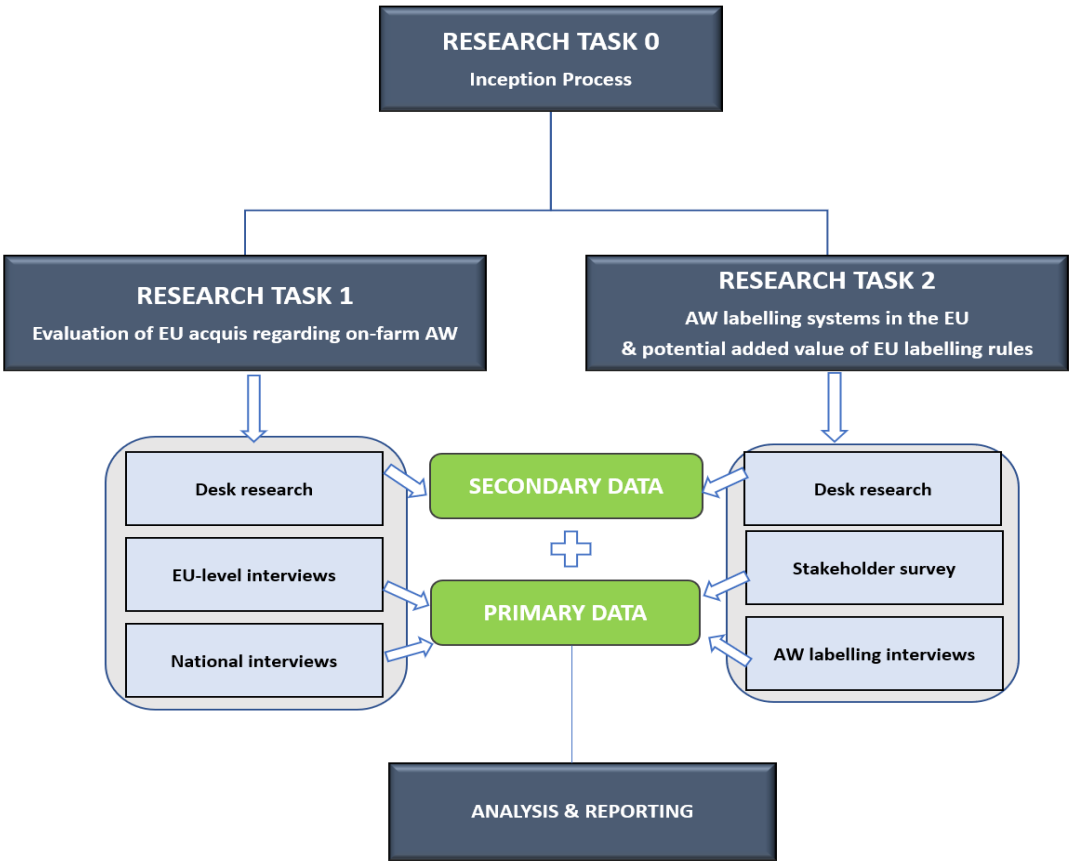
2. Methodological approach

The methodological approach designed to produce this research paper consisted of two main research tasks (Research Task 1 and Research Task 2). These were preceded by an inception process (Research Task 0) that took place in December 2020. Research Task 1 focused on the ex-post evaluation of the implementation of the EU acquis on on-farm AW legislation. Research Task 2 gathered relevant information on existing labelling systems covering AW in the EU market, while considering the potential added value deriving from the introduction of mandatory AW labelling requirements at EU level.

More details on the different research tasks are given in section 2.1 – 2.3 of this chapter, while section 2.4 illustrates the approach chosen by the research team to reflect and report stakeholder views in the research paper.

The figure below illustrates the overall logic underpinning the methodological approach applied to the research as well as the specific data collection activities performed for each of the two research tasks.

Figure 1. Research tasks



Source: Arcadia International 2020

2.1. Research Task 0

As referred earlier above, the two main research tasks were preceded by an inception process (Research Task 0). This process essentially served to better define the scope of the research to be conducted and, in accordance with that, to fine-tune data collection tools. One of the main milestones of this initial process was the decision to include within the analysis to be performed under Research Task 2, next to the labelling systems strictly focussing on AW, also the so-called "mixed labels", i.e. labelling systems that cover AW alongside other product- or process-related dimensions (e.g. sustainability, food safety, traceability, environmental impact, organic, nutrition, etc.) (see below section 2.3).

2.2. Research Task 1

For the evaluation of the implementation of the EU acquis on on-farm AW legislation foreseen under Research Task 1, the research conducted relied on three main data collection tools, namely:

- Desk;
- EU-level interviews; and
- National interviews.

It is of note that the data collection methodology under Research Task 1 did not involve any auditing of farms, authorities (NCAs) or any other actor involved in the implementation of the EU legislation included in the scope of this research paper.[11]

The following paragraphs briefly describe how the data collection tools referred above were implemented by the research team.

Desk research

In the first phase of the research project, extensive desk research was carried out with the objective to identify relevant information sources at EU level, which could support the evaluation of the five EU directives in scope. Through desk research relevant EU studies and reports as well as academic studies and articles were identified, which feature in the list of references at the end of the research paper. Desk research also served for the elaboration of the historical overview of the evolution of on-farm AW practices in the EU, which is contained in section 3.2 of the research paper. EU-level desk research was finally complemented by desk research at country level in support of National interviews (see below).

EU-level interviews

Under Research Task 1, the research team performed a set of exploratory interviews with EU stakeholders and experts ("EU-level interviews") mainly to gauge initial feedback on the implementation of the EU acquis regulating on-farm AW as well as on AW labelling for the purpose of Research Task 2.

For the purpose of ensuring consistency and comparability of the information to be gathered with those interviews, the research team developed a common interview guide, based on a semi-structured questionnaire, addressing both themes covered by Research Tasks 1 and 2. The EU-level interview guide is contained in **Annex A.1.** In total **15 EU-level interviews** were performed. The full list of interviewees is provided in **Annex A.2.**

Of all EU stakeholders whom the research team reached out to, only BEUC (the European consumer organisation) declined the request of interview explaining that AW is out of their activities. In addition, as Vier Pfoten/Four Paws, an AW non-governmental organisation (NGO), could not

participate in the group interview that was organised with other NGOs, it delegated another NGO (Eurogroup for Animals) to represent them.

National interviews

In accordance with the methodology designed on the basis of the Technical specifications of the research paper, interviews were performed at national level in the five biggest producing Member States (MS) for each one of the species covered by the research paper – i.e. cattle (for all farming purposes), rabbits and sheep under Directive 98/58/EC; laying hens; broilers; pigs and calves).

Table 1 illustrates the scope of the national research performed in the **11 MS** that formed part of the sample studied.

Table 1:.Scope of national research

MS	Directive 98/58 – general directive	Pigs directive	Laying hens directive	Broilers directive	Calves directive
DENMARK					
FRANCE	Rabbits, Cows, Sheep				
GERMANY	Rabbits, Cows				
GREECE	Sheep				
IRELAND	Cows				
ITALY	Rabbits, Cows, Sheep				
NETHERLANDS					
POLAND					
PORTUGAL	Rabbits				
ROMANIA	Sheep				
SPAIN	Rabbits, Cows, Sheep				

During the research other animal species and MS have been commented depending on the available data. With a view to ensuring consistency and comparability of the information to be gathered via national interviews, the research team drafted a common interview guide in the form of a semi-structured questionnaire to be used by all national experts. The national interview guide, which also contained guidelines for performing desk research at national level, is contained in **Annex A.3.** In this respect, it is worth noting that the interview guide also contained a set of questions relevant to Research Task 2 and notably related to the added value and implications that might stem from the introduction of mandatory EU AW labelling requirements.

Over the period February – April 2021 a total of **89 interviews** (out of 102 envisaged)[12] were performed at national level targeting a broad range of stakeholders, including NCAs responsible for the development and/or enforcement of AW legislation at national level, farmers' organisations, AW NGOs and AW experts. The full list of interviewees for each MS is provided in **Annex A.4.**

In addition, the completion of Research Task 1 benefited from inputs from 3 AW experts: Charlotte Berg, Andrew Butterworth and Cynthia Schuck-Paim.

2.3. Research Task 2

With a view to providing a mapping and an assessment of existing labelling systems covering AW in the EU and an analysis of the potential added value of the introduction of mandatory AW labelling requirements at EU level, three main data collection tools were used:

- Desk research;
- An online survey; and
- AW labelling interviews.

As for Research Task 1, data collection under Research Task 2 did not involve any auditing of the labelling systems studied.

The following paragraphs briefly describe how the data collection tools referred above were implemented by the research team.

Desk research

During the period December 2020 – January 2021, the research team performed extensive desk research to identify existing labelling systems covering AW in the EU with a view to subsequently targeting them via the online survey (see further below). The desk research performed relied mainly on the consultation and analysis of websites of owners/managers of labelling systems across the EU-27. Indeed, academic literature and non-academic sources mapping, analysing and/or assessing these types of systems are quite limited and, in general, not exhaustive in terms of EU, national and/or animal species coverage.[13] With these limitations in mind, academic literature and non-academic sources were used to triangulate and/or complement information retrieved by the research team on the internet.

Annex A.5 provides the list of the labelling systems that were identified through desk research. In total, **23 labelling systems** were pre-identified across the EU.

Online survey

The online survey was, launched on 1 February 2021 and closed on 12 March 2021. The final text of the online survey consisted of five main sections, notably:

A. Identification of the respondent;
B. General details of the labelling system;
C. Main characteristics of the labelling system;
D. Functioning of the labelling system;
E. Market penetration and impacts of the labelling system;
F. Potential impact of an EU AW label; and,
G. Additional information and follow-up,

for a total number of 72 questions.

Respondents were also questioned about their availability to sit a follow-up interview ("AW labelling interview"; see further below) with the objective to gather additional information on the functioning of their systems and clarify details of their replies where necessary.

The full text of the survey is provided in **Annex A.6** to this report.

The survey was distributed by the research team to the following stakeholders:

- All EU 27 MS, notably to the national agriculture or AW attaché(s) in the respective Permanent Representations to the EU;

- All food labelling systems that were pre-identified by the research team through desk research (see above);
- All EU stakeholders who took part in the EU-level interviews (see Annex A.2) with a view to ensuring wide dissemination of the survey among their members at national level.

The survey generated 30 replies in total. Of those 27 replies were eventually validated by the research team corresponding to **24 labelling systems** covering AW across the EU. The full analysis of the replies generated by the survey is contained in **Annex A.7.**

AW labelling interviews

Building on the results generated by the survey, the research team identified 12 labelling systems (i.e. 50% of the total number of respondents) to sit a possible follow-up interview. The selection of this sample was made taking into account different factors and elements, including:

- The availability given by the respondents to sit an interview;
- The geographical distribution of the systems mapped through the survey;
- The year of establishment and the implementation state of the system;
- The overall scope of the labelling system notably with the objective to include in the analysis also mixed labels (see above 2.1);
- The variety of animal species and food product categories covered by each system.

A common interview guide, based on a semi-structured questionnaire, was developed for this purpose using the critical evaluation framework designed by More et al. (2017)[14] with the objective to carry out a comparative assessment of the labelling systems studied in terms of scientific substantiation, effectiveness, efficiency and transparency. The AW labelling interview guide is provided in **Annex A.8.**

Of the labelling systems that were identified only one declined the interview. Therefore, the final sample analysed during this phase of the research consisted of 11 labelling systems. The full list of the AW labelling interviews performed is provided in **Annex A.9.**

2.4. Approach to reporting stakeholder views in the research paper

As illustrated in the previous sections of this chapter, the consultations undertaken in the context of the research paper consisted in stakeholder interviews and one survey. Against this background, this section elaborates on the approach elected by the research team to reflect and report stakeholder views in this research paper.

EU-level and national interviews

The interviews were completed by EU-level and national level stakeholders from 11 MS. Those stakeholders belong to the following categories:

- EU institutions, notably the European Commission (EC) and the European Court of Auditors (ECA);
- Business associations (farmers, processors and retailers at EU level, and farmers at national level);
- NGOs at EU and national level;
- NCAs; and
- Experts on AW, public health and conservation science.

The full set of semi-structured interviews completed consists of a heterogeneous set of qualitative data. Aggregation of views across stakeholders is limited by the following considerations:

- Most EU-level stakeholders were unable to provide specific feedback on the implementation of the directives; they rather shared positions and views on future policy and legislative scenarios;
- Most national stakeholders were unable to directly comment on the directives; they rather commented on the national legislation that transposes the directives;
- Most national stakeholders did not hold the memory of how the implementation of the directives occurred in their MS (10 to 15 years from the time of the interview) and what impact they had;
- Most EU-level and national stakeholders were able to address some questions but not all. The questions they answered were a function of their role, the sector in which they operate, or their level of expertise on the topic.

As a result of the above, and to ensure the report is true to the data collected and the views expressed by the stakeholders, the research team has elected to report on interview findings in terms of how much agreement or disagreement there is across the various stakeholder categories, providing, whenever possible, indications on which categories of stakeholders, in which countries and for which species, diverge from others. The research team has thus elected not to report on the proportion of all stakeholders interviewed through such statements as "a majority of stakeholders" or "a minority of stakeholders" as, in the view of the research team, this risks misleading the reader that all respondents were able to express a view on all questions, which is not the case.

Online survey

The survey under Research Task 2 was completed by owners/managers of labelling systems covering AW. Given the systematic nature of the survey, meaning that each respondent replied to the exact same questions that were all relevant to them, the reporting on the survey responses specifies the proportion of all responses received through qualitative and quantitative statements, e.g. "a minority of respondents (4 out of 24)".

3. EU policy and legislation on animal welfare: general context and evolution of on-farm animal welfare practices for the studied species

3.1. EU policy context

The EU has been progressively promoting AW over the last 40 years throughout the agri-food chain. The first EU AW legislation concerning the slaughter of animals was adopted in 1974. In 2007, with the signing of the Lisbon Treaty, animals were given greater prominence as sentient beings under EU primary law (namely, through article 13 of the Treaty on the Functioning of the European Union) and since then their welfare must be taken into account while designing and implementing other EU policies.[15]

At farm level, five EU directives adopted by the Council of the EU currently set out minimum standards for the protection of farmed animals in general and of some specific animal species (notably, laying hens, broilers, calves and pigs). These are:

- Council Directive 98/58/EC concerning the protection of animals kept for farming purposes (the "general" directive);
- Council Directive 1999/74/EC laying down minimum standards for the protection of laying hens ("species-specific" directive);
- Council Directive 2007/43/EC laying down minimum rules for the protection of chickens kept for meat production ("species-specific" directive);
- Council Directive 2008/119/EC laying down minimum standards for the protection of calves ("species-specific" directive); and,
- Council Directive 2008/120/EC laying down minimum standards for the protection of pigs ("species-specific" directive).

Directive 98/58/EC laid down general provisions, namely in relation to staffing, inspections, record keeping, freedom of movement, facilities and accommodation, equipment, feed and water, mutilations and breeding procedures, for **all animal species** kept for the production of food, wool, skin or fur, or for other farming purposes. The directive has therefore general scope and applies to the rearing of sheep, rabbits, and cows (for all farming purposes), among others.

Shortly after the adoption of the general directive, the EU adopted:

Council Directive 99/74/EC laid down minimum standards for the protection of laying hens. In particular, the directive set out provisions for three main different farming systems, namely non-enriched cages (subject to an EU ban since 2012), enriched cages, and alternative systems. In addition, it established the obligation of marking eggs based on their farm of origin.[16]

Council Directive 2007/43/EC laid down minimum rules for the protection of chickens kept for meat production ("broilers"). The directive set out requirements for keeping chickens, including maximum stocking density, lighting, litter, feeding, and ventilation. Moreover, the EC has produced several reports and studies with regard to the AW of this specific animal category. In 2016, it presented a report to the EP and the Council on the impact of genetic selection.[17] In 2017, it performed a study on the application of the directive aimed at the development of specific welfare indicators.[18] Lastly, in 2018 it presented a report again to the EP and the Council on the application of the directive and its influence on the welfare of chickens kept for meat production as well as the development of welfare indicators.[19]

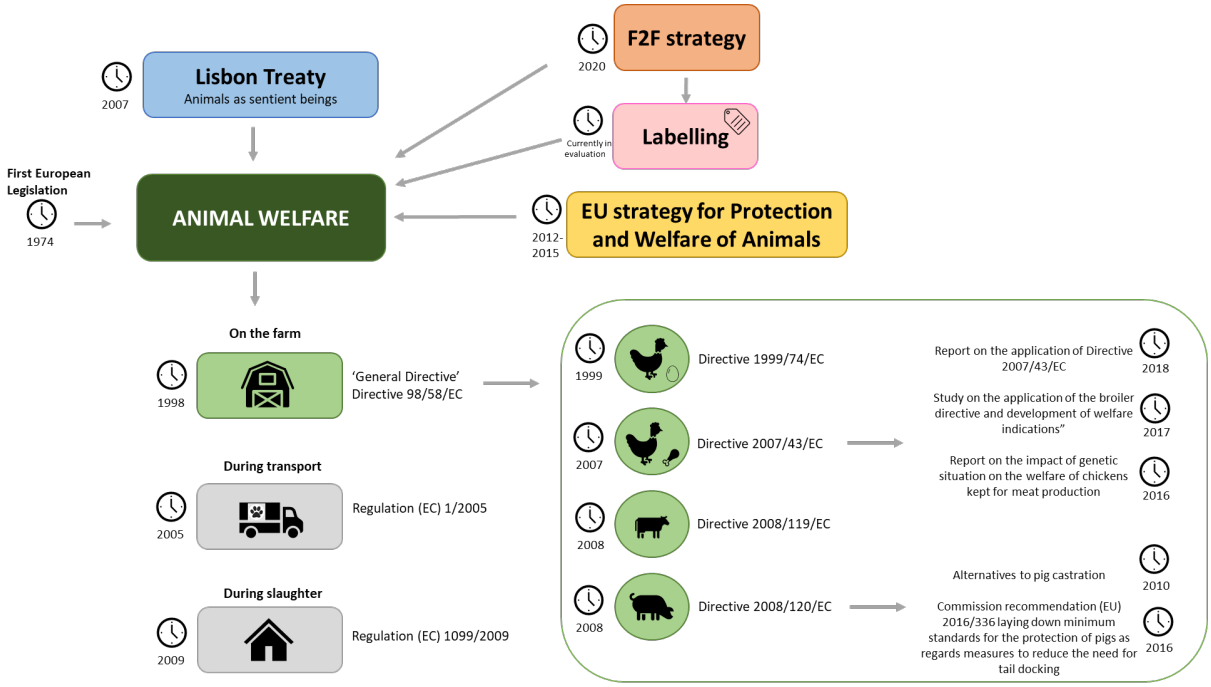
Council Directive 2008/119/EC, which repealed Directive 91/629/EEC,[20] laid down minimum standards for the protection of calves. The directive set out accommodation standards notably by forbidding the use of confined individual pens for animals older than eight weeks of age.

Council Directive 2008/120/EC, which repealed directive 91/630/EEC,[21] laid down minimum standards for the protection of pigs. In particular, the directive established accommodation standards and specific provisions for boars, sows and gilts, piglets and weaners and rearing pigs. Furthermore, in 2016 the EC issued Recommendation (EU) 2016/336 aimed at preventing routine tail-docking[22]. Also, since 2010 growing importance has been attached to the use of alternatives to pig castration and to the need to abandon surgical castration.

EU on-farm AW legislation has been subsequently complemented by specific legislation addressing AW during transport and related operations[23] and at slaughter.[24]

With a view to improving AW standards and achieving more consistent application and enforcement of EU AW legislation in all MS, including in relation to the directives listed above, in 2012, the EC adopted an EU Animal Welfare Strategy (AWS) for 2012-2015,[25] as a continuation of the previous Community Action Plan on the Protection and Welfare of Animals 2006-2010.[26]

Figure 2. EU AW policy and legislation currently in force: "on-farm" focus



Source: Arcadia International 2020

In particular, this policy initiative outlined strategic actions aimed at ensuring more even levels of protection across species and countries as well as a greater level-playing field between economic operators. These involved a range of interventions, including the production of guidance, enforcement actions, research projects, and improving synergies between AW policy and the common agricultural policy (CAP) to drive improvements at farm level. In 2018, the ECA noted significant variations in terms of implementation of AW legislation in the EU and the partial achievements of previous actions (in particular the AWS) to address those variations. The ECA noted in particular the lack of synergies with the CAP.[27] These observations were corroborated by the evaluation of the AW strategy (2012-2015).[28]

In 2017, the EC created the EU Platform on AW, a stakeholder forum aimed at enhancing dialogue on AW issues at EU level. Currently, the Platform works through three main thematic sub-groups, one focussing on animal transport, another one on the welfare of pigs, and the last one, which was established in October 2020, on AW labelling. EU law regulates AW labelling of animal-based products to a limited extent. The current regulatory state-of-the art in this specific area is discussed further on in section 5.2 of this research paper.

Against this background, Figure 2 provides an overview summary of the main AW-related policy and legislative acts at EU level, currently in force, with a specific focus on "on-farm" requirements.

3.2. Evolution of on-farm animal welfare practices for the studied species: an overview

This section provides for a historical overview of the evolution of on-farm AW practices in the EU for the species studied during the research, namely laying hens, broilers, pigs, calves and, in the context of Directive 98/58/EC, cattle (for all farming purposes), sheep and rabbits. As a general remark, it should be noted that the level of quantitative and qualitative information for the various species analysed varies significantly from one case to another, being notably more limited for the species covered by Directive 98/58/EC, i.e. cattle (for all farming purposes), sheep and rabbits. **Annex A.10** to the research paper provides a more detailed account of such evolution.

3.2.1. Laying hens

In 1999 the EU adopted Council Directive 1999/74/EC. This directive laid down minimum standards for the protection of laying hens (except breeding laying hens and systems with less than 350 laying hens). In particular, the directive set out provisions for three different farming systems, namely non-enriched cages (subject to an EU ban as of 2012), enriched cages, and alternative systems (such as barn systems and free range). Some MS went beyond EU requirements and have adopted more stringent provisions (for instance, in Luxembourg and Austria enriched cages are prohibited).[29]

In 2020, more than 371 million laying hens were farmed in the EU – excluding the United Kingdom (UK) and raised in four different systems: enriched cages, barns, free-range and organic systems.[30] Approximately 51.9% of the laying hens were housed in alternative housing systems (namely 34% in barns, 11.9% in free-range and 6.1% in organic systems), while the remaining 48.1% in enriched cages (as shown in Table 2).[31]

Table 2 Number of laying hens by farming method (maximum capacity) according to notifications under Commission Implementing Regulation (EU) 2017/1185, Art. 12(b) – Annex III.10, in 2020.

2020			% by farming method in respective country			
MS	Total laying hens in MS	% MS/EU	% enriched cages	% barn	% free range	% organic
DE	56 260 281	15.1%	5.6%	60.1%	21.3%	13.0%
PL	50 150 219	13.5%	81.0%	13.7%	4.4%	0.8%
FR **	48 255 709	13.0%	54.1%	11.7%	23.0%	11.2%
ES	47 129 970	12.7%	77.6%	13.0%	8.0%	1.4%
IT	41 047 911	11.0%	42.0%	49.5%	3.7%	4.9%
NL	33 126 050	8.9%	15.2%	60.6%	17.8%	6.4%
BE	10 735 941	2.9%	37.2%	43.3%	13.6%	5.9%
RO	8 741 379	2.4%	58.8%	33.0%	6.6%	1.7%
PT	8 732 646	2.3%	86.2%	10.7%	2.8%	0.4%

2020			% by farming method in respective country			
MS	Total laying hens in MS	% MS/EU	% enriched cages	% barn	% free range	% organic
SE	8 725 649	2.3%	5.5%	76.1%	3.7%	14.7%
HU	7 501 107	2.0%	71.0%	28.0%	0.7%	0.3%
AT	7 119 691	1.9%	0.0%	61.0%	26.5%	21.5%
CZ	7 111 571	1.9%	67.6%	30.9%	1.0%	0.4%
BG	5 505 594	1.5%	71.0%	25.3%	3.6%	0.0%
EL**	4 616 611	1.2%	77.3%	12.2%	5.1%	5.4%
FI	4 504 894	1.2%	50.5%	39.3%	3.2%	7.1%
DK	3 767 997	1.0%	14.6%	58.3%	9.6%	17.4%
IE **	3 651 519	1.0%	51.5%	1.1%	43.8%	3.7%
LV	3 255 160	0.9%	75.2%	21.5%	3.0%	0.2%
SK	3 154 986	0.8%	76.7%	21.0%	2.1%	0.2%
LT	2 837 711	0.8%	83.2%	15.9%	0.3%	0.6%
HR	2 316 358	0.6%	61.9%	34.1%	3.6%	0.4%
S I	1 450 580	0.4%	24.3%	55.1%	18.1%	2.6%
EE	1 122 167	0.3%	81.7%	9.5%	4.0%	4.7%
CY	535 865	0.1%	71.4%	17.2%	9.6%	1.8%
MT	360 585	0.1%	99.4%	0.6%	0.0%	0.0%
LU	103 720	0.0%	0.0%	75.6%	0.0%	24.4%
TOTAL	371 821 871	100%	48.1%	34.0%	11.9%	6.1%

** 2019 Data | Source: EC, Eggs, Market Situation Dashboard, 2021

According to the latest information available, 74.2% of laying hens are concentrated in only six MS: Germany, Poland, France, Spain, Italy and Netherlands. In Germany, Netherlands and Italy alternative housing systems are the main housing systems used. Conversely, in Poland, Spain and France the main housing systems used are enriched cages.[32]

In some MS, farm assurance schemes or private standards also contribute toward AW of laying hens. While some schemes/standards reflect EU legislation, others impose more stringent requirements for AW than EU provisions.[33] This is the case of private labelling systems such as Label Rouge in France[34] and Beter Leven keurmerk in the Netherlands.[35]

3.2.2. Broilers

In 2007, the EU adopted Council Directive 2007/43/EC. This directive laid down minimum rules for the protection of chickens kept for meat production addressing welfare problems related to environmental and management factors.[36] The directive applies to holdings with more than 500 chickens, set out requirements for keeping chickens (including maximum stocking density and housing facilities) and required the monitoring and follow-up at slaughterhouse of welfare indicators to help identify poor welfare on holdings. Some MS (e.g. Austria, Denmark, Finland, Germany, the Netherlands, and Sweden) have introduced stricter requirements than those set out by the directive.[37]

Farm assurance schemes or private standards are also used in some MS. These also contribute, in some way, to ensuring that the overall welfare of broilers is guaranteed. While some of such schemes and standards mirror EU rules, in other cases they set out stricter requirements.[38] This is the case of private AW labelling systems such as Etiquette Bien-Être Animal and Label Rouge in France, Tierschutzlabel "Für mehr Tierschutz" in Germany, and Beter Leven keurmerk in the Netherlands.[39]

3.2.3. Pigs

In 2008 Council Directive 2008/120/EC was adopted. The directive applies to all categories of pigs laying down minimum standards for their protection. It set out requirements for accommodation, feed, and environmental conditions of pigs, including the living space available per animal, the quality of the floorings, the permanent access to fresh water and to materials for rooting and playing as well as levels of light and noise.

The directive also laid down rules concerning painful operations such as castration, tail-docking and the elimination of corner teeth. Building on prior legislation, it reiterates that routine tail-docking and the elimination of corner teeth are prohibited, unless there is evidence of injuries in other pigs. In spite of these requirements, some harmful practices such as tail-docking and surgical castration of male piglets have continued. In 2016, the EC issued additional guidance on measures to reduce the need for tail-docking through Recommendation (EU) 2016/336.[40]

In most MS national legislation reflects the provisions of EU law, but in some countries, it goes beyond that. By way of an example, the Netherlands have reduced the period allowed for individual housing around insemination from four weeks to four days.[41]

There are some farm assurance schemes or private standards in place in several MS that contribute to the overall welfare of pigs in synergy with EU legislation. Some of these schemes and standards are in line with EU legislation whilst others go beyond it.[42] This is the case of several AW labels such as Tierschutzlabel "Für Mehr Tierschutz" and Initiative Tierwohl in Germany, Beter Leven keurmerk in the Netherlands and Dyrevelfærdshjertet in Denmark.[43]

3.2.4. Calves

Council Directive 2008/119/EC laying down minimum standards for the protection of calves was adopted in 2008. The directive, among others, gave more prominence to the provisions on accommodation standards, namely the ban of confined individual pens after the age of eight weeks, and the minimum dimensions for individual pens and for calves kept in group. It also required that calves are not kept in permanent darkness, tethered (except under specific conditions) and are fed with an appropriate diet in accordance with their physiological needs.

Some national legislation on welfare of calves goes beyond EU law, including in Germany (e.g. additional requirements on accommodations)[44] and Sweden (e.g. additional requirements for suitable bedding).[45]

There are some farm assurance schemes or private standards in place in some MS that contribute towards the welfare of calves. Some of these schemes/standards mirror EU legislation, while others go beyond the minimum standards set by it.[46] Examples of private AW labels that cover calves include the public labelling system Bedre dyrevelfærd in Denmark and Beter Leven keurmerk in the Netherlands.[47]

3.2.5. Beef cattle and dairy cows

In the EU, there is no specific legislation referring to the welfare of beef cattle older than six months. Their protection falls under the provisions of Council Directive 98/58/EC. In addition, the Recommendation concerning cattle adopted by the Standing Committee of the European Convention for the Protection of Animals Kept for Farming Purposes in 1988 should be observed.[48] Furthermore, there are some farm assurance schemes or private standards in place in some MS that currently contribute towards the overall welfare of beef cattle. Some of these schemes/standards mirror EU law, while others are stricter. This is the case of AW private labels such as the public labelling system Bedre dyrevelfærd in Denmark and Beter Leven keurmerk in the Netherlands.[49]

In the EU, there is no specific legislation on the welfare of dairy cows older than six months either and their welfare is also covered by Directive 98/58/EC. In addition, the Recommendation concerning cattle adopted by Standing Committee of the European Convention for the Protection of Animals Kept for Farming Purposes in 1988 should be observed. This recommendation contains provisions on housing, management, stockmanship and inspection, among others, that could improve the welfare of those animals.[50] In 2015, the World Organisation for Animal Health (OIE) adopted specific standards on the welfare of dairy cows. These standards contain provisions on system design, environmental management and animal management practices.[51] While those standards are not binding, farmers are nonetheless expected to "*take all reasonable steps*" to ensure cows' welfare. Also, as all EU MS are members of the OIE, they should in principle act in accordance with the standards of that international organisation.[52] Some MS have specific legislation in place regulating husbandry of dairy cows (e.g. Sweden) or have regulated some aspects of it within their national AW legislation (e.g. Germany).[53]

Recently, in the EU several initiatives have been taken by different actors (e.g. farmers, dairy industry, official services, etc), which impact, directly or indirectly, the welfare of dairy cows. By way of an example, in Austria rural development funds have been used for restructuring dairy farms promoting AW.[54] Also, there exist some farm assurance schemes or private standards in some MS that contribute towards the welfare of dairy cows.[55]

3.2.6. Sheep

In the EU there is no specific legislation on the welfare of sheep and their protection falls likewise under the provisions of Directive 98/58/EC. In addition, the Recommendation concerning sheep adopted by Standing Committee of the European Convention for the Protection of Animals Kept for Farming Purposes in 1992 should be observed.[56]

There are some farm assurance schemes or private standards in place in some MS that contribute to ensuring sheep welfare, including a recently established sheep-specific AW label in Spain upon initiative of a national interbranch organisation.[57]

3.2.7. Rabbits

Directive 98/58/EC laid down the minimum standards for the protection of farm animals, including rabbits. Besides this directive, there is no specific legislation for protecting the welfare of rabbits used for farming purposes at EU level. In 2017, the EP adopted a resolution calling on the EC to draw up a roadmap for the development of minimum standards for the protection of farmed rabbits.[58]

Some MS have developed national legislation or recommendations for the protection of farmed rabbits during production. For instance, since 2012 in Austria national legislation has banned the use of cages requiring, among others, the rearing on the floor and the availability of bedding material. In Italy, the NCAs have produced an ad hoc guidance, which has been widely distributed to farmers: the guidance describes good management practices, the expected level of competence of farmers, alongside the minimum size of cages, the availability of space and the supply of enriching materials.[59]

There are some farm assurance schemes or private standards in place in some MS that contribute towards the welfare of rabbits. These include, for instance, private AW labels such as Beter Leven in the Netherlands or Welfair in Spain.[60]

In conclusion, based on the research conducted for the elaboration of this section, the evolution of on-farm AW practices in the EU for the species studied appears to be inherently linked to the adoption of EU and national legislation with self-regulation playing a more limited role, overall.

4. Ex-post evaluation of the EU acquis regulating on-farm animal welfare

The sections below present findings from the evaluation of the implementation of the EU on-farm AW legislation (i.e. the general directive and four species-specific directives) against the standard set of criteria considered for such an exercise: relevance, effectiveness, efficiency, coherence and EU added value. Under each research question, the evidence pertaining to the five directives in scope is summarised and the text indicates which findings apply to which directive more specifically.

4.1. Relevance

Q1 – Do the directives (and related measures, if any) set appropriate objectives and requirements on AW in accordance with evolving scientific evidence?

Only very few interviewees either at EU or national level have been able to express a specific view on where there may be gaps between the legislation and the science. Instead, most of them deferred to the European Food Safety Authority (EFSA) on this matter. A few experts have been consulted in the course of the research project who could formulate views on this matter. Besides, NGOs at national and EU level have also contributed views on this matter.

There is agreement across these stakeholders that the legislation needs to be updated so that it may be better aligned with scientific evidence.[61] The legislation in scope has been adopted many years ago (more than 20 years ago for the general Directive 98/58/EC) and science has progressed since then. The EC shares this view and has sent to EFSA 5 mandates for opinions on AW to be published by 2023, to inform the revision of AW legislation planned under the Farm to Fork strategy. Four of those mandates relate to on-farm welfare for laying hens, broilers, calves and pigs. The Commission's recently published evaluation of the AWS 2012-2015 has also concluded that "the existing legal framework has not been updated with the latest scientific evidence".[62]

The core purpose of Directive 98/58/EC was to incorporate into EU legislation the 1976 European Convention for the Protection of Animals Kept for Farming Purposes. It sets out general principles irrespective of the species but does not set out elements from AW science, which are species-specific. Instead, the wording refers the various actors implementing the directive to "established experience and scientific knowledge". As a result, and following the opinions of several interviewees, the coherence of the directive with AW science cannot be easily assessed.

A few stakeholders (including experts interviewed in the frame of national interviews) have identified elements from AW science that, in their view, should be better reflected in the legislation. For example, there has been a shift of emphasis in AW science towards a more "positive" perspective on welfare, seeking to identify ways of promoting the welfare of animals.[63] Some NGOs therefore consider that EU legislation should not only focus on preventing negative practices (e.g. unnecessary suffering, stress, hunger, thirst, etc.), but also seek to promote a "good" life for animals kept in farms. Such a shift has been already seen in national legislation in some countries (e.g. the latest Swedish legislation[64] aims at "promoting" the well-being of farmed animals). It is also reflected in debates that inspectors in charge of official controls and farmers have on what "animal welfare" means.[65]

Experts and NGOs have also noted that requirements on space allowance for the various species in the directives should be revised to account for advances in AW science.[66] Several NGOs have pointed out that the default density requirements for broilers (33 kg per m^2) as set in the legislation are not aligned with those set out in a 2000 EFSA opinion (25 kg per m^2). This aspect, and the broader issue of caging, is also central to the recent EFSA mandates. Experts considered that the legislation does

not account enough for the importance of manipulative material for pigs, and the benefit to pigs that would come from the generalised use of straw in pig farming while controlling for hygiene risks.[67] AW science has also progressed on the matter of animal tethering,[68] the crating of sows,[69] and the group housing of dairy calves[70], which could be recognised in legislation. Overall, there is general agreement within AW science on most issues in scope of on-farm AW (expert interview), with the exception of the need for pasture, which is a debated matter[71] and one on which there is not much research in a number of MS where farming without access to pasture has been widely practiced.

A criticism addressed to the overall policy approach to AW generally seen across the EU (and exemplified by the EU legislation) is the relative lack of integration between other dimensions of animal farming that have an impact on animals' welfare, such as zootechnics (notably breeding) and the conditions in which animal handlers work. For example, a French report published in 2019 has argued that a "one welfare" approach should apply, which articulates together the welfare of the animals with the working conditions of animal handlers.[72] This echoes previous work compiled for the EP.[73] Similar comments have been voiced in Italy (interview).

Various pieces of guidance have been produced (at EU and/or national level) that supplement EU legislation and have contributed to some extent to addressing gaps in the legislation, although these gaps have not necessarily been about coherence with science, but rather about how the broad requirements of the legislation may be translated and specified for different species. EU guidance on enrichment for pigs and on the prevention of tail-biting[74] has been a useful reference to NCAs and industry in many MS. Italy and Germany have produced rabbit welfare guidance and rules. Italy's are being reviewed to align them better with the latest scientific evidence provided in EFSA's opinion on this matter.[75] Italy has also introduced animal-based measures (ABMs) for assessing AW, which it has incorporated into instructions for inspectors. Similarly, specifications of the legislation have been incorporated into inspector instructions in France to measure lighting and gas in broiler farms. Ireland has issued a number of guidelines on on-farm welfare for the main species farmed in the country.[76] Greece has set out detailed rules for housing of sheep for the implementation of Rural Development Programmes (RDPs) funding support to sheep farmers. Poland has also incorporated into official instructions the recommendations for monitoring of foot pad dermatitis in broilers.

Q2 – Do the directives contain loopholes or unclearly defined provisions, which negatively affect their implementation in practice (thus leading to non-compliance) and the achievement of their objectives? Furthermore, are there any practices of concern in terms of AW that the directives allow for due to loopholes or unclearly defined provisions? What gaps need be filled and/or what provisions should be better phrased to ensure proper implementation of the directives in practice?

Stakeholders disagree on whether and how the current wording of the legislation may be inappropriate. A number of representatives of producers and farmers interviewed at national or EU level did not support the idea that the current legislation may be too vague or unclear. Rather, the flexibility that it provided was welcomed. As an echo to previous disagreements in response to the EU AWS planned action for a simplified legislative framework on AW,[77] these stakeholders considered that the legislation is already setting high standards. A few of them argued that the legislation was too detailed already. In contrast, most stakeholders interviewed (including all AW NGOs, most public officials from various institutions, and AW experts) generally agreed that the wording of the directives could be improved to address gaps, uncertainties, and undue margins of interpretation for all stakeholders to grapple with. This is the view of the majority of NCAs as reported in a consultation carried out by the Finnish Presidency of the European Council in 2020.[78] This criticism has often been addressed to Directive 98/58/EC but has also been made with reference to the pigs directive[79] or the broilers directive.[80] The following section lists the points that have been made by stakeholders in interviews and additional written submissions.[81]

Loopholes and unclearly defined provisions in the directives

General directive

- There are no indications of the acceptable ratio of staff per number of animals per species and per husbandry system;
- The requirements on the level of competence expected of animal handlers are not specified clearly enough;
- The requirements on breeding techniques are too general;
- The requirements on freedom of movement are not specific enough, and "freedom of movement" is not defined; the directive does not indicate when a tethered animal should be released or that when tethered they should be able to lie down and get up easily;
- The frequencies of inspection for animals in intensive or semi-intensive systems is not clearly determined ("shall be inspected at intervals sufficient to avoid any suffering");
- Lighting requirements are vague ("adequate lighting");
- Minimum spacing requirements for cattle are too generic;
- Provisions on mutilations are left to the discretion of the MS; and
- Animal-based AW indicators are not provided for assessing AW on the farm.

Pigs directive

- The use of certain words that introduce flexibility such as "preferably", "sufficiently", "as much as possible", "as far as possible", "sufficient" (e.g. in "sufficient enrichment material") can undermine the effectiveness of the legislation by leaving space for interpretation;
- Provisions on water and feeding facilities are missing;
- Provisions on air quality could be introduced as poor air quality contributes to tail-biting;
- There are no requirements on lactating and farrowing sows, while there are on pregnant sows;
- While the directive states that tail-docking should be avoided and measures taken to prevent tail-biting in undocked pigs (making reference to environmental conditions and management practices), it does not provide detailed information on what measures this corresponds to;[82]
- The specifications on floors for pigs kept in groups apply only to concrete ones, but there are no specifications for other types of floors;
- The directive is lacking animal-based welfare indicators; and
- The directive could have more specific requirement on care of piglets.

Broilers directive

- The broilers directive sets out requirements for the monitoring of various conditions in broilers as part of post-mortem inspection, however it does not define what counts as a serious issue in this regard;[83]
- The broilers directive does not reference bio-assurance and rules of veterinary hygiene;
- The directive lacks specification on how to measure environmental conditions – air quality (nitrogen, CO2, dust), lighting (duration, brightness), "minimal noise"; and
- The provisions on indicators are not constraining.

Laying hens directive

- The directive does not prescribe specific rules for so-called "combined systems" that combine multi-level cages and barn;
- The directive is lacking animal-based welfare indicators;

- Wording such as "adequate" or "proper" can be too vague to enable implementation and monitoring;
- Enrichment requirements for enriched cages lack specificity; and
- Beak trimming could be banned rather than left to the assessment of a veterinarian.

Calves directive

- The rules on feeding do not specify what calves should be fed according to their age;
- The rules on housing are vaguely formulated and there are no requirements for bedding;
- The requirements on watering of calves do not specify that the latter should be "at all times";
- "Freedom of movement" is not defined; and
- Requirements on dehorning/disbudding are vague.

Practices of concern enabled by loopholes and unclearly defined provisions

The weaknesses identified above have been linked to practices that are of concern, as listed below.

General practices irrespective of the species concerned

- Controlling compliance with the directives is difficult due to a lack of specificity, leading to poor and inconsistent monitoring and enforcement across the EU; implementation by farmers/producers is also challenging and inconsistent for the same reasons;
- There are distortions of competition because of the margins of interpretation allowed by the directives;
- Since the directive does not specify the amount of lighting to be provided, the extent of lighting actually experienced by animals in confinement may not be comparable in duration to physical day light;
- Exceptions provided for by the directives allow the perpetuation of undesirable practices such as early weaning of piglets, beak trimming, and other mutilations;
- Genetic selection of rapid growth or high producer breeds and the widespread use of those breeds in EU agriculture has adverse consequences on welfare.

Pigs

- Certain practices, in particular mutilations, have remained widespread in spite of the legislation, because of exceptions built into the directive.[84] Some MS have acted further by passing legislation that goes beyond the requirements of EU legislation (e.g. in Sweden): however, this has also created significant distortions of competition within the EU;
- In the absence of more specific rules, floors can be designed in such a way that piglets find their feet stuck in interstices.

Broilers

- In the absence of more specific requirements on densities, thinning procedures used by producers, whereby they remove some birds from the flock during the production cycle, create the risk of going beyond maximum densities at times, have AW implications (stress, handling) and pose AH/biosecurity risks;[85]
- The absence of specifications for measuring environmental conditions means that is has been difficult and inconsistent to monitor these conditions in the EU;
- In the absence of further specifications in the directive, the monitoring of foot pad dermatitis has been inconsistent and does not follow a harmonised protocol (e.g. on cameras to use and scoring systems).

Hens

- In the absence of specifications in the directive, the enrichment provided to hens in cages has been poor;
- In the absence of further specifications in the directive, the monitoring of environmental conditions has been difficult and inconsistent.

Calves

- Once-a-day feeding of calves, which is detrimental to calf welfare, has developed in Ireland due to a lack of specificity in the calves directive;
- The absence of an explicit requirement for permanent access to water in the directive has contributed to calves not having permanent access to water;
- The lack of specification on bedding material in the directive means that, in some cases, calves have lacked proper bedding.

Beef cattle and dairy cows

- Rapid herd expansion (following the end of milk quotas) without any requirements on staffing in the legislation may raise issues of farmers' capacity to monitor the welfare of their herd;
- A lack of more specific requirements for housing of cattle has been linked to low-cost housing solutions observed that do not provide a proper level of protection in case of adverse weather, and to overcrowding in confined housing;
- The lack of more specific requirements on breeding has been linked with excessive production pressure on dairy cows, production diseases and low longevity;
- The absence of more specific requirements on tethering has been linked with tethering of dairy cows for long periods of time in some parts of Europe.

Sheep

- The absence of specific requirements on mutilations for sheep means that certain practices endure although they have significant impacts on the welfare of the animals (e.g. tail-docking with rubbers without anaesthesia/pain relief);
- A lack of more specific requirements for housing of sheep has been linked to overcrowding in confined housing/stables.

Rabbits

- The absence of specific requirements for rabbits means that official controls for those species have been very low or inexistent;
- The absence of specific requirements for the housing of rabbits has been linked to poor housing conditions.

Additional observations

The literature and interviews point to the way the legislation has been written as contributing to a particular implementation problem: when officials in charge in the MS do not have a good understanding of where the focus should be put, and/or when they apply a formal legalistic approach. The latter leads them to only inspect and enforce specific requirements at the expense of those that are not specific. This can result in both under-reporting as well as over-reporting of non-compliance with relevance to actual AW. It has been noted that the legislation combines different approaches to legal design into the same instrument, such that stakeholders from different legal cultures may see it as either too specific or too general.[86] Besides, as several interviewees highlighted, the lack of specification in the various directives has led some MS to legislate further,

effectively introducing requirements applicable at national level only and therefore contributing to distortions of competition across the EU.

Numerous stakeholders, in particular NCAs, NGOs, and representatives of the industry at EU and national level, have emphasised that all the legislation should be enforceable, and therefore it should set out requirements that can be objectively verified. As noted by experts, ABMs, though desirable, may not be always enforceable and objectively verifiable. The view of NGOs and AW experts is that it is possible to be more specific to formulate verifiable requirements on a number of points, however they also acknowledge that this may not be feasible or desirable everywhere: some issues are too complex to be addressed through a set of very specific requirements. Besides, as noted by experts consulted for this research paper, legislation setting out norms even if those are not easily enforceable can still have value for the signal they send to all parties that some practices are not acceptable. Various stakeholders in Greece and Romania have also noted that any standards on sheep welfare, should they be introduced, should be at a level that sheep farmers in Europe could meet, in spite of the low profitability and low levels of training found in that sector. The standards should also acknowledge the variety of approaches and systems found in the sector. These comments echo more general concerns from producers, who emphasise the need for feasible standards, irrespective of AW standards.

Contributions from stakeholders show that an alternative to excessively general terms may be the formulation of delegated acts at EU level, however, resources have been lacking at the responsible unit of the EC to develop such acts. EU or national guidance may also provide the level of specification required, and the guidance produced at EU level on enrichment materials for pigs was mentioned by several industry representatives, NGOs and NCAs as a positive example in that regard.[87] However, the overall impression emerging from the data is that neither EU nor national guidance has addressed all the shortcomings of the legislation, far from it (for instance, the EC has noted how MS have generally not set out any criteria for assessing hatcheries against the requirements of Directive 98/58/EC).[88]

Among the many stakeholders who agree on the need to revise the legislation, there is disagreement on how it should be revised. Some stakeholders have suggested that Directive 98/58 should be repealed and replaced by species specific directives, while others have suggested that it should be completed by more specific requirements that would cover the gaps identified, while at the same time recognising the limitations of what may be specified in legislation given the wide variety of needs across the EU. A small minority of NCAs and a few industry representatives have expressed a preference for the use of a regulation rather than a directive in this domain.

4.2. Effectiveness

This section presents the findings related to the effectiveness of the directives.

Q3 – Are the objectives of the directives being achieved as a result of the implementation of the directives (and related measures if any) in practice?

Table 3 summarises the objectives of the five directives in scope and the evidence on the extent to which they have been achieved.

Table 3. Summary of the objectives of the five directives in scope and preliminary findings on the degree of their achievement

Directive	Objectives	Notes on degree of achievement[89]
98/58/EC	➢ Ensure the uniform application of the European Convention for the Protection of Animals Kept for Farming Purposes from 1976; ➢ Reduce distortions of competition within the EU and therefore facilitate the organisation of the market in animals and rational development of production.	➢ Disparities across MS remain, denoting a non-uniform application; ➢ Some practices that are discouraged by the directive (such as genetic selection of animals that may have adverse consequences for their welfare) are widespread; ➢ The absence of specific requirements on a number of species, and the delegation of a number of issues (such as mutilations) to national legislation has effectively led to disparities, the adoption of national rules, and to private initiatives that may have distorted competition within the EU; ➢ Vague requirements have led to inconsistent monitoring and enforcement, contributing to distortions of competition; ➢ The absence of specific requirements for rabbits, sheep, dairy cows, beef cattle, turkeys have had several negative consequences for the achievement of the directive's objectives, including poor housing conditions for rabbits and sheep, mutilations for sheep, dairy cows and beef cattle, tethering for dairy cows, etc.
1999/74/EC (laying hens)	➢ Reduce distortions of competition within the EU and therefore facilitate the organisation of the market in animals and rational development of production; ➢ Tackle inadequate rearing systems for laying hens; ➢ Balance welfare of laying hens with health, economic and social considerations, and environmental impact.	➢ There has been a decisive adjustment throughout the industry across the EU as a result of the ban on non-enriched cages in the directive, together with the development of niche markets for higher welfare products on different scales across the EU; the industry has responded differently from MS to MS, with some privileging enriched cages and others barn, free range or organic systems; ➢ The worst caging systems (non-enriched cages) have been effectively phased out thanks to the directive; ➢ Evidence suggests that, while some balance has been achieved across AW and other considerations, that might not be the case for environmental impact.
2007/43/EC (broilers)	➢ Address welfare problems associated with fast growth rates and high stocking densities in broiler production: ➢ Reduce distortions of competition within the EU and therefore facilitate the organisation of the market in animals and rational development of production;	➢ Fast growth rates remain widespread, the systems of production have not fundamentally changed relative to what they were before the directive came into force, with a few exceptions (e.g. in the Netherlands where there was a reduction in stocking density); ➢ The directive has allowed for different rules to apply. Some MS and some private operators have introduced additional standards. Compliance with some of the directive's requirements is poor, particularly on litter;

Directive	Objectives	Notes on degree of achievement[89]
	➢ Ensure those attending to chickens (owners and keepers) have the appropriate knowledge; ➢ Balance welfare of broilers with health, economic and social considerations, and environmental impact;	➢ There has been inconsistent implementation and monitoring of some of the directives' requirements, particularly on environmental conditions (air quality, lighting), due to lack of specificity in the legislation; ➢ Major improvements in welfare of broilers have been due to other factors than the directive; ➢ Economic considerations may have weighed more heavily than welfare impact, such that many stakeholders consider that the welfare of broilers remains a concern.
2008/119/EC (calves)	➢ Reduce distortions of competition within the EU and therefore facilitate the organisation of the market in animals and rational development of production; ➢ Ensure calves' needs in terms of housing are met.	➢ The evidence is limited yet suggests that the rules set in the directive have been implemented in a relatively consistent manner across the EU; ➢ Calves' housing conditions have improved, through major changes to the sector. ➢ Lack of specification for certain requirements appear to have contributed to practices that are unfavourable to the welfare of the calves (feeding, watering, social housing).
2008/120/EC (pigs)	➢ Reduce distortions of competition within the EU and therefore facilitate the organisation of the market in animals and rational development of production; ➢ Ensure pigs' needs are met through housing and enrichment; ➢ Prohibit continuous close confinement of sows; ➢ Tackle mutilations (tail-docking, tooth clipping, tooth grinding, castration); ➢ Balance welfare of pigs with health, economic and social considerations, and environmental impact.	➢ Distortions of competition remain or have increased as a result of pervasive non-compliance in many MS as well as higher standards in some countries and sub-sectors that have been introduced through national legislation or private standards; ➢ Housing and enrichment objectives have been partially met, with more progress to make in order to provide adequate enrichment and favourable housing conditions; ➢ Evidence at this stage suggests that the objective to prohibit the continuous confinement of sows has been met for pregnant sows; it has not been met for lactating and farrowing sows; ➢ Mutilations remain pervasive across the EU in spite of the directive; ➢ Tensions between welfare, health (biosecurity), economics (profitability), social considerations (farmers' workload) and environment (emissions, carbon impact) indicate a lack of balance in intensive farming; ➢ Some research on efficient stock farming systems has been carried out and has delivered tools for farmers; this effort continues, including through national initiatives.

Q4 – What works well and why?

The following key aspects of the directives have been singled out by stakeholders as working well.

Laying hens directive

Stakeholders have noted how those aspects in the directive that are easy to control (because they are specific) are those that work well. That includes notably specifications on equipment. The ban on non-enriched cages has also worked well, and this has been attributed to the strong commitment of enforcing authorities (the EC and NCAs).

Broilers directive

Similarly to what is indicated for laying hens, the elements in the broilers directive that are easy to control have usually worked well. The system of derogations has worked well in the eyes of the industry. Some stakeholders have considered that the use of mortality rates for monitoring AW has worked relatively well although others disagreed, arguing that it was putting a disproportionate burden on farmers. A number of MS have begun using foot pad dermatitis prevalence as an indicator of AW.

Calves directive

The ban on the narrowest veal cages has worked well. Some stakeholders have indicated that the requirement for calves to be able to have visual and physical contact with other calves has worked well, although this is disputed by others.

Pigs directive

The grouping of pregnant sows has worked well thanks to the insistence of public authorities (the EC and NCAs). The provision of enrichment material for pigs has notably increased although that is not generalised.

A detailed and lengthy discussion on the drivers of compliance and improvements in compliance is provided in the response to Q7 below and therefore is not reproduced here. It provides numerous elements of response on why certain provisions of the directives have worked well and have been complied with.

Q5 – What does not work well and why?

General directive

In relation to Directive 98/58/EC, interviews and desk research show that the directive as a whole has not worked well, and there has been a long string of consistent critical comments from a variety of stakeholders on its lack of specificity. A frequent issue has been the lack of specific criteria or guidance either in the directive or at MS level to assess farms across species (e.g. poultry hatcheries) against the requirements of the directive.[90] The lack of species-specific rules has been a major obstacle for implementation and monitoring. Provisions on staff competence and responsibilities have been insufficiently specific to be controlled. Provisions on the need to raise animals with genotypes and phenotypes that are not associated with AW issues[91] have been ineffectual, as demonstrated by the effects of genetic selection in dairy farming and broiler farming: the rearing of dairy cows bred to produce high volumes of milk is widespread and has been associated with illness and reduced longevity,[92] while the rearing of rapid growth broilers has been associated with high mortality, lameness and skin lesions.[93] Provisions for daily inspections of all animals have not worked well for broiler farms, in which they cannot be implemented given the very large flocks kept at any given time in those farms. For similar reasons, provisions on the handling of sick and injured animals have not worked well for broilers either. Provisions on mutilations have not worked well for dairy and beef cattle or sheep. Finally, requirements to keep environmental conditions (in particular air

quality) in such a way that they would not be harmful to the animals have not worked well, particularly in broiler and pig farms, because no parameters have been set on ways of measuring those conditions.

Broilers directive

The broilers directive has been often singled out in reports[94] and interviews as not having had much of an impact on AW or other dimensions, notably because it did not introduce significant requirements for the industry but rather validated to a large extent existing practices at MS level. Moreover, a number of more specific dispositions have not been implemented or have not worked well:

- The monitoring of broilers is not working as expected. As of 2017, only 20% of them were covered by an effective and complete monitoring system;[95]
- The joint requirement to provide at the time of slaughter both records of daily mortality rates and cumulative daily mortality rates has been considered too burdensome by industry and public authorities;
- The verification of air quality and lighting requirements has not been carried out appropriately because of a lack of clear compliance criteria for inspectors to use;
- High mortality rates appear to be rarely investigated by public authorities;
- The litter is often not dry and friable;
- The provision in the broilers directive for the introduction of a mandatory label was not followed up;
- Work on AW indicators for broilers, also envisioned by the directive, did not progress as intended;
- Inspections at slaughter have not been done everywhere.

Laying hens directive

EC audits, the literature and interviews have pointed out that the nature and quality of the enrichment in "enriched cages" for laying hens has been an issue, for instance in France and Poland.[96]

Pigs directive

The requirements on mutilations have not worked well, as a result of exceptions to the requirement being built into the directive and poor enforcement in many MS. Practices such as tail-docking and castration have remained routine in most of the EU in spite of the intentions to the contrary of the directive. In spite of the progress achieved on access to water and enrichment, this has not worked well in some countries, notably due to reluctance from farmers and low enforcement.[97]

Calves directive

There is mixed evidence suggesting that requirements on visual and physical contacts between calves have not been working well everywhere, although it is unclear why. Feeding and watering have also been issues, with reports of calves being underfed and not having sufficient access to water.

Q6 – Which practice(s) involve(s) the highest number of persistent non-compliance cases under the directives in each of the examined MS?

To address this question the research team has reviewed the evidence on compliance available in the public domain and has contacted stakeholders to seek further data. The data collection methodology in this regard did not involve any auditing of farms, NCAs or any other actor involved in the implementation of the EU legislation included in the scope of this research paper.[98]

The evidence on non-compliances with AW legislation is limited and has many limitations, as has been noted by numerous sources.[99] That is because the frequency of official controls on farms is highly variable across MS and species and can be extremely low in some MS. The evidence collected suggests that, across the sample of MS considered, and notwithstanding variations across species in each MS, the frequency of inspections has ranged from as low as 1% of farms, to 5% or 15%, to a high of around 30%. Occasionally, some sectors have been the subject of very high inspection frequencies (above 50%) either because of a particular risk identified in the sector, or to ensure compliance with new requirements, either AW related or not. This has notably been the case in some countries to enforce compliance with the regrouping of sows under the pigs directive, the ban on non-enriched cages under the laying hens directive, and the ban of solitary confinement for calves beyond 8 weeks under the calves directive. Such campaigns of inspections aimed at putting pressure on farmers to implement certain changes. Their irregularity means that they did not contribute to providing information on the scale and nature of non-compliances over time. Certain species, in particular those that are not the subject of any specific directive (rabbits, sheep, turkey), appear to be the subject of very limited, ad hoc controls. Rabbit farms have generally not been subject to any official controls in France and Portugal (although they are among the main countries producing rabbit meat in the EU), while, according to official records, more than 3% have been subject to official controls in Italy. Dairy farms have tended to be inspected very rarely, as highlighted by the EC[100] and confirmed by national interviews. As mentioned by one interviewee who is also an official inspector, when inspection rates are very low, all they can do is "bear witness" to what may be happening on the ground, but they are unlikely to achieve anything else. Accordingly, various sources have noted that compliance figures communicated by public authorities may provide a false impression of the scale of (non-)compliance. A number of NGOs have argued based on their own investigations that non-compliances with EU legislation are at a different, higher scale than may appear from official records (e.g. in the Netherlands, in France).[101] Another consideration affecting the comparability of compliance data is the specific approach that each NCA has used to prioritise official controls. The assumptions underpinning enforcement approaches are inconsistent across countries, making comparisons impossible.[102] Only few MS have used slaughterhouse data to monitor the welfare of animals and use that data to prioritise controls on farms (EC 2017b).[103] The evidence emerging from EC audits is also relatively dated since only few audits on on-farm AW have been completed recently. Annual reports on official controls published by the EC[104] also provide scant information on the nature and severity of non-compliances with AW legislation found in MS.

These observations on the quality of official data to assess compliance with EU legislation are not specific to AW legislation. Similar limitations are found in other policy areas too. For the present evaluation, it means that the findings presented in this section are based on a combination of sources, which vary in nature and quality from one MS to another. In the absence of any detailed records of the type and frequency of non-compliances found, national interviews have been a core source of information in some MS. During interviews, some farmer representatives, though not all, have sometimes reported that there were no compliance issues with the legislation for their sector. When there was credible evidence to the contrary (i.e. non-compliances reported by interviewees from organisations conducting audits/inspections or desk research), that evidence has been incorporated into the table. When official figures have been shared with the study team, those are often aggregated figures under common headings (e.g. "housing") rather than data identifying specific non-compliances and how many of those had been found. It is also worth highlighting here that the manner non-compliance has been assessed by NCAs can vary as a result of different interpretations of what counts as acceptable or not. Such differences in interpretations of legal requirements are sometimes brought to light in audits conducted by the EC.[105] This means that, as noted by socio-legal scholars,[106] official inspectors use a 'working definition of compliance' that can vary from MS to MS, and may vary from the definition of compliance that others (NGOs, EC) may use. A few rare differences of appreciation of this kind were apparent in the data collected through

interviews. The data obtained is therefore essentially qualitative and should be interpreted with these caveats in mind. It does provide an imperfect answer to the question of which non-compliances have been the most frequent or persistent. The table below summarises the data collected, reflecting those species which the data collection focused on for each MS.

Table 4. Non-compliances for each MS

MS	Pigs directive	Laying hens directive	Broilers directive	Calves directive	General directive			
					Cattle	**Sheep**	**Rabbits**	**Other species**
Denmark	Tail-docking Enrichment Record keeping on treatments and mortality	N/A	N/A	N/A	N/A	N/A	N/A	Handling of ill and injured animals Record keeping Daily checks on animals
France	Tail-docking Enrichment Permanent access to water	Pecking and scratching areas Beak trimming	Litter Daily mortality reporting Daily mortality target Beak trimming Lighting	Eye and physical contact between calves Haemoglobin levels Watering	Dehorning	Mutilations	Housing	Ventilation/ air quality (broilers) Handling of ill and injured animals
Germany	Tail-docking Enrichment Confined dry sows	Pecking and scratching areas Beak trimming	Litter Beak trimming Density	Feeding Space available Flooring	Tethering Dehorning	No data	No data	Ventilation/ air quality (broilers) Handling of ill and injured animals
Greece	N/A	N/A	N/A	N/A	N/A	Buildings Materials likely to cause injuries	N/A	N/A
Ireland	N/A	N/A	N/A	Feeding Watering	Record keeping Overcrowding in cubicles Dehorning	N/A	N/A	N/A
Italy	N/A	Housing Density Lighting Record keeping	N/A	Eye and physical contact between calves Feeding Watering Tethering	Housing Overcrowding Freedom of movement	Housing Record keeping Feeding Watering	Housing	Record keeping Mechanical and automatic equipment

MS	Pigs directive	Laying hens directive	Broilers directive	Calves directive	General directive			
					Cattle	**Sheep**	**Rabbits**	**Other species**
				Provision of bovine colostrum				
Netherlands	Tail-docking Enrichment material Castration without pain relief	Beak trimming	Litter Density Lighting Daily mortality reporting Daily mortality target	Dehorning	Tethering			Ventilation/ air quality (pigs, broilers) Daily inspections Handling of ill and injured animals
Poland	N/A	Equipment (for feeding, watering, perches, nests) Density Scratching and pecking areas	Density Lighting Record keeping	N/A	N/A	N/A	N/A	Ventilation/ air quality Equipment Handling of ill and injured animals
Portugal	N/A	N/A	N/A	N/A	N/A	N/A	Record keeping Housing	N/A
Romania	N/A	N/A	N/A	N/A	N/A	Staffing and qualifications Record keeping Mechanical/automated equipment Feeding Watering Daily inspections	N/A	N/A
Spain	Tail-docking Enrichment	Pecking and scratching areas Beak trimming Sand baths Density	Litter Density	No data	No data	Housing Handling Feeding	Handling of ill and injured animals	Record keeping (broilers) Staff competence (broilers)

Legend: N/A – Not applicable | Source: Desk research and interviews

Besides the information presented in the previous table, the research team has also collected anecdotal evidence, which was not always confirmed by another source. In a context in which very few or no official controls have been carried out for some species, and, as demonstrated in various cases of official audits carried out in response to such evidence, anecdotes may point to more widespread problems. Specifically, the following elements have been noted:

- Reports that there may be cases where rearing of rabbits and fattening of pigs is being conducted in complete darkness in France;
- Reports of confinement of calves in individual cages beyond 8 weeks in Poland 107 and France;[108]
- Possible low incidence of tail-docking of cattle in Ireland.

Although the evidence summarised above suggests common issues across MS, interviews and further documentary evidence point to significant differences in the manner the same requirements are interpreted across MS. For instance, on enrichment for pigs, the qualitative evidence suggests that rules on enrichment have been implemented to a higher standard in some pig producing countries than others. The evidence suggests that, in Denmark, the wording of the legislation and the EU guidance that followed have been used to drive farmers to provide manipulable materials of better quality than in France and Spain,[109] where there has been a tolerance for the use of materials that are "marginal" or "sub-optimal" such as chains.

Q7 – What are the root causes for this/these non-compliance case(s) and their persistence in each of the examined MS? Is/are the persistent non-compliance case(s) common for the examined MS or not; if indeed there is a common trend, do the examined MS share the same root causes; if ever there are improvements in terms of this/these non-compliance case(s) what measures have led to these improvements in the MS?

Root causes of non-compliances

Convergent evidence from the desk research, EU-level and national interviews suggests that a number of root causes of non-compliances are not country-specific but rather relate to structural issues that are found almost everywhere.

Firstly, **the relative complexity of requirements,** or rather the set of issues that need to be addressed in order to fulfil the requirements, can explain why some are complied with while others are not. This is vividly illustrated by the contrast between the high level of compliance with the ban on non-enriched cages for laying hens, and the persistent low level of compliance with tail-docking. Banning cages has been a straightforward change, which could be implemented and controlled easily, at a cost. In contrast, requirements on mutilations, in particular the interdiction of tail-docking in pigs, have been challenging to implement. The interview evidence from all the large pig meat producing countries (Denmark, France, Spain, the Netherlands and Germany) and the relevant literature[110] consistently show that the persistent practice of tail-docking is due to a combination of factors. Some are inherent to AH and AW: the risk of tail-biting is the main reason for tail-docking, and farmers are faced with an ethical choice between docking all their herd to avoid tail-biting, or risking that a proportion of their herd may suffer from tail-biting, which negatively affects animals' welfare, health and hygiene. Tail-docking however is not a foolproof solution to tail-biting, as some tail-biting occurs also in tail-docked herds. Tail-biting is associated with housing conditions, in particular high densities in confined housing (which are allowed by the legislation) and slatted floors, both of which are commonly found across intensive pig farms as they provide control to the farmer. Since densities affect greatly the economic output of the farm, reducing densities is perceived as risking the profitability of the farm. Switching away from naked slatted floors to plain floors with enrichment (e.g. straw) also entails greater workload for the farmer, as straw needs to be changed regularly. More importantly, stakeholders from the pig farming industry from various countries emphasise in interviews the uncertainty of rearing pigs with full tails. For pig farming to

switch to undocked herds, a number of changes would need to happen together at farm level, but also in the market for pig meat so that additional efforts and possible losses are covered financially. For instance, the EC in a report on audits on pig farms in Portugal emphasised that switching to undocked herds without changing also the environment in which the animals are reared may lead to undesirable outcomes.[111]

A **lack of understanding** of legal requirements and a **lack of knowledge** about how to comply with them is a widely reported cause for non-compliance **across the whole animal farming sector** in the EU.[112] National data shows stakeholders generally agreed it was a cause of non-compliance in France, Denmark, Ireland, Italy, Portugal, Romania, Spain, Germany and the Netherlands. The literature points also to misperceptions and misunderstandings about certain practices that persist, although they are not beneficial and undermine the welfare of the animals (e.g. tail-docking in cattle).[113] Stakeholders in France, Denmark, Greece and Italy noted how lack of awareness of misperceptions of AW tended to affect the older generations of farmers more, who were also more reluctant to make significant changes to their ways of doing or their buildings at a late stage in their career. This issue of poor knowledge and awareness can be also linked with **professional cultures** that do not acknowledge the importance of AW, the value of scientific research in that field, or reduce AW to AH. Such cultural obstacles have been noted in the broiler sector in Poland and the pig sectors in France and Denmark. The literature points more broadly to differences of perceptions and understanding of what AW is across different segments of the same sector, e.g. organic, under label, and conventional.[114]

A major factor discussed extensively in the literature and in interviews is the farmers' goals to maintain **profit margins.** Indeed, there was wide agreement between stakeholders that the economic environment in which farmers operate is a fundamental driver for non-compliance with AW legislation. In other words, an economic "model" subjects farmers to such constraints that most of them are not in a position to make the changes the legislation requires them to make. There are widely different situations across MS and sectors in this regard. According to some stakeholders (EC, NGOs, industry representatives in MS) and country-to-country comparisons,[115] this economic pressure is stronger in those sectors and countries that export a significant share of their production, and this tends to be reflected in worse compliance outcomes (e.g. Ireland on dairy and calves,[116],Denmark on pigs, France on broilers). Preserving profit margins has been a major argument for opposing regulation by some (though not all) farmers' organisations, and was often referenced by other stakeholders (such as NGOs or NCAs) as a major driver for non-compliances in Germany, the Netherlands and France. Overall, farmers' representatives in Denmark, France, Greece, Ireland, Italy, Romania, Spain and the Netherlands have blamed a lack of monetary incentives (either public funding support or better prices for their products) to explain the non-compliances found in those countries. In some sectors and countries, this has been associated with poor coordination and high competition within supply chains (e.g. pig meat and eggs in France).

The above translates in practice in the **avoidance of workload/operational costs** that the farmers would experience if they complied. Enrichment for pigs is an example. Enrichment of the quality recommended by the legislation needs to be regularly renewed, which entails additional workload, and costs to replace the materials. Another example is the quality of the litter in broiler farms, which, according to the legislation, is to be friable and dry. Regularly changing litter to remove dejections and excess humidity can address this objective. Yet the quality of the litter is a noted issue in the Netherlands, Germany and France. Some businesses have sought to increase the temperature in farms to remove excess humidity instead. Some improvements in litter quality have been associated with the growing exports of chicken feet to Asia, which have somehow aligned the economic interests of the producers with the AW of the birds. The importance of economic considerations for compliance translates also into the **avoidance of investments in buildings and equipment** (e.g. to reduce densities/increase the space available to the animals; allow group housing; improve

lighting, ventilation) in a range of sectors and countries. The reluctance to install equipment to provide constant access to water to pigs in France over many years (based on the argument that providing liquid feed sufficed to address the pigs' needs) after the pigs directive entered into force provides an example in this regard.

While maintaining profit margins is an important factor, the qualitative evidence suggests it is rarely the only reason. The **structure of the livestock sector** can be another factor contributing to non-compliances. It has proved easier to drive highly integrated and concentrated poultry farms across the EU to comply with the requirements of the laying hen directive, and to achieve positive changes in highly integrated veal farms in France, Belgium, Italy and the Netherlands in the context of the calves directive, than to see the many smaller family pig farms found across the EU complying with the requirements of the pigs directive, or small sheep farms in Greece to comply with the requirements of the general directive. Some challenges that are found at the micro level, such as the relative isolation of farmers, are not specific to particular countries or sectors, but they are particularly strongly felt among dairy and sheep farmers. Some stakeholders, both at the EC and in the MS (across NCAs and industry), have also noted how a lack of integration across supply chains has been associated with non-compliances: the opportunity to use post-mortem inspection data to drive changes at farm level may be missed when there is not sufficient communication and coordination across the different stages of the supply chain, and across public and private actors (this is a problem in a majority of MS; it is particularly acute in the French pig sector, but much less so in the German pig sector). Some stakeholders (NGOs in particular) have noted that the size of the sector may be one of the factors contributing to compliance (or non-compliance), often making reference to the example of Finland and tail-docking. This is not a well-supported hypothesis, however, partly because other factors have been documented to explain why Finland may be doing better than other countries (notably culture, a tradition of dialogue and cooperation across different spheres of society, enrolment of farmers into change programmes, an industry focused on the national market rather than exports, and an ambitious legislation), but more strikingly because Finland did experience a rise in tail-docking in national pig farms after joining the Single Market, which then led to a legal ban on tail-docking in 2002, as a response to this increase in tail-docking.

The manner different MS have monitored and enforced the legislation has been noted and commented on repeatedly in previous reports. A general lack of enforcement (often combined with too few controls) was blamed by national stakeholders (NGOs, academic experts, sometimes NCAs) for non-compliances found across sectors in Ireland, Poland, Romania, France, Germany and the Netherlands. Gaps in enforcement were among the reasons for launching the AWS 2012-2015, which aimed at improving the manner NCAs implement the legislation.[117] The literature available provides glimpses of these variations through studies carried out in France, Denmark and Ireland.[118] These variations are due to different factors: legal culture and inspector know-how, which shape the manner inspections are conducted, resourcing (which greatly determines how frequently farms are inspected), assumptions underpinning the risk-based approach to inspecting farms (which determine the frequency of checks), and the policy toolkit, such as checklists,[119] but also sanctions, which influences the feasibility of escalation or not in the face of non-compliances.[120] In the view of some stakeholders (e.g. EU institutions), there is a legalistic approach in Eastern Europe that means giving greater weight to prescriptive requirements, and this shows in the manner controls are carried out. Similar observations have been made in France, where official inspectors were found sometimes to put excessive emphasis on formal aspects (record keeping in particular) at the expense of other requirements.[121] This does not necessarily agree well with the manner the EU legislation has been designed, in the sense that the latter often includes general requirements on many aspects. This way of writing legislation reflects to some extent the legal and enforcement culture of some Western European countries (such as the UK's). It has also been said by the same stakeholders that the toolkit of sanctions set in the regime and the manner it has to be applied (e.g. through a court decision in some countries as opposed to an administrative decision in others) may have been an obstacle to enforcement and resolution in some MS (there is anecdotal evidence that

this could have been the case in Spain, Poland and the UK). In some countries, non-compliances may remain unaddressed because of shortcomings in the regulatory regime specific to the MS, although progress has been made over time. The literature also suggests that inspectors conducting official controls may be uncertain about their role and the approach they should take to enforce the legislation and drive farmers towards compliance.[122]

More broadly, the evidence collected through interviews points to differences in the level of **political commitment** to achieving better on-farm AW seen in the manner some countries have implemented the legislation. Thus, while new legislation has introduced stricter requirements for on-farm AW in Denmark, Germany, Sweden, or Finland, the implementation of certain requirements in other countries such as Spain or France – e.g. in the latter, the provision of permanent access to water and suitable enrichment material in pig farms, or the reporting of daily mortality rates in broiler farms – has been delayed by debates and requests for scientific opinions. This is a changing landscape with countries historically less committed to AW – such as France, Italy or some central and eastern European countries – taking steps in recent years towards more ambitious policies, such that the outlook presented here could well be significantly different in a few years' time.

Finally, interviews suggest that the **national legislative framework on land use** has been a hindrance to investing in AW in Greece and Romania, and rules on public funding support to sheep farmers in Romania have been set out and implemented in such a way as to discourage investments, which in turn has had a detrimental effect on compliance.

Drivers of compliance improvements

The state of play on AW across Europe has been often painted, in broad strokes, in terms of "leaders" in the North and the West, and "laggards" in the South and the East. For example, in Sweden, compliance was the result of national legislation that pre-dated the EU legislation. However, some stakeholders (EC, EU-level NGOs, national NGOs) have noted how some countries that tended to be less advanced in their implementation of AW policies (Italy, France, Poland, Hungary, the Czech Republic, Ireland) have undergone notable changes at some levels, and particularly at a political or legislative level.

The latter improvements as well as those seen in countries that have historically been better performers have been driven by a variety of factors. The evidence points to different paths towards better AW, rather than a "one size fits all" formula. This is not surprising given the diversity of circumstances observed in the EU,[123] although some commonalities are observed.

There is wide agreement across EU and national stakeholders that **a more active civil society** has been a driving force behind improvements in Spain, France, Germany, Poland, Ireland, Italy, Denmark and the Netherlands. Public authorities have increasingly worked with **NGOs** to improve AW, which is also reflected in the development of national action plans or strategies (with the encouragements of the EC) to tackle AW issues, as seen for instance in France, Ireland, or Denmark. The relative importance of NGOs has varied from country to country and from sector to sector, and their role as well (from whistleblower to partner). The tone of the conversations that have helped bring forward improvements has been tense in some places (e.g. on the subject of pig welfare in France), and collaborative in others (e.g. on the same topic in Denmark).

The role of **official controls** (including links to the conditionality of CAP direct payments) has been highlighted in Italy, Spain and Denmark as an important driver for improvements, and also in Ireland, Romania and Poland although some stakeholders consulted in these countries disagreed on the actual impact that official controls have had there.

Training courses in Spain, Italy and Ireland, and **funding support** (in particular through RDPs in Ireland and Greece) have been highlighted as key contributors to improving practices as well as

buildings and equipment. However, it has been noted that **discrete actions alone can have limited impacts** unless they are accompanied by additional measures. This was demonstrated by the scandal of mistreatment of undocked pigs from farms receiving a bonus for not docking tails in Lower Saxony in Germany, which has been funded via RDP.[124] Rather, initiatives such as roadshows led by farmers speaking to other farmers, and which combined AW with other concerns or issues (e.g. antibiotics use, AH) have been particularly effective (e.g. in Finland).[125] Ambitious programmes that tackle a range of issues together and provide different kinds of support, accounting for what may be driving persistent yet undesirable practices,[126] rather than discrete measures, may be required to drive improvements. Interviewees from Spain as well as Denmark noted how collective initiatives that brought together the different stakeholders (industry, researchers, NGOs, NCAs) have proven particularly successful. Stakeholders from Germany, Denmark and the Netherlands noted how initiatives involving farmers, veterinarians and researchers have contributed to improving tail-docking practices, with the support of dedicated risk assessment tools. Although banned by the legislation, tail-docking is widely practiced and such initiatives have aimed at ensuring that it is done in a manner that minimises the risks to the health of the pig and its welfare. Research on calf feeding has also been praised for driving improvements on that matter in Ireland.

The Danish AW labelling initiative as well as **private initiatives** (assurance schemes) have been associated with improvements in AW in France (for broilers and laying hens), Germany, Ireland, Denmark and the Netherlands. Their relative impact has varied, and it has been arguably more significant in the Netherlands than in other countries. Another example is the Swedish initiative to label pigs raised and slaughtered in Sweden, which implicitly refers to the Swedish standards of AW, which are higher than those in other MS (reflecting EU legislation as well as national specific rules) exporting their products to Sweden. This initiative has driven prices higher but it has also received the support of consumers, and, as such, has provided returns to farmers, which have enabled them to maintain and in fact grow further their activities.

Q8 – Do the examined MS have a record of granting derogation(s) from the requirements of the directives (if such derogations are foreseen by the directives)? How frequently is/are this/these derogation(s) applied, for which practices and does this lead to deviation from the objectives and requirements of the directives?

The derogations specified in the directives are:

a) Pigs directive:
   - Art.3(4) "Member States shall ensure that sows and gilts are kept in groups during a period starting from four weeks after the service to one week before the expected time of farrowing. The pen where the group is kept must have sides greater than 2,8 m in length. When fewer than six individuals are kept in a group the pen where the group is kept must have sides greater than 2,4 m in length. By way of derogation from the first subparagraph, sows and gilts raised on holdings with fewer than 10 sows may be kept individually during the period mentioned in that subparagraph, provided that they can turn around easily in their boxes".

b) Broilers directive:
   - Art.3 (3) "By way of derogation from paragraph 2, Member States may provide that chickens be kept at a higher stocking density provided that the owner or keeper complies with the requirements set out in Annex II, in addition to the requirements set out in Annex I;
   - (4) Member States shall ensure that, when a derogation is granted under paragraph 3, the maximum stocking density in a holding or a house of a holding does not at any time exceed 39 kg/m2;

- (5) When the criteria set out in Annex V are fulfilled, Member States may allow that the maximum stocking density referred to in paragraph 4 be increased by a maximum of 3 kg/m2".

On the first set of derogations provided for in the **pigs directive,** the evidence collected for this research paper suggests that, in the MS examined, this derogation has generally not been granted. This is due to the fact that pig farms would usually be too large to be eligible for such a derogation. An overview of the implementation of the pigs directive published in 2010 noted that derogations on the grouping of sows had been incorporated into the legislation in Germany and Austria.[127]

Regarding the second type of derogations, on densities in broiler farms, a study completed in 2017 estimated that, at that time, only 34% of broilers were housed at the default stocking densities set in the broilers directive, while the rest were housed at the densities allowed by derogation.[128] Specifically, the low stocking densities were found in Austria, Denmark, Germany, Sweden and the UK, where public authorities did not grant derogations. 55% of all EU broilers housed at the highest density were in France, and 18% in the Netherlands. It is not clear whether the added welfare conditions that operators need to comply with according to the directive in order to stock at higher densities are indeed being met.[129]

The evidence[130] shows that stocking density alone does not determine the welfare of broilers, such that animals kept at higher densities than the default value set in the directive may have a good level of welfare if other conditions are also met (housing, good ventilation, litter quality, good hygiene, good biosecurity, good water quality and appropriate lighting). However, density has relevance for AW: NGOs, experts and some NCAs and farmers organisations have noted that higher densities have been associated with health issues (notably due to increase in faecal material) and AW gradually deteriorating (affecting, among other things, the possibility of undisturbed rest for the birds). The impact of the derogations therefore depends on how they interact with other conditions in the broiler farms and the manner those are managed and operated.

Q9 – Which steps has the Commission taken to enforce compliance and with what effect?

There was in the early 2010s widespread agreement that the legislation was not being enforced by MS authorities, and as a result it was often not complied with. One of the leading objectives of the AWS that the EC launched in 2012 was to address this issue. It is not in the power of the EC to directly enforce compliance with the legislation, as it is MS' responsibility to do so. Therefore, EC's enforcement actions have been aimed at the MS themselves. They have included a combination of initiatives to support and develop capacity in the MS to monitor and enforce, audits and follow-up letters seeking MS intervention to address the shortcomings identified in audits, as well as infringement procedures against MS for failure to implement the legislation.

The external study prepared in support of the recent EC's ex-post evaluation of the AWS 2012-2015[131] and the subsequent EC evaluation[132] have concluded that the actions of the EC in that respect were sometimes decisive in achieving better compliance, in particular in relation to the grouping of sows under the pigs directive (for which the EC launched infringement procedures against 13 MS) and the laying hen directive (there too infringement procedures were initiated against 13 MS). For both of those directives, the EC also launched several "pilot dialogue schemes" and encouraged the development of national action plans to drive improvements at national level. The EC's efforts in relation to tail-docking – which continue to this day[133] – have been notably less effective. The evaluation also concluded that the EC efforts developed to enforce the broilers directive, which consisted principally in audits, reports, and training, contributed only to a medium extent to improved enforcement of the directive.

Q10 – Are the relevant EU requirements on AW respected when it comes to imports of animals or animal-based products from third countries?

The legislation in scope does not impose requirements on imports of live animals (with the exception of the pigs and calves directives) or animal-based products from third countries. Furthermore, the legislation on official controls on food products, including controls on products of animal origin and on the introduction of products of animal origin into the EU (notably Regulations (EC) No 854/2004[134] and 882/2004,[135] replaced by Regulation (EU) 2017/625,[136] and Directive 2002/99/EC)[137] does not set out requirements on AW at farm level that third country producers would have to comply with. Some elements on AW have been incorporated into bilateral agreements: however, the impact of those agreements on practices in third countries is not clear to stakeholders. Examples have been provided to the research team in the course of the project, which representatives of producers in particular have used in interviews to communicate the challenges of raising standards in the EU, while keeping an open door to imports from third countries where similar standards do not apply. It has been reported that Ukrainian eggs, produced under conditions that have been banned in the EU, are often exported to the EU. Parts of broiler meat also produced in Ukraine have also been the subject of much comment after a legal loophole was being used by a Ukrainian producer to get around restrictions set in the EU-Ukraine trade agreement.[138] Some Italian rabbit producers have also moved operations to Albania in order to produce at lower costs.

4.3. Impacts

This section presents the findings on the impacts of the directives. It first explores the impacts stemming from the species-specific directives, and then the impacts from the general directive. In the absence of indicators clearly defined to assess the AW impacts of the directives, the assessment of impacts is not structured according to systematic and quantitative measures. Furthermore, evidence for some types of impacts, in particular economic, social, and administrative impacts, is limited in the evidence base. Wherever appropriate, environmental impacts have also been considered in parallel to the impacts explicitly mentioned in the two research questions.

Q11 – In the context of each of the four "species-specific" directives, what are the impacts from the implementation of the directive on AW? Furthermore, aside from AW impacts, what are the economic, social, administrative, public health impacts stemming from the implementation of each "species-specific" directive?

Broilers directive

The directive has been considered by a few stakeholders to have had some positive impact on the welfare of broilers, although this has not been measured objectively/substantiated. There is disagreement on this point, with many NCAs, NGOs, experts and the EC pointing out that the directive did not fundamentally change systemic issues that affect broiler welfare, and that a number of its provisions are not being fully complied with (including density and mortality targets, litter quality, environmental conditions). Evidence from country case studies suggests very limited impacts in France, Italy and Spain.[139] There have been better housing conditions, litter quality and better access to water and feed in Poland. Stocking densities have been reduced in the Netherlands, which could have benefited the welfare of broilers. The evidence suggests that the main improvements to welfare, however, have been due to efforts to improve flock health (i.e. to reduce footpad dermatitis), and through initiatives to tackle antimicrobial resistance and reduce the use of antibiotics in flocks, rather than through inspections to enforce the directive. Interviews and reports[140] also suggest that the impact of the broilers directive has been limited as it reflected by and large practices that already existed. The investment costs required to comply were thought to be minimal in Italy, Spain and France because the industry there had already made the changes that the directive sought to achieve before it entered into force; it is unclear whether those earlier

changes were driven by the anticipation of the directive or not. Representatives of the French broilers industry indicated that the requirements of the directive contributed to reducing profit margins [141] and were a factor among others that contributed to the closure of some export-oriented broiler farms in France. In Poland, a modernising broiler sector experienced a slowdown in efficiency gains as a result of limits set by the EU directive on stocking densities.[142] Investment costs were more significant in the Netherlands where densities had been higher. The broiler sector in the Netherlands experienced further changes in the period following the directive, leading to a higher welfare segment that eventually applied to the whole internal market, although those changes were not due to the directive but rather to a combination of initiatives from NGOs and retailers and readiness to change throughout the value chain.[143] The directive was meant to have some impact on the flow of information between slaughterhouses and farms, so that indications of poor welfare found at slaughter may be used to drive improvements on the farm. This is only practiced in a few MS, however.[144]

Pigs directive

The impact of the pigs directive has been mixed. While significant progress has been achieved on the group housing of sows and on the provision of manipulable material, which can be assumed to have led to improvements in the welfare of animals, a number of core issues remain unresolved, in particular mutilations (tail-docking and castration).[145] The impact has been uneven across the EU, with representatives of producers in some countries (e.g. Denmark, Sweden) seeing themselves at a disadvantage relative to their competitors within the EU because they are compliant but others are not. The manner different MS (and the economic operators) responded to the directive has varied greatly, with some countries seeing minimal changes while others experienced more ambitious upgrades of the sector's buildings and equipment. Farmer representatives in Spain, France and Denmark all reported increases in production costs. Working conditions in Spain and France were not said to have improved. A few farmers were reported having stopped operating at the time in these three countries, though the exact figures are unknown.

Calves directive

Although there is limited evidence on the impact of the calves directive, owing to the dated nature of the changes in scope (most were introduced in 1997 as a result of a modification of the previous 1991 directive; these changes were then codified in the 2008 directive on calves), there is a general agreement across stakeholders that the directive has led to significant changes in the rearing of calves, in particular a ban on narrow veal cages. It has driven a systemic change in the housing of calves raised for meat. The welfare of the animals has improved relative to what it was under the previous systems. Evidence from France, one of the main producer and consumer countries of veal meat in the EU, suggests that the directive drove changes to the sector, which is highly integrated, with fewer but bigger operators.[146]

Laying hens directive

The laying hens directive has been hailed as a successful legislative act of the EU, leading to the ban of the cages having the greatest negative impact on the welfare of those animals (i.e. non-enriched cages), and encouraging – together with marketing standards for eggs – the development of what was then referred to as alternative systems. The impact of the directive on the environment is debated, and some evidence in that regard suggests that it may have had a negative impact.[147] Depending on the MS, the implementation of the directive has led to more or less rapid adaptations and reorganisations of the sector. Some countries were late implementers and experienced reductions in their capacity as a result of the transition from traditional cages to enriched cages (this was the case for Poland and France). This was followed by a rebound and excessive capacity in France as some farmers increased the size of their buildings to maintain productivity, while others

transitioned to alternative systems.[148] While the sectors in some countries invested in enriched cages (e.g. France, Poland), others transitioned towards loose-housing systems (e.g. Germany, Austria). There is disagreement on whether these alternative routes have been positive moves in the long term. Some stakeholders, in particular NGOs, have noted the trend towards banning cages altogether in egg production, which suggests to them that investing in enriched-cage systems was not the right strategy. Indeed, in interviews, industry representatives highlighted that investments made by farmers in this regard in France have not all been repaid such that any future legislative change banning cages altogether would be difficult for some of them to shoulder. On the other hand, representatives from the poultry industry in France and Germany agreed that moving massively towards loose-housing systems rather than enriched cages also meant that the segment of the consumer population not willing to pay a premium for eggs was therefore turning to eggs produced in enriched cages in the EU or in traditional cages in countries in the EU periphery (notably Ukraine).

Public health impacts – all species-specific directives

While there is compelling evidence on the link between public health risks and intensive farming (in particular the relationship between high densities and zoonoses, or between early weaning and antibiotics use), the evidence available is not of a nature that enables characterising the specific impact that the implementation of the species-specific on-farm AW directives may have had on public health in the EU. Instead, the evidence suggests that most progress on practices that may have a public health impact (such as reductions in the use of antibiotics in pig farming in Finland or the Netherlands and broiler farming, which may then lead to reducing the risks of antimicrobial resistance) have been due to other initiatives and factors than to the implementation of the directives.

Q12 – In the context of the "general" directive, what are the impacts from the implementation of the directive on AW for the examined animal species? Furthermore, aside from AW impacts, what are the economic, social, administrative, public health impacts stemming from the implementation of the "general" directive for the examined animal species? Has the lack of specific rules (i.e. lack of "species-specific" directives) for the animal species (examined in the context of the "general" directive) led to any particular negative impacts in terms of AW, economic, social, administrative, and public health impacts? Based on this assessment, which animal species (from those examined, and, if possible, from those farmed across the EU in highest numbers) are most in need to be covered by specific rules?

EU-level interviews as well as desk research evidence suggest that the general directive has had some although limited impact due to its vague wording. Given the absence of clear criteria for implementation and the delegation to MS of key decisions (including on mutilations), the directive has been seen as relatively ineffective and there are too few elements available to offer here a robust description of its different kinds of impacts that would clearly differentiate them from those of other legislation or other initiatives. For example, improvements noted in Greece and Romania for sheep appear to have been largely driven by other factors than the implementation of the directive, and notably EU funding support and national initiatives.

According to a survey of MS authorities carried out by the Finnish presidency of the Council in 2020[149] and requesting views on the need to regulate species currently **not** covered by EU legislation, the following proportion of respondents saw it as important or very important to regulate:

- Dairy cattle (76%);
- Laying hen breeders and broiler breeders (57%);
- Beef cattle (52%);
- Pullets, turkeys and farmed rabbits (48%);

- Farmed fish (38%);
- Sheep and goats (19%).

Dairy cows are exposed to known and significant welfare risks particularly due to production pressure (lameness, mastitis, tethering, space allowance in confinement, diseases and wounds, lack of access to pasture, low longevity). Dehorning and the management of pain associated with it has been an issue of concern for cattle for all farming purposes. An EU overview completed in 2009 indicated that an overwhelming proportion of dairy cattle were dehorned, though it did not provide information on pain management.[150] Audits carried out by the EC in 2016 have found that the welfare risks to which dairy cattle is exposed were not being monitored with an appropriate set of indicators.[151] Those welfare risks and the very large size of the population of dairy cows in EU farming have led several experts and NGOs to recommend that specific protection should be introduced for them in EU legislation.[152] Such protections could, according to NGOs and experts, include requirements on access to pasture, ability to exercise, tethering, herd size, dehorning and disbudding. As for beef cattle, density, housing conditions and feeding have been noted welfare issues, for instance in Italy.[153]

Welfare issues affecting broiler breeders and hen breeders (feed restriction, injuries, mutilations) have been known for some time.[154] Some of these issues are directly linked to genetic selection in the industry, which affects the whole chain of production and has been a core concern. NGOs and some experts have recommended exploring the possibility of setting limits on growth rates for birds, however this is criticised by industry representatives.

There have been calls for phasing out cages for rabbits, and a recent opinion by EFSA[155] has provided an assessment of the relative welfare of rabbits across different housing systems. Audits completed in 2017 have concluded that the commercial rabbit farming practices are "broadly in compliance with welfare legislative requirements".[156] The population of rabbits farmed in the EU is essentially concentrated in five countries: Spain, Italy, France, Germany and Portugal. There is some disagreement between farmers' organisations on the need for specific legislation on the farming of rabbits. Some are calling for such legislation (rules have been introduced in Germany), while others recommend that further studies should be carried out first, particularly to understand the causes of some of the main welfare issues faced by rabbits, notably pododermatitis and arthropathy. Most stakeholders who expressed an opinion on rabbits agreed that enriched cages would be desirable, however open range rearing of rabbits is often considered difficult to achieve, in contrast to open range rearing of other species. The grouping of female rabbits is considered a particularly thorny issue, due to aggressivity patterns.

Some stakeholders mentioned turkeys as a forgotten species, for which there are no density requirements at present, and therefore no controls.

The evidence collected suggests that a number of welfare issues affecting sheep would require specific protection, in particular cleanliness, watering, heat stress and poor ventilation, housing conditions (hygiene), handling of ill animals, tail-docking of ewes, and genetic selection (for the maximisation of wool production). The lack of specific rules for sheep has led to inconsistent controls and has meant that only the worst cases of poor welfare tend to be detected. As emphasised by interviews conducted in Greece and Spain, the extensive husbandry practices for sheep have positive impacts on sheep welfare, and should therefore be preserved, however that also implies that any standards set in legislation need to be achievable by a sector that is characterised by low resources and low profitability.

The fate of male calves has been highlighted by several stakeholders, as those animals are low value, and the manner they are dealt with is an AW concern that is not currently addressed. Likewise, day-old male chicks are currently not protected by EU legislation (though there is protection in national

legislation in some MSs) and, for the purpose of the egg industry, they are routinely crushed (macerated) or killed using carbon dioxide gas, which raises ethical issues. Furthermore, day-old chicks that are destined to be farmed are routinely left for 48 to 72 h without any food or water until they are transported from hatchery to farm (expert interview).

For all species not covered by specific legislation, NGOs and NCAs generally agreed that this situation prevents the implementation of consistent inspection programmes, and it also prevents NGOs from taking action, including building court cases, to address the most problematic cases, as there is no robust legal basis on which they may do so.

On public health impacts, the same observations reported under Q11 for the species-specific directives apply to the general directive. For the species not covered by any species-specific directive, reductions in antibiotics use (as in rabbit farming in France) appear due to other initiatives than the directive.

Q13 – Are there any "on-farm" breeding, keeping and management practices (and relevant animal species affected) that are of concern to consumers in the EU in terms of AW? Do such practices affect consumers' attitudes and behaviour and how? Are there any practices of concern to consumers that are still effectively permitted under the "general" and "species-specific" directives through either gaps, unclear definitions, or lack of proper compliance and enforcement?

Recent meta-studies on consumers' understanding of production diseases (i.e. diseases resulting from or aggravated by management practices) associated with intensive farming systems have confirmed that there is in general only limited understanding of modern farming and of AW issues in the general public.[157] Nevertheless, the literature identifies a number of dominant concerns among consumers:[158]

- Enough space and freedom for the animals: confinement (caging for poultry, crating for sows) and high stocking densities are of concern to consumers;
- Cramped conditions, as well as lack of light and cleanliness have also been referenced across studies;
- The use of antibiotics in the farming industry is of concern to consumers inasmuch as it is used to address the health risks posed by the mode of production. The incorporation of antibiotics into feed in particular is a concern;
- Some practices such as the castration of piglets without anaesthesia or analgesia have also been highlighted in earlier studies;
- There is higher concern for the general welfare of poultry than for pigs, and significantly less for dairy cows.

These concerns are often summarised in the literature as a strong preference for "naturalness".

The link between expressed attitudes and consumers' actual behaviours is notoriously flawed, and many sources point to dissonance and discrepancy between expressed views on AW and either willingness-to-pay statements, or actual consumption behaviour,[159] although experience in some countries suggests that consumers provided with only higher welfare products (when retailers collectively phased out lower welfare products) did not show negative purchasing responses.[160] In other words, a much greater proportion of consumers declares concerns than is willing to pay more for higher welfare products. The evidence also shows that the level of concern across species does not match the level of cost that consumers declare they are willing to pay for a higher welfare product: the latter is greatest for beef and dairy and lowest for pig meat. The relationship between consumer concerns and actual consumption is not clearly established.[161]

It is clear that high density, confinement, caging, crating, mutilations and antibiotics use for prophylaxis, which emerge from the evidence as ongoing consumer concerns, are currently effectively permitted by EU legislation on AW on the farm and beyond (e.g. on AH[162]), and/or the

manner it is being interpreted by MS and operators. However, the literature shows also that consumers remain poorly informed of the reality of modern farming and their perceptions do not match the assessment of AW issues conducted by NCAs, NGOs and academic researchers.[163] The extent to which consumer concerns may be the guide for revising legislation is to be considered in the light of these findings.

4.4. Efficiency

Only limited quantitative evidence on the costs of implementation for either the public administration or farmers themselves could be collected. In many MS there are no studies that have assessed the costs of implementing the directives for the sectors affected, although there are a few rare exceptions. Besides, the evidence available does not clarify the extent to which public resources for official controls had to be increased as a result of the directives, or rather reallocated temporarily or permanently to verify compliance with that legislation as well as other legislation. The mixed nature of official controls, which involve assessing compliance with different legislations, also means that it is challenging to disentangle what of the costs involved may be attributed specifically to one particular directive or another. Finally, and in the absence of shared records, the data is as good as the memory of the interviewees and other contributors can be on changes that sometimes were implemented a decade or more ago. Therefore, all assessments on cost-benefit ratios, provided in the answers to Q14, should be verified and detailed via further targeted research.

Q14 – To what extent are the costs (related to the implementation of the directives) justified, given the positive and/or negative results/impacts this implementation has delivered?

General directive

There is no evidence on the costs of implementing the general directive. The directive has been linked to some administrative costs for farmers (record keeping, usually considered good practice and a norm in modern farming). While other implementation costs may have been generated by the directive, e.g. to improve buildings, such changes have also been driven by other policies than AW legislation (e.g. support to farmers to modernise and optimise their buildings and equipment) and as such are difficult to attribute to the directive. The costs to the public administration in terms of official controls is challenging to assess as well, particularly considering that for a number of species subject to the general directive, some MS have carried out no official controls. Stakeholders' judgment on the general directive is that it has been at best beneficial but the extent of those benefits is disputed. In summary, the costs of the general directive may have been small and its impacts too. Given the gap the directive filled when it was passed, and its use as a basis for some efforts on the ground, the costs stemming from its implementation may be considered justified.

Broilers directive

There is some evidence on the impact of implementing the broilers directive in a number of countries. The most comprehensive evaluation of the directive remains that carried out by the Food Chain Evaluation Consortium (FCEC) in 2017.[164] It indicates costs of € 2.7 million in the Netherlands and € 6 million in Finland. It has been often commented by stakeholders that the broilers directive had in most countries little impact given that it allowed for densities that were already practiced, except in a few countries in which business models and buildings had been set for higher densities (e.g. in the Netherlands). Given the low benefits that the directive has had on the welfare of broilers and its arguably low implementation costs, the latter may be considered justified. However, there is strong disagreement from some industry stakeholders on the justification of costs for one requirement in particular of the directive, which is the daily reporting of mortality.

Laying hens directive

The evidence on the implementation of the laying hens directive is limited. Estimates available from the literature and from interviews vary very widely, from a total cost to the EU industry of € 354 million [165] to £ 400 million for the UK laying hens industry alone[166] to € 1 billion according to a French source (interview). Funding support granted in France to laying hen producers have corresponded to € 11 million. The average cost per place for a hen in France has been between € 5 and € 26,[167] compared to an average of £ 25 in the UK. The comments received from interviews suggest disagreements on whether the costs were justified given the benefits, especially when the changes incurred have meant a transition to enriched cages, which many stakeholders reject as inappropriate, rather than to alternative systems of production.

Calves directive

There is scant evidence on the costs of implementing the calves directive. Some evidence from France[168] has been obtained on the directive on calf welfare from 1997 (directive 97/2/EC, later codified and updated in 2008 by the current calves directive 2008/119/EC), which contained the main new requirements on the regrouping of calves after 8 weeks and technical requirements on cages for the weaning period. The total investment costs to the sector were estimated at the time at € 98 million, € 24.6 million of which corresponded to public EU funding support. The implementation of the directive also implied an intensive campaign of controls by public authorities, although the implications in terms of Full Time Equivalents (FTEs) are not known. This has corresponded to a major change for the calf meat sector and to the housing of calves, which has also been perceived as beneficial by the farmers themselves. In that regard the little evidence available suggests that the costs were justified given the benefits achieved.

Pigs directive

Only limited evidence has been found on the costs of implementing the pigs directive in the MS. Evidence from France (communication from the French Institut du Porc) indicates that pig farmers were offered an approximate figure of up to € 68 million in funding to support the refitting of buildings and equipment so as to enable the grouping of sows.[169] It can be estimated that the private investments that pig farmers contracted at the time may have averaged 4 times the funding support received (an approximate of about € 272 million). The costs to the public administration are not well known, however it is understood that the implementation of the directive was accompanied by an intensive programme of inspections that in Brittany alone (the main pig producing region of the country) would have corresponded to about 2 FTEs for 2 years. This evidence does not cover the costs of implementation for other aspects of the directive, in particular the provision of enrichment and permanent access to water, which entail both operational and investment costs. These costs have been borne differently in the MS, depending on how soon and how well they were complied with. It is understood that there has been wide variation between the MS in this regard. The impacts achieved by the regrouping of sows were generally considered positive by the stakeholders interviewed, although many of the benefits expected from the directive have not materialised due to non-compliance (on tail-docking and enrichment in particular). Therefore, an assessment of the cost-benefit ratio, even if a rough one, is not possible.

Q15 – Could the actual (positive and/or negative) results/impacts of the implementation of the directives have been achieved with fewer costs?

The evidence available, principally drawn from interviews, suggests that the most significant and costly impacts of the directives have been changes to densities, equipment and buildings. It is apparent from the data that different choices were made in the different MS on how to make these changes. For example, some operators chose to refit existing buildings, while others built new ones. Egg producers in the EU chose different routes after the ban on battery cages. The different paths taken reflect a variety of considerations, constraints, and strategic choices that are independent

from the legislation itself. These variations notwithstanding, the interview data suggests that the actual results of the implementation of the directives could not have been achieved with fewer costs.

4.5. Coherence

Q16 – Are the directives coherent with themselves?

Evidence of incoherence in the directives is limited. In interviews, stakeholders raised two types of comments related to the coherence of the legislation.

The first type of comment referred to whether the directives provide the means to achieve their objectives. Stakeholders across categories with the exception of representatives of farmers' organisations agree that exceptions, derogations, and insufficiently specific wording in the directives (as discussed at length in section 4.1 on relevance) have hampered the achievement of their objectives. For example, one expert notes that Directive 2008/120/EC states that pigs must have access to an environment that meets their needs for physical activity and exploratory behaviour, yet allows confinement in individual cages such as service boxes or farrowing boxes. In other words, stakeholders see tensions between the intents of the directives and widespread practices that have not been banned or significantly restricted by the directives.

The second type of comment referred to tensions some stakeholders perceived between the requirements set out in the directives and the welfare of the animals. Some stakeholders from the industry have disputed the pertinence of requiring farmers to provide cumulative daily mortality rates for broilers on top of the daily mortality rate already collected, when those are sent to slaughter, or questioned whether requesting that litter in broiler farms should be dry is valuable to broiler welfare if that implies increasing the heat in the farm. This suggests that the directives may not provide enough information for producers to understand why certain requirements or indicators have been incorporated into the legislation, as well as indications of alternative ways of reaching certain objectives, such as alternatives to adding heat to keep litter dry.

Q17 – Are the directives coherent with the broader EU AW and EU AH policy? In the context of Directive 1999/74/EC laying down minimum standards for the protection of laying hens, special attention should be given, among others, to the question: How "free-range" AW practices applied to laying hens affect their health? In particular, do "free-range" laying hens suffer from diseases more frequently and/or experience a higher mortality rate as compared to "cage- reared" laying hens?

There is a broad agreement among EU-level stakeholders and national stakeholders across most categories that the directives are coherent with the broader EU AW and EU AH policy. Some stakeholders, at EU level (NGOs, representatives of veterinarians, some industry representatives) as well as national level (NCAs), would like to see greater integration of AW and AH policies as they see them as very tightly interlinked. This comment relates to the general approach to legislation – the concept of "one health, one welfare" has been referenced in this regard – but applies also to very specific issues, such as feed hygiene requirements, as those may have AH and AW impacts. A review of the AW policy and legislation and EU AH policy completed in 2020 has concluded that they are coherent with one another.[170] There is, however, some disagreement from representatives of national farmers' organisations for the pig and poultry sectors, related to specific issues. They have questioned in interviews the AH risks posed by some of the requirements set in AW policy. For example, some have argued that providing natural enrichment material to pigs, such as straw and wood, may entail some contamination risk in case wild boars may have been in contact with the straw or wood. Adapted biosecurity measures, however, can be taken to protect enrichment material from such contamination. A few industry representatives have also indicated that some enrichment in hen cages, for pecking and scratching areas, may entail health risks, although those

were not specified. Some NCAs have also noted how addressing biosecurity risks, a major concern in Europe in the context of the spreading of African Swine Fever and Avian Influenza, can run opposite to AW objectives, since it often implies greater confinement of the animals to prevent transmission.

In the context of egg farming, different housing systems exist. After the ban on battery cages in Europe, housing systems include enriched cages, loose-housing (barn and aviaries) and free-range. Different housing systems have different risks and benefits from an AH and AW point of view. Experts will weigh different pros and cons differently depending on priorities. As a matter of course, behavioural restrictions to the hens are much greater in cage systems than in other systems. The evidence from the literature and expert interviews indicates that hens in free-range systems are exposed to potential risks to their health that in some respects differ from those of hens housed in closed systems. This includes risks due to behaviour, such as injurious pecking and cannibalism, as well as piling. Also noted are the risks posed by infectious diseases caused by bacteria, and by parasites (nematodes, cocciodiosis, histomaniasis), which are less common in hens housed in closed systems. Reviewing the evidence available, a meta-analysis completed in 2020 has concluded that health risks and mortality are greater in free-range systems than in caged systems.[171] A recent analysis of a large dataset on mortality from laying hens housed in different housing systems suggests that mortality in "cage-free" systems can be reduced compared to that of hens in caged systems after the farm has matured, i.e. when the farmer has learnt how to manage hens that are loose-housed. The evidence does not include free-range and organic systems of production, focusing instead on barn and aviaries,[172] but there is evidence from Norway, however, indicating a similar pattern of decreasing mortality in free-range laying hens as the system matures.[173] Private data from a large poultry farming business also points to the potential for low mortality in free-range hens, comparable to that found in indoor (caged and non-caged) systems.[174] Greater variability in mortality rates can be seen in free-range settings (meaning that mortality fluctuates more in free-range settings than in caged settings) as it is more dependent upon good stockmanship. According to experts, this shows how implementing practices to manage the risks of free-range rearing[175] can lead to mortality rates in a free-range setting that are comparable and sometimes lower than those of caged hens.

Q18 – Are the directives coherent with other relevant EU policies and overall EU priorities? How have elements of the CAP with direct relevance to AW (i.e. mostly the cross-compliance provisions directly related to AW) influenced (i.e. contributed to or hampered) the implementation of the directives? Is there any room for incoherence between the five directives and the EU Habitats directive and the "protected species" status the latter give to certain predators, which could negatively affect the welfare of farmed animals?

The directives have been broadly coherent with other EU policies and overall EU priorities although some of their provisions (or absence of provisions) have been highlighted in the literature and by interviewees as demonstrating a lack of alignment and coherence. These include:

- The absence of articulation between aquaculture policy (under EU fisheries policy) and farmed fish welfare (which is in scope of the Directive 98/58/EC) – Improving knowledge on fish welfare has been one of the objectives of the AWS 2012-2015 pursued by the EC. The EC commissioned studies on this topic to improve knowledge on fish welfare.[176] After the publication in 2020 of the first EU guidelines for fish welfare in aquaculture,[177] it is understood that the EC is working towards further integration of AW into aquaculture policy;[178]
- Insufficient provisions for on-farm AW included in bilateral trade agreements, showing a lack of coherence between trade policy and AW policy – Tensions between heightened AW standards in the EU and trade with third countries have been a common source of concern for EU producers. This was recognised in the AWS 2012-2015, in which the EC committed to working towards better integration of AW standards in bilateral

and multilateral agreements, however this objective was only partially achieved.[179] It remains a source of concern, as communicated by representatives of the pig and poultry sectors in national interviews who worry that the costs imposed on them by AW legislation will prevent them from competing with cheaper imports.[180] For these stakeholders, it is necessary for the EC to better align its international trade policy with its AW (and AH) policy;

- A lack of regard for the environmental impact of some of the practices promoted or imposed by the directives – This refers to the tensions felt by some producers (particularly in the pig and poultry sectors) and some NCAs between requirements regarding the environmental impact of animal farming (carbon and other emissions and their negative impacts on climate, health and the environment) and AW requirements. It is noted, for instance, that outdoor rearing means reduced control over droppings and emissions, as well as greater amounts of feed, thereby potentially having a greater carbon impact.[181] These tensions acknowledged, some scientific research also points towards the opposite, for example showing that housing systems may be less relevant to greenhouse gas emissions than other aspects, such as for example manure treatment.[182] AW and environmental protection can go hand in hand, with open range, pasture based systems supporting reduction in ammonia[183] and contributing to biodiversity;[184]
- A need for a more forceful approach to fair distribution of value within value chains – While the EC has been active on price distribution and unfair trade practices within food supply chains,[185] this is not considered sufficient by some producers, particularly in those supply chains, which are poorly integrated and very competitive, where farmers reportedly struggle to see cost fluctuations reflected in prices (as is the case for laying hens or pigs in France, for example).

The coherence between AW legislation and the CAP has been limited[186]. In particular, the literature[187] as well as most stakeholders interviewed at EU-level and in MS point out that AW is poorly integrated into the CAP. Direct payments under the CAP are linked to the area farmed, they have therefore been mostly provided to those animal farmers that practice extensive farming (favouring bovine farms above other species[188]), or farmers that combine crops with animal farming (as is the case for a number of broiler producers in France, for instance). As such, they have been of little importance to those sectors in which intensive and confined farming is prevalent (pigs, broilers, rabbits, bovines in some countries). NGOs across several MS have also criticised the manner CAP payments were targeted (e.g. for sheep farmers) to encourage herd growth, which may be counteracting efforts to improve AW.

Under "Pillar 1" of the CAP, direct payment may be conditioned upon compliance with "Statutory Management Requirements" (SMRs) that encompass a number of EU legal instruments. As far as AW on the farm is concerned, this cross-compliance conditionality is limited to the calves, pigs, and general directives. **Although the conditionality of direct payments has been perceived to contribute to compliance with the general directive by some stakeholders (but not all) in Ireland, Greece,[189] and Romania, this has not been observed elsewhere.** Rather, stakeholders generally agreed that the general directive is too general to be a good basis for official controls. The manner the general directive is worded (as discussed under Q2) and the fact that it does not set out definitions for what would be a serious non-compliance (which would deserve to be sanctioned by a penalty) means that such determination is left to MS discretion. As a result, the EC (interview) has sometimes noted a lack of proportionality between non-compliances and the application of penalties. The evidence suggests that this goes both ways: penalties have been applied sometimes for minor non-compliances, without considering whether the welfare of animals was good overall, and serious non-compliances have been found yet not led to penalties. Such incoherencies are linked to how public administrations in charge of enforcing the legislation including CAP Pillar 1

vary in terms of resources, skills and legal culture, what academic literature on regulatory policy calls "enforcement styles".[190]

There is scant evidence from desk research, EU-level and national interviews that the conditionality of direct payments on cross-compliance has contributed to the implementation of the calves and pigs directives either, although some stakeholders have claimed a positive impact in Germany and Spain. The effectiveness of the cross-compliance conditionality depends upon official controls being sufficiently frequent and widespread. This has been noted as a core weakness in France, that further undermines conditionality as a lever to drive compliance with AW legislation. Several stakeholders (ECA, NGOs, and experts) pointed to the continued payments to farmers who did not comply with key requirements of the legislation, in particular the ban on tail-docking for pigs.

The CAP has also provided rural development funds under "Pillar 2". Rural Development Programmes (RDPs) can be designed at the discretion of each MS. Some of that funding may be earmarked to support activities that go beyond legal requirements on AW. Such funding has been used to support pig farmers' efforts to comply with the pigs directive in some MS and egg producers' efforts to comply with the laying hens directive, although these were small contributions to the overall costs incurred. Generally, however, **RDP funding earmarked for AW improvements has been under-used across the EU,** with wide differences from one MS to another.[191] Furthermore, NGOs in MS have highlighted how the modernisation of farms supported by RDPs have promoted certain design features (e.g. fully slatted floors in pig farms) that have adverse impacts on AW. NGOs have also noted that some MS have allocated funds to minor improvements such as added lights or water quality, while those are not key drivers of AW, instead of promoting a structured approach to improving AW on the farm.

While some evidence suggests that there has been greater readiness to support AW improvements through Pillar 2 funding in countries that did not have a strong orientation towards exporting national production (e.g. Finland),[192] there has also been small-scale RDP support to implement the loose housing of sows in Denmark (which goes beyond what EU legislation requires), whereas the Danish pig sector is strongly export orientated (interviews). RDP funding has also been linked to improvements in farm buildings for sheep herds in Greece and Romania.

Interviews with EU-level stakeholders, national stakeholders, one conservation expert, and the review of the literature have found **limited evidence of concerns regarding the coherence between the Habitats directive, on the one hand, and on-farm AW legislation, on the other.** In fact, the question of the coherence between these two sets of legislation is rarely, if ever, asked. The two sets of EU legislation (i.e. the directives on on-farm AW on the one hand, and the Habitats Directive, on the other hand) do not refer to each other. The literature available, including previous evaluations of the Habitats Directive,[193] has not discussed their coherence. The AW legislation requires that farmers should ensure the welfare of the animals they farm. Farmers are not subject to a similar duty of care towards wild animals. However, the latters' protected status limits farmers' ability to kill predators, unless derogations are granted them to do so under article 16 of the Habitats directive. **Such derogations, when justified by the prevention of serious damage to livestock, are meant to protect economic interests rather than AW.** The concerns of farmers about predation, as documented in press releases and petitions addressed to the EP, also tend to be framed in terms of economic harm.[194] While derogations have been granted by various MS and are the subject of contentious debates, particularly at national level (e.g. in Poland, Romania, Spain, Sweden, Finland), studies surveying predator killing practices across Europe suggest that a proportion of them may have been carried out without derogation and therefore illegally, as it is unlikely to be detected by others, including NCAs.[195] Derogations according to article16 of the Habitats directive can be granted if there is "no satisfactory alternative" to killing the wild animals. There are numerous alternatives to killing in order to protect farmed animals from predation by wild

animals (including fences, nets, acoustic devices, dogs, etc.), although their relative effectiveness is not well understood.[196] Expert input, national interviews and the literature point to the seasonal and regional character of predation on farmed animals by wild animals, some of which may be protected by the Habitats Directive. The data suggests that this is an issue that affects disproportionately sheep farmers in Spain, Romania, and France.[197] Scientific literature provides further evidence of predation from wolves, bears and wolverines on farmed mammals,[198] from birds of prey on farmed poultry[199] and from seals and otters on farmed fish.[200] In interviews, stakeholders across categories and experts acknowledged that predation is a welfare issue for farmed animals, yet NGOs pointed out the availability of alternatives to either hunting wild animals or confining farmed animals indoors, such as the use of fences, dogs, or sound devices to keep predators away.

Overall, the EU-level interviews and the desk research conducted suggest that the on-farm AW directives and the Habitats directive are not incoherent in the sense that the Habitats directive acknowledges the risks posed by protected species to livestocks and provides for derogations in case alternative solutions to killing the wild animals are not available. However, there is no articulation between the two sets of legislation in the sense that neither refers to the other or to its objectives (the welfare of farmed animals and the conservation of wild species).

4.6. EU added value

Q19 – What is the added-value of the directives and their implementation, compared to what is likely to have been achieved by MS, if acting on their own (i.e. without these EU directives)?

There is a general agreement among stakeholders at EU level and national level that the EU directives, and in particular the four species-specific directives, have provided the drive to progress on a range of issues that many MS (named exceptions were Finland, Sweden, Denmark and Germany) lacked individually. As interviews show, to this day, even though some smaller MS (e.g. Greece) are supportive of possible changes to the legislation that would bring higher welfare protection to farmed animals, they would not act on their own, i.e. would not introduce legislation at national level. In contrast, as already shown in the sections above, others (e.g. Germany, Austria, Finland, Sweden) continue to make progress and establish higher standards than those formulated in the EU legislation.

That being said, a number of stakeholders (e.g. NGOs, EC) do not see EU legislation **today** as a driving force for AW improvement, as it has fallen behind consumer expectations, and is less responsible nowadays for progress on the ground than consumer pressure and NGO activism, as well the commitment of a number of government bodies across MS to improve AW practices.

5. Animal welfare labelling

This chapter of the research paper presents the current policy and market context of AW labelling in the EU. In this context, attitudes of European consumers towards AW are first briefly discussed together with the market responses that they have prompted (section 5.1). The current regulatory state-of-the art of AW labelling of animal-based products in the EU is then presented (section 5.2) based on the analysis of the EU legal framework that is currently applicable.

Starting from this premise and building on the key findings of the online survey that was carried out during the research, a detailed mapping of the labelling systems covering AW that took part in the various data collection activities performed under Research Task 2 is provided (section 5.3.1). In the view of the research team and taking into account the literature reviewed for the elaboration of Research Task 2, the mapping led to the identification of the most important labelling systems that currently exist in the EU market. This mapping is then coupled by a comparative assessment of a more limited sample of labelling systems covering AW (n=11) using the critical evaluation framework designed by More et al. (2017) with a view to providing a better understanding of the functioning of such systems, notably in terms of scientific substantiation, effectiveness, efficiency and transparency (section 5.3.2). This assessment largely relies on the findings emerging from the interviews that were carried out with the owners/managers of the labelling systems that were selected for this purpose and, where appropriate, on the results obtained through the online survey.

Finally, the prospects of establishing harmonised rules for AW labelling at EU level are discussed and notably:

- The added value that may stem from the introduction of EU mandatory requirements in this area (section 5.4.1); and
- The potential design of an EU-wide AW label (section 5.4.2).

This final analysis is primarily based on the feedback gathered from stakeholders during the various rounds of interviews that were performed during the research (i.e. EU-level, national and AW labelling interviews) as well as on the relevant answers provided by the owners/managers of the labelling systems that contributed to the online survey. It is complemented, where appropriate, by findings from literature review.

5.1. Consumers, animal welfare and market responses

Consumers' interest in AW practices on the farm, at slaughter and during transport has been growing in the EU over the last two decades. According to a Eurobarometer survey carried out in 2016, 52% of Europeans look for AW labels when shopping, although one in ten Europeans does not know that these labels exist. Overall, 47% of Europeans think that choice of AW-friendly food products in retail is limited.[201] More recently, in accordance with a Eurobarometer survey carried out in 2019, AW features amongst the most important determinants influencing purchasing decisions of European consumers, weighting as much as environmental concerns and religious beliefs (19%) (even if with significant variations across MS).[202] However, origin (53%), cost (51%), food safety (50%), taste (49%) and nutritional content (44%) are far more important for consumers.

As a result of the growing interest by consumers, the number of food labelling systems addressing AW has been growing in the EU market. Overall, business operators, including farmers, food manufacturers, and retailers, view AW labels as an additional marketing tool to ensure product differentiation. Initiative Tierwohl in Germany and Interporc Animal Welfare Spain (IAWS) in Spain are some examples of labelling systems developed over the last decade by the private sector. Also, few AW NGOs have established their own AW labelling system (e.g. Beter Leven keurmerk in the Netherlands, Tierschutz Kontrolliert in Austria, Anbefalet af Dyrenes Beskyttelse in Denmark) or

manage one in partnership with other private stakeholders (as in the case of the French colour-coded AW label Etiquette Bien-Être Animal). Public systems – i.e. systems established and/or managed by NCAs – are currently present or under development in a limited number of MS, including Denmark, Germany, Italy and Finland.

Overall, academic literature notes that the number of AW labels has been growing significantly in the EU market over the last few years, a finding that the research conducted for the elaboration of this paper further corroborates (see further section 5.3.1.2 and in particular Figure 4). However, the fact that these labels are initiated mostly by private stakeholders has raised some concerns.[203]

First of all, the standards that underpin private AW labels seem often to lack uniformity across them. This makes it very difficult to understand the specific message that each label aims at conveying to the final consumer as well as to distinguish one label from another on the market. Secondly, those standards quite often merely replicate what is already mandated by law and, as such, do not effectively contribute to heightening the level of AW practices in the relevant production chain. Thirdly, several private AW labels that are found on the EU market are self-declared: they are claimed by a business operator without prior verification and validation by a third-party entity. These labels lack therefore independent endorsement, which may generate doubts over their truthfulness and scientific substantiation while ultimately hampering consumer confidence.

However, the concerns singled out by academic literature in relation to private AW labels seem less relevant in the case of AW labels that are managed by public authorities.

5.2. Animal welfare labelling in the EU: the current regulatory state-of-the art

Currently, EU law regulates AW labelling of animal-based products to a limited extent. Specific **mandatory requirements** are in place since 2008 for the **marking of eggs** depending on the system used for the rearing of laying hens (i.e. eggs from caged hens; barn eggs; free-range eggs, and organic eggs) pursuant to article 12 (2) and Annex I, Part A, of Regulation (EC) No 589/2008.[204] In addition, EU law provides for a list of **reserved terms** alluding to the farming method used for rearing **broilers** (i.e. extensive indoor/barn-reared; free-range; traditional free-range, and free-range-total freedom), which may be used by business operators marketing poultry meat pursuant to article 11 (1) of Regulation (EC) No 543/2008;[205] such terms are 'reserved' to the extent that they are the only ones allowed under EU law to describe such methods through labelling provided that the specific conditions set out in Annex V of the same regulation are met.

In the absence of other specific EU rules regulating AW labels, AW-related food claims are currently subject to:

- EU general requirements for the provision of voluntary food information to consumers pursuant to articles 36 and 37 of Regulation (EU) No 1169/2011;[206] and
- The EU best practice guidelines for the voluntary certification of agri-food products.[207]

5.3. Animal welfare labelling systems in the EU

This section of the research paper has the objective to provide a better understanding of the AW labelling systems that are currently present or under development on the EU market. It aims in particular at providing an answer to the following research questions:

- What systems of production "animal welfare" labelling exist across the EU and for which animal-based products?

- What are the main features of these labelling systems? Are the identified labelling systems mandatory (imposed by governments) or voluntary (recommended by governments and/or initiated by businesses)?
- Are the identified labelling systems based on scientific evidence or not?
- How do the identified systems work in terms of effectiveness and efficiency? More specifically, what has been their impact on businesses, on consumers' comprehension of the relevant production system and on consumers' confidence?

Based on this premise, section 5.3.1 provides for a detailed mapping of the systems that took part in the online survey and of their main characteristics, whereas section 5.3.2 contains a comparative assessment of the functioning of the labelling systems under study based on the analysis of a more limited sample of systems (n=11).

5.3.1. Mapping of existing animal welfare labelling systems in the EU: main characteristics and regulatory status, functioning and market penetration and impacts

The online survey carried out during the research led to the identification of **24 labelling systems covering AW** across the EU. Table 5 shows the name of the labelling systems identified together with the respective logos.

Table 5.: Labelling systems covering AW and respective logos

Labelling systems			
AMA Gütesiegel	Anbefalet af Dyrenes Beskyttelse	Animal Welfare Interovic Spain (AWIS)	Bedre dyrevelfærd
Best Farmer – Cuidamos do Bem-Estar Animal	Beter Leven keurmerk	Bienestar Animal avalado por ANDA	Compromiso Bienestar Animal PAWS
Disciplinare di etichettatura volontaria delle carni di pollame	EKO-keurmerk	Etiquette Bien-Être Animal	IKB Ei
Initiative Tierwohl	Interporc Animal Welfare Spain (IAWS)	KRAV	Label Rouge

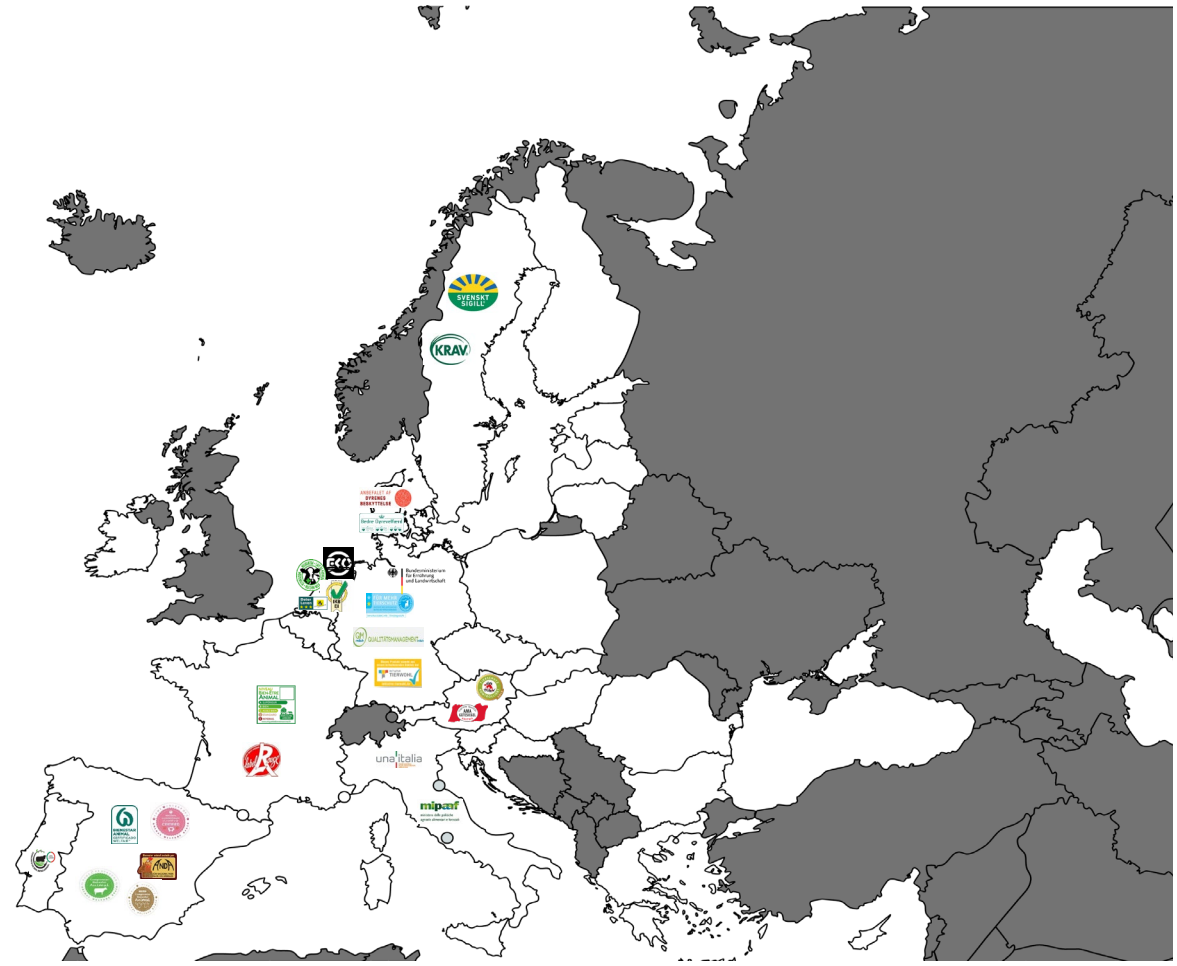
Labelling systems			
National AW label (Italy)*	QM-Milch	Sigill Kvalitetssystem AB	National AW label (Germany)*
Tierschutz-kontrolliert	Tierschutzlabel "Für Mehr Tierschutz"	Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk	Welfair

*A logo had not yet been developed by the time the survey was closed down

Distribution of the labelling systems per Member State

The following figure shows the MS where the labelling systems under study were initially established. By May 2021, 5 systems had been established in Spain, 4 in the Netherlands and Germany, 2 in France, Denmark, Italy, Sweden and Austria, and 1 in Portugal.

Figure 3. Distribution of labelling systems covering AW per Member State



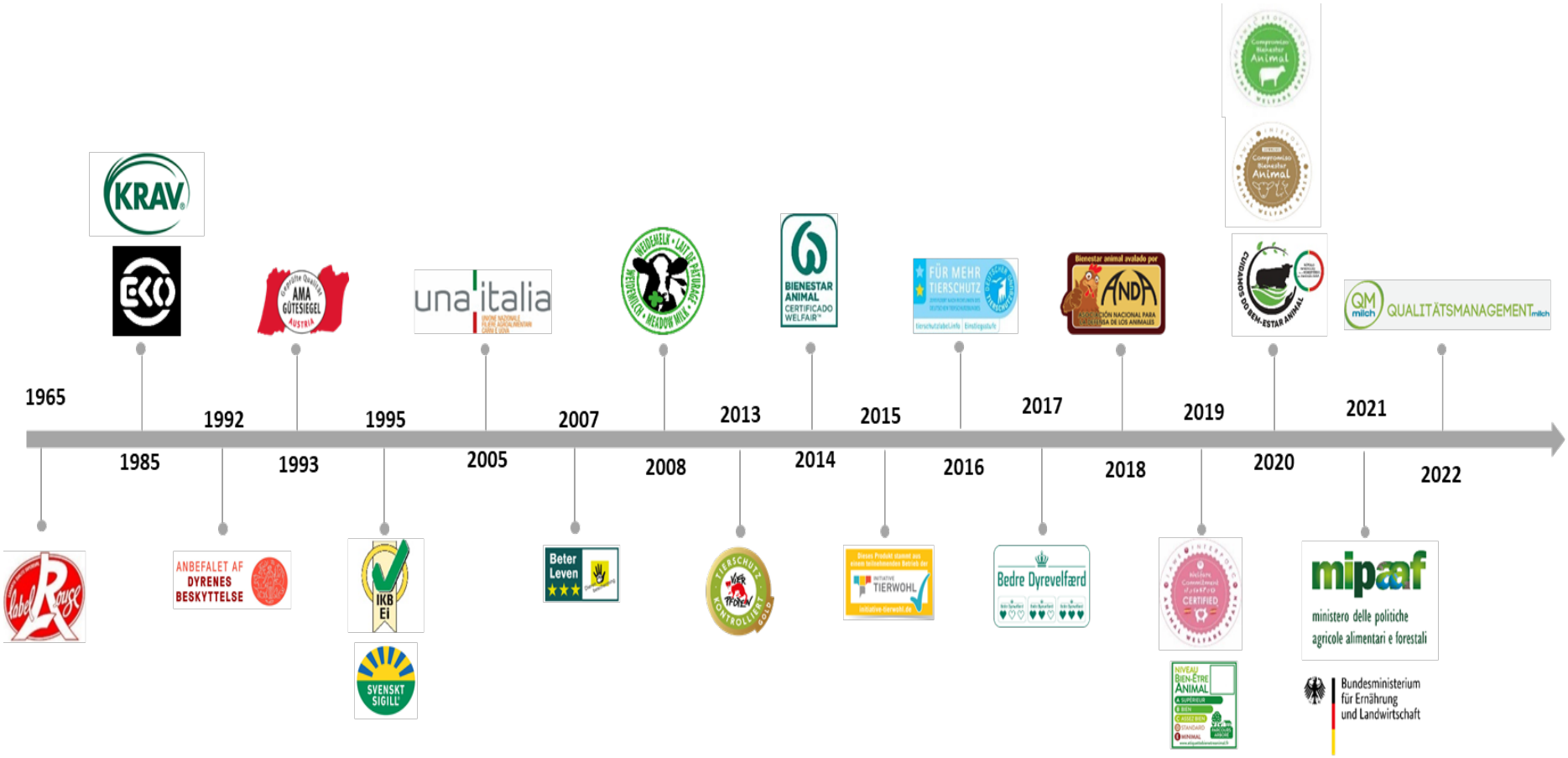
Year of establishment of the labelling systems

Figure 4 provides for a chronology based on the year of establishment or the expected year of implementation of the labelling systems under study. The years of establishment of the labelling systems range from 1965 (Label Rouge – the oldest system under study) to 2022 (QM-Milch – currently under development). At present, in addition to QM-Milch, two public labelling systems covering AW are under development, one in Italy and the other one in Germany. Likewise, the Spanish label Animal Welfare Interovic Spain, which was established in 2020, had no products labelled on the national market by the time the online survey was closed down.

The distribution of the labelling systems under study over the years shows a high concentration over the last decade. Since 2010 until date 13 labelling systems covering AW have been introduced, while in the period 1965-2010 (i.e. 45 years) a lower number of systems was implemented (n=10). It is worth noting that only between 2019 and 2020 5 different labelling systems were created.

The AW labelling interviews conducted during the research revealed that different drivers have led to the development of the labelling systems under study. For instance, the French quality label Label Rouge, which was implemented in the '60s, was initiated by national poultry producers to fulfil their own ambition to produce meat of a higher quality and complying with AW standards, at a time at which intensive production systems were emerging. The Danish public labelling system Bedre dyrevelfærd, which was introduced only in 2017, was initiated because of a shared political and societal willingness to improve AW in the pig sector, in addition to increased consumer demand for AW-friendly food products. Other drivers that encouraged the creation of the labelling systems under study include primary commercial reasons (e.g. Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk) and the need to respond to the demand of food businesses for AW certifications (e.g. Welfair).

Figure 4. Year of establishment/expected year of implementation of the labelling systems



Main characteristics and regulatory status of the labelling systems

Table 6 provides an overview of the main characteristics of the labelling systems under study.

Half of the labelling systems analysed were created at the initiative of the private sector (n=12) (e.g. the labelling systems established in France, which are Label Rouge and Etiquette Bien-Être Animal), while 9 labelling systems were created by public-private partnerships (including the Danish public labelling system Bedre dyrevelfærd) and 3 (notably, AMA Gütesiegel and the systems currently under development in Italy and Germany) were initiated by the public sector.

The large majority of the systems under study (n=19) have a national geographical scope covering Spain (n=4 systems), Austria, France, the Netherlands, Denmark, Germany, Italy, Sweden (all n=2) and Portugal (n=1). In other cases (n=3) the geographical coverage of the label is European (notably, in the case of: Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk – which covers several EU MS; QM-Milch – which covers Germany as well as neighbouring countries and IKE Ei – which covers the Netherlands, Germany and Belgium). In the remainder of the cases (n=2) the geographical coverage is international (notably, Tierschutzlabel "Für Mehr Tierschutz" and Welfair).

All the 24 labelling systems analysed are **voluntary,** meaning that food business operators are free to join them if they wish so.

Two thirds of the labelling systems studied (n=16) are **mixed labels,** i.e. they include other aspects related to the product and/or its processing besides AW. Conversely, the remaining systems (n=8) cover only AW-related aspects. In the case of mixed labels, the aspects that are more frequently covered – in addition to AW – are traceability (n=14), followed by sustainability and health (n=9). Of the systems analysed, AMA Gütesiegel is the labelling system that covers most aspects (9 precisely). This finding contradicts what emerged from the preliminary desk research performed by the research team, which pointed out to a prevalence on the EU market of labelling systems focussing only on AW (see **Annex A.5).**

Figure 5 shows the animal species and the production phases covered by the 24 labelling systems studied.

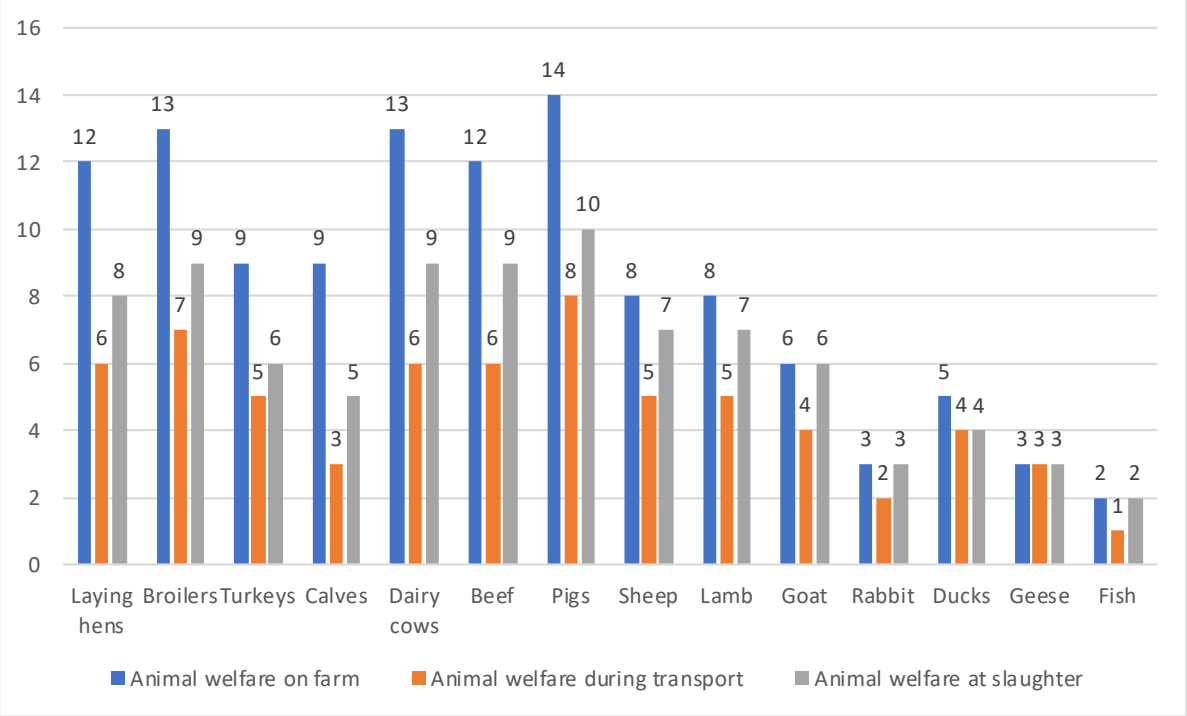
All the labelling systems studied cover AW at farm level while most of them cover also AW during transport (n=11) and at slaughter (n=15). From an animal species standpoint, currently **pigs** are the species that is more frequently covered across the sample studied (n=14), followed by **broilers** and **dairy cows** (n=13). Conversely, fish is the species covered the least by the systems studied (n=2) (notably, in the case of the two Swedish labels KRAV and Sigill Kvalitetssystem AB).

Among the 24 labelling systems under analysis, the number of animal species covered ranges from 14 (only in the case of KRAV) to just 1 (n=7) (e.g. Etiquette Bien-Être Animal, which only covers broilers).

Figure 6 provides an overview of the type of food products that are currently covered by the labelling systems under study.

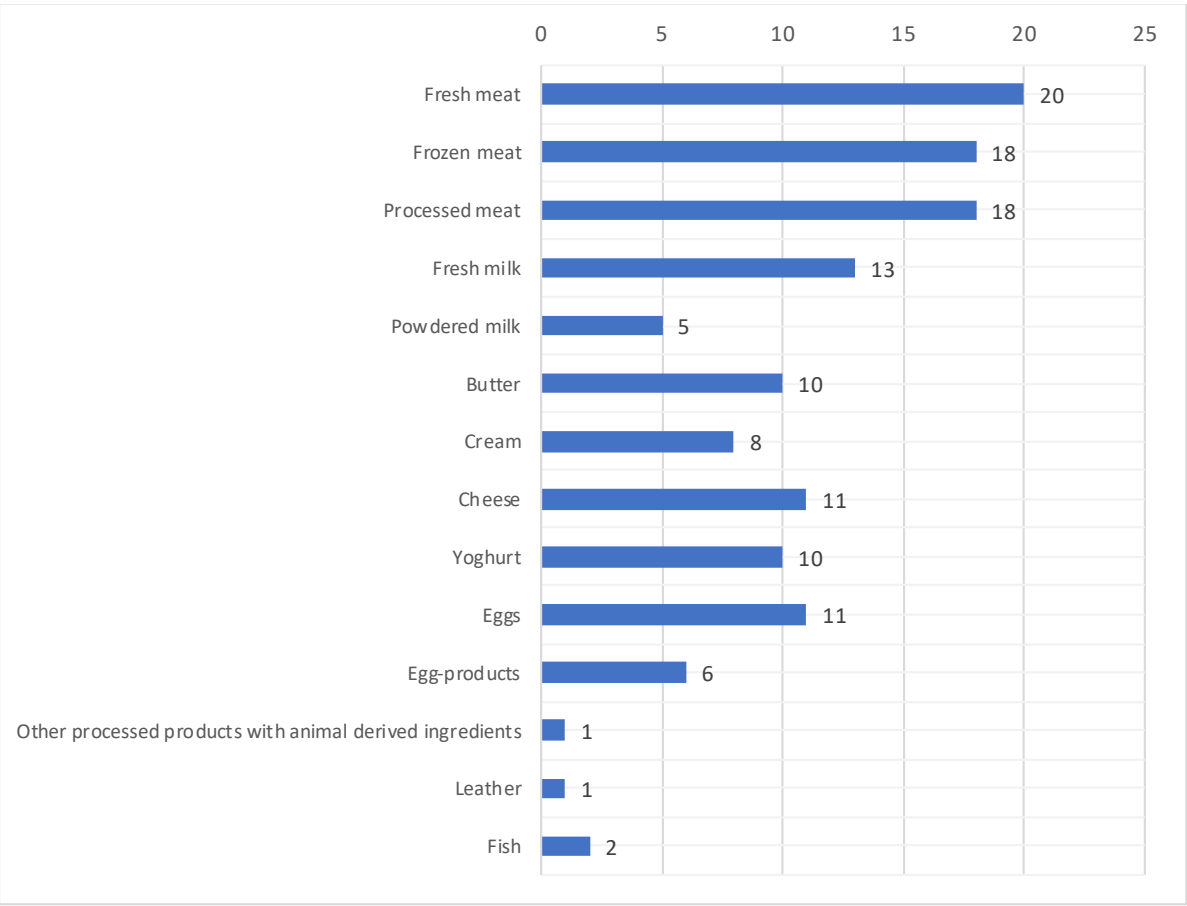
Overall, **fresh meat** (n=20) and **frozen and processed meat** (n=18) are the product categories covered more frequently across the systems analysed, followed by certain dairy products – such as fresh milk (n=13) and cheese (n=11) – and eggs (n=11). Of the systems analysed, KRAV is the label that currently applies to more food categories (n=12), followed by EKO-keurmerk and Tierschutzlabel "Für Mehr Tierschutz" (n=11). Conversely, there are labels that apply only to one food product category (n=3), namely Bienestar Animal avalado por ANDA and IKB Ei (which both focus on eggs) and Etiquette Bien-Être Animal (which applies to fresh meat).

Figure 5. Species and production phase(s) covered by the labels



Source: Online survey

Figure 6. Categories of food products currently applied to the label



Source: Online survey

The majority of the labelling systems studied (n=16) plan to incorporate additional features in their own system in the near future. Within this group, there are some systems that intend to incorporate: New species in the label's standard (e.g. Anbefalet af Dyrenes Beskyttelse, which plans to include fish);

- Other regions/countries (e.g. Welfair, which is currently working on its expansion across South America);
- New dimensions besides AW (e.g. Label Rouge, which intends to include environmental impact and sustainability); and
- New dimensions of AW (e.g. Bienestar Animal avalado por Anda, which intends to incorporate AW during transport and at slaughter).

Overall, the labelling systems covering AW that have been mapped across the EU during this research present a varying degree of complexity, which often makes it difficult to compare them. They differ one from another not only in terms of contents of the specific label's standard (e.g. animal species and production phases covered) but also in terms of underpinning objectives, which are very often broader than AW alone.

Table 6. Main characteristics of the labelling systems covering AW that exist in the EU

Labelling system	Initiator	Geographical scope	Scope of the label	Species (production phase (s) covered)	Food categories	Future additional features
	Public sector	National	Mixed	Laying hens (F), Broilers (F), Turkeys (F), Calves (F), Dairy cows (F), Beef (F), Pigs (F), Sheep (F), Lamb (F), Goat (F)	Fresh/ Frozen/ Processed meat, Fresh milk, Butter, Cream, Cheese, Yoghurt, Eggs, Egg-products	No features identified
	Private sector	National	AW only	Laying hens (F) (T) (S), Broilers (F) (T) (S), Turkeys (F) (T) (S), Dairy cows (F) (T) (S), Beef (F) (T) (S), Pigs (F) (T) (S), Sheep (F) (T) (S), Lamb (F) (T) (S), Ducks (F) (T) (S), Geese (F) (T) (S)	Fresh/ Frozen/ Processed meat, Fresh milk, Butter, Cream, Cheese, Yoghurt, Eggs	Species: Fish Dimensions besides AW: Biodiversity
	Public-private partnership	National	Mixed	Sheep (F) (T) (S), Lamb (F) (T) (S), Goat (F) (T) (S)	Fresh/ Frozen Processed meat, Leather	Other features: Recognition of the national accreditation body
	Public-private partnership (but managed by public authorities)	National	AW only	Broilers (F), Calves (F), Dairy cows (F), Beef (F), Pigs (F)	Fresh/ Frozen/ Processed meat, Fresh/ Powdered milk, Butter, Cream, Cheese, Yoghurt	Species: Lamb, Poultry
	Private sector	National	Mixed	Dairy cows (F), Beef (F)	Fresh/ Frozen/ Processed	No features identified

Labelling system	Initiator	Geographical scope	Scope of the label	Species (production phase (s) covered)	Food categories	Future additional features
					meat, Fresh milk	
	Public-private partnership	National	AW only	Laying hens (F) (T) (S), Broilers (F) (T) (S), Turkeys (F) (T) (S), Calves (F) (T) (S), Dairy cows (F) (T) (S), Beef (F) (T) (S), Pigs (F) (T) (S), Rabbit (F) (T) (S)	Fresh/ Frozen/ Processed meat, Fresh milk, Butter, Cream, Cheese, Yoghurt, Eggs, Egg-products	Other features: expansion from retailers to food service and butchers
	Private sector	National	Mixed	Laying hens (F)	Eggs	Other AW dimensions: Slaughter and transport
						Dimensions besides AW: Sustainability, Environmental Impact, Traceability and Rural development
						Food category: Poultry meat
	Public-private partnership	National	Mixed	Calves (F) (T) (S), Beef (F) (T) (S)	Fresh meat, Frozen meat, Processed meat	Other features: Recognition of the national accreditation body
	Public-private partnership	National	Mixed	Broilers (F), Turkeys (F), Ducks (F)	Fresh meat, Frozen meat	No features identified
	Public-private partnership	National	Mixed	Laying hens (F) (S), Calves (F) (S), Dairy cows (F) (S), Beef (F) (S), Pigs (F) (T) (S), Goat (F) (S)	Fresh meat, Frozen meat, Processed meat, Fresh milk, Powdered milk, Butter, Cream, Cheese, Yoghurt, Eggs, Egg-products	Include more requirements in the system (e.g. pasture)
	Private sector	National	AW only	Broilers (F) (T) (S)	Fresh meat	Species: Pigs
						Food categories: Processed meat
	Public-private partnership	European	Mixed	Laying hens (F)	Eggs	Food categories: Egg products
						Countries/regions: other EU countries

Labelling system	Initiator	Geographical scope	Scope of the label	Species (production phase (s) covered)	Food categories	Future additional features
	Private sector	National	AW only	Broilers (F), Turkeys (F), Pigs (F)	Fresh/ Frozen/ Processed meat	Species: Dairy cows, beef Other AW dimensions: Broader consideration of AW aspects, e.g. organ findings reported from slaughterhouses Food categories: Fresh milk, Butter Cheese, Yoghurt
	Private sector	National	Mixed	Pigs (F) (T) (S)	Fresh/ Frozen/ Processed meat	No specific features identified
	Private sector	National	Mixed	Laying hens (F) (T) (S), Broilers (F) (T) (S), Turkeys (F) (T) (S), Calves (F) (T) (S), Dairy cows (F) (T) (S), Beef (F) (T) (S), Pigs (F) (T) (S), Sheep (F) (T) (S), Lamb (F) (T) (S), Goat (F) (T) (S), Rabbit (F) (T) (S), Ducks (F) (T) (S), Geese (F) (T) (S), Fish (F) (T) (S)	Fresh/ Frozen/ Processed meat, Fresh/ Powdered milk, Butter, Cream, Cheese, Yoghurt, Eggs, Egg-products, Fish	Dimensions besides AW: Climate, Biodiversity and Social responsibility are developed constantly
	Private sector	National	Mixed	Laying hens (F) (T) (S), Broilers (F) (T) (S), Turkeys (F) (T) (S), Ducks (F) (T) (S), Geese (F) (T) (S)	Fresh/ Frozen/ Processed meat, Eggs, Egg-products	Food categories: Poultry meat Dimensions AW: Environmental impact, Sustainability
	Public sector	National	Mixed	Pigs (F)	Fresh/ Frozen/ Processed meat	Food categories: Processed food Dimensions besides AW: Sustainability, Environmental Impact, Quality, Landscape, Organic, Traceability, Authenticity, Health, Food safety
	Private sector	European	Mixed	Calves (F), Dairy cows (F) (S)	Fresh milk, Butter, Cheese	No features identified

Labelling system	Initiator	Geographical scope	Scope of the label	Species (production phase (s) covered)	Food categories	Future additional features
	Public-private partnership	National	Mixed	Laying hens (F) (S), Broilers (F) (S), Calves (F) (S), Dairy cows (F) (S), Beef (F) (S), Pigs (F) (S), Sheep (F) (S), Lamb (F) (S), Fish (F) (S)	Fresh/ Frozen/ Processed meat, Fresh milk	No features identified
	Public sector	National	AW only	Pigs (F) (T) (S)	Fresh/ Frozen/ Processed meat	Species: Dairy cows, Beef, Poultry Food categories: Dairy products, Egg products, Other meat products
	Private sector	National	AW only	Laying hens (F) (T) (S), Broilers (F) (T) (S), Turkeys (F) (T) (S), Dairy cows (F) (T) (S) Beef (F) (T) (S), Pigs (F) (T) (S), Sheep (F) (T) (S), Lamb (F) (T) (S), Goat (F) (T) (S) Ducks (F) (T) (S)	Fresh/ Processed meat, Fresh milk, Butter, Cheese, Yoghurt, Eggs	Species: Geese, Calves
	Private sector	International	Mixed	Laying hens (F) (T), Broilers (F) (T) (S), Dairy cows (F) (T) (S), Beef (F) (T) (S), Pigs (F) (T) (S)	Fresh/ Frozen/ Processed meat, Fresh milk, Powdered milk, Butter, Cream, Cheese, Yoghurt, Eggs, Egg-products	Species: Turkey, Cattle Dimensions besides AW: Authenticity, Traceability, Origin
	Private sector	European	Mixed	Dairy cows (F)	Fresh milk, Powdered milk, Butter, Cream, Cheese, Yoghurt	No features identified
	Public-private partnership	International	AW only	Laying hens (F) (S), Broilers (F) (S), Turkeys (F) (S), Dairy cows (F) (S), Beef (F) (S), Pigs (F) (S), Sheep (F) (S), Lamb (F) (S), Goat (S), Rabbit (F) (S)	Fresh/ Frozen/ Processed meat, Fresh milk, Cheese, Yoghurt, Eggs	Species: Fish Countries/regions: South America Dimension besides AW: Pasture

Legend: (F)= AW on-farm; (T) = AW during transport; (S)= AW at slaughter | Source: Online survey

Functioning of the labelling systems

Table 7 provides a comparative overview of the functioning of the labelling systems under study.

The majority of the labelling systems (n=12) are designed as **single-tier labels,** while 11 labelling systems follow a **multi-tier approach.** In the case of the Italian national AW label, which is under development, a specific design has not been yet defined.

By definition, multi-tier labels foresee different levels of compliance with progressively higher AW requirements set by the label's standard, therefore following a stepwise approach. Multi-tier labels may present different designs. By way of an example, Tierschutzlabel "Für Mehr Tierschutz" has two tiers/levels, whereas Etiquette Bien-Être Animal has five. Also, the way in which compliance with the different levels of AW is communicated to the final consumer through food labelling varies depending on the labelling system. In fact, levels/tiers may be represented through pictorials – such as hearts (e.g. Bedre dyrevelfærd) or stars (e.g. Beter Leven keurmerk and Tierschutzlabel "Für Mehr Tierschutz") – or colour-coding (e.g. Etiquette Bien-Être Animal).

The rules used for the development of the AW requirements laid down in the label's standard vary across the systems analysed and are generally based on a **complex mix of international and/or national legal, scientific and/or technical sources.** Overall, for the majority of the labelling systems studied (n=17) AW requirements underpinning the label's standard are based on **private rules.** Likewise, AW requirements of most systems are based on EU legislation/guidance (n=13) and/or national legislation/guidance (n=14). Furthermore, some labelling systems (n=5) take into account, among others, requirements defined by the agri-food sector (notably, in the case of Tierschutzlabel "Für Mehr Tierschutz", Sigill Kvalitetssystem AB, Label Rouge, Compromiso Bienestar Animal PAWS and EKO-keurmerk). In few other cases (n=6) the label's standard is based on international codes or standards as in the case of the label Welfair, which is based on the protocols developed by the Welfare Quality Network and the Animal Welfare Indicator Network (AWIN).

For almost all systems (n=23) **audits** aimed at verifying compliance with the label's standard by food businesses participating in the system are performed by **third-party auditors.** In the case of the Danish public labelling system Bedre dyrevelfærd, audits may be performed by the label's own auditors in addition to delegated independent certification bodies. In most systems (n=15), food businesses are informed in advance that they will soon be audited. Conversely, in the remainder of cases (n=6) audits are **not announced** (notably, Tierschutzlabel "Für Mehr Tierschutz", Label Rouge, Beter Leven keurmerk, Bedre dyrevelfærd, Initiative Tierwohl and the German national AW label).

Most of the systems studied (n=16) distinguish between different levels of non-compliances with the label's standard, while in the remainder of cases (n=4) (notably, Welfair, Bienestar Animal avalado por ANDA, Label Rouge and the German national AW label) such a distinction is not foreseen at present. Also in this respect different approaches can be observed across the labelling systems studied with levels of non-compliance ranging from a minimum of two (e.g. Anbefalet af Dyrenes Beskyttelse) up to a maximum of four levels (e.g. KRAV). In addition, two systems (i.e. Interporc Animal Welfare Spain and Etiquette Bien-Être Animal) distinguish between levels of non-compliance using a scoring system.

Overall, the analysis performed above shows that the labelling systems covering AW that are currently present on the EU market vary greatly in terms of functioning and design. Nonetheless, a single-tier design, the fact that AW requirements laid down in the label's standard are based on private rules, among others, and the independence of the audits carried out to verify compliance with that standard are the features that are common to most of the systems studied.

Table 7. Functioning of the labelling systems

Labelling system	Tier(s)	Number of tiers	Tiers' design	Basis of AW requirements set in the label's standard	Audits	Distinction between different levels of non-compliance
	Multiple	N/P	N/P	National legislation or guidance Private rules	Independent auditors	N/P
	Single	N/A	N/A	EU legislation or guidance National legislation or guidance	Independent auditors/ announced	2 levels
	Single	N/A	N/A	International codes or standards EU legislation or guidance Private rules	Independent auditors/ announced	2 levels
	Multiple	3	Hearts	Private rules	Label's own auditors and independent auditors/ unannounced	Yes
	Single	N/A	N/A	Private rules	Independent auditors/ announced	N/P
	Multiple	3	Stars	EU legislation or guidance National legislation or guidance Private rules	Independent auditors/ unannounced	Yes
	Single	N/A	N/A	EU legislation or guidance Private rules	Independent auditors/ announced	No
	Single	N/A	N/A	International codes or standards EU legislation or guidance National legislation or guidance Private rules	Independent auditors/ announced	2 levels
	Multiple	N/P	N/P	N/P	Independent auditors/ announced	2 levels
	Single	N/A	N/A	EU legislation or guidance National legislation or guidance Private rules	Independent auditors/ announced	Yes
	Multiple	5	Score (A-E)	International codes or standards EU legislation or guidance National legislation or guidance Private rules	Independent auditors/ announced	Scoring system

Labelling system	Tier(s)	Number of tiers	Tiers' design	Basis of AW requirements set in the label's standard	Audits	Distinction between different levels of non-compliance
	Single	N/A	N/A	International codes or standards EU legislation or guidance National legislation or guidance Private rules	Independent auditors/ announced	4 levels
	Single	N/A	N/A	EU legislation or guidance National legislation or guidance	Independent auditors/ unannounced	2 levels
	Multiple	3	N/P	EU legislation or guidance National legislation or guidance Private rules	Independent auditors/ announced	Scoring system
	Single	N/A	N/A	International codes or standards EU legislation or guidance National legislation or guidance Private rules	Independent auditors/ announced	4 levels
	Single	N/A	N/A	Private rules	Independent auditors/ unannounced	No
	N/A	N/A	N/A	More restrictive objective criteria than EU legislation	Independent auditors/to be defined	Not defined yet
	Multiple	2	Not defined yet	National legislation or guidance Private rules	Independent auditors	Yes
	Multiple	4	Same logo with different information	National legislation or guidance Private rules	Independent auditors/ announced	N/P
	Multiple	3	Not defined yet	All criteria are higher than the requirements of national legislation	Independent auditors/ unannounced	No
	Multiple	2	Colours	EU legislation or guidance National legislation or guidance	Independent auditors/ announced	2 levels
	Multiple	2	Stars	Private rules	Independent auditors/ unannounced	2 levels
	Single	N/A	N/A	Private rules	Independent auditors/ announced	Yes
	Single	N/A	N/A	International codes or standards EU legislation or guidance National legislation or guidance	Independent auditors/ announced	No

Legend: N/A =Not applicable; N/P = Not provided | Source: Online survey

Market penetration and impacts of the labelling systems

Table 8 shows the number of affiliates/members and the number of products certified per labelling system based on the replies provided in the online survey. It should be noted that the table only lists the labelling systems that provided relevant information.

In accordance with the data provided, the Swedish label KRAV is currently the system with most affiliates/members (approximately 6,800 between farmers and other food businesses such as processors, manufacturers and retailers). Other systems that have a large membership base are:

- Label Rouge in France (6,000 farmers and other 250 affiliated food businesses);
- Initiative Tierwohl in Germany (6,500 farmers and several other affiliated food businesses);
- The Italian label Disciplinare di etichettatura volontaria delle carni di pollame (over 3,640 poultry breeders and few other processors and manufacturers); and
- Beter Leven keurmerk (approximately 2,000 members among which 1,800 farmers).

Among the systems with fewer affiliates/members, not surprisingly there are some that have been recently established, including the Portuguese labelling system Best Farmer – Cuidamos do Bem-Estar Animal.

The number of certified/labelled products ranges from a minimum of 10 references in the case of the label Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk up to 5,500 in the case of Beter Leven keurmerk and 7,000 in the case of KRAV. In fact, as previously shown in section 5.3.2.3, KRAV is the system that currently covers the highest number of species and product categories among all the systems analysed. In the case of Etiquette Bien-Être Animal, whereas the exact number of product references that display the label at present is not known, retail sales accounted for 30 million products sold in 2020 and there is the prospect of reaching 45 million transactions in 2021.

Table 8. Number of farmers, processors, manufacturers, retailers and products certified are affiliated to the labelling systems

Labelling system	Farmers	Processors	Manufacturers	Retailers	Products certified
ANBEFALET AF DYRENES BESKYTTELSE	380	12	N/P	18	500
Bedre Dyrevelfærd	1,594	57	6	2,600	N/P
	1	0	0	0	N/P
Beter Leven	1,800	434 processors, 33 logistics, 4 food services, 22 egg packing stations, 56 chain managers, 51 slaughterhouses		23	5,500
ANDA	30	0	0	0	N/P
	0	2	2	0	N/P
una italia	3,643	19	19	0	N/P
EKO	500	200	100	25	N/P

Labelling system	Farmers	Processors	Manufacturers	Retailers	Products certified
	1,100	0	2	5	N/A 30 millions of products sold in 2020
	90% of the Dutch farmers	All the large processors	All the large manufacturers	All the large retailers	N/P
	6,500	100	50	All leading retailers in Germany	N/P
	48	11	27	0	N/P
	4,000	± 800 (including processors, retailers, restaurants etc.)			±7,000
	6,000	250 companies (including hatcheries, feed manufacturers, slaughterhouses etc)		N/P	>220
	144	3	3	5	25
	425	63	25	Almost all retailers in Germany	200
	17	170	170	25	10
	500	50	50	10	25

Legend: N/A = Not applicable; N/P = Not provided | Source: Online survey

Overall, there is little information available on the impact of the labelling systems studied on food businesses as well as on consumer confidence and understanding of AW practices.

Only some among the labelling systems analysed have carried out studies in this respect and very few, in fact, conduct research on a regular basis. By way of an example, Beter Leven keurmerk measures consumer confidence once or twice a year with the latest research showing that 94% of Dutch consumers recognise the label.[208] The Danish national labelling system Bedre dyrevelfærd also measures consumer confidence every year with the latest research showing that 75% of Danish consumers trust it.[209] Also, various studies indicate that around 97% of French households can recognise the logo of Label Rouge[210] to which they associate greater quality, taste and respect of AW.

Based on the responses provided by the labelling systems in the online survey, almost half of the respondents (n=11) clearly indicated that they have never investigated or measured whether their label effectively contributes towards a better consumer understanding of the relevant production systems. This is therefore an aspect on which future consumer research might focus. Likewise, the impact of these labelling systems on the actual welfare of the species covered needs to be further researched as evidence in this respect is generally limited and information collected during this research is primarily based on perceived benefits.

5.3.2. Comparative assessment of selected animal welfare labelling systems

Building on the mapping of the existing labelling systems covering AW generated through the online survey, further research was carried out with the objective to deepen the understanding of

their functioning and draw comparisons across a more limited sample (n=11), which was selected in accordance with the criteria listed in section 2.3 ('AW labelling interviews').

As referred earlier on, to this effect the critical evaluation framework developed by More at al. (2017) was used and adapted to produce a targeted comparison between the labelling systems selected for further analysis in terms of their:

- "Scientific substantiation" and namely whether and to what extent the label's standard underpinning the system:
- Is based on science;
- May be reviewed in light of scientific progress; and
- Takes into account output-based measures alongside input-based measures.
- "Effectiveness" and namely whether the governance of the system foresees:
- That its overall performance is subject to regular review or evaluation;
- Strategies and/or incentives to broaden the membership base as a way to mainstream AW in the relevant production chain(s); and
- Strategies and/or incentives to ensure continuous improvements by members as far as AW practices are concerned.
- "Efficiency" and namely whether and to what extent:
- Clearly defined policies on allocation of costs deriving from the participation in the system are in place;
- Coordination with other auditing requirements is in place; and
- Synergies with other international, national or local initiatives on AW exist.
- "Transparency" and namely whether:
- The label's standard is publicly available;
- The governing bodies of the system regularly report on its activities and, if so, how;
- Adequate publicity is given to the key activities to be undertaken by the system in future, including the update and the broadening of the scope of the label's standard;
- Specific policies aimed at avoiding situations of conflict of interest in the context of the key activities performed by the system (notably, standard-setting and auditing) are in place; and,
- Members can appeal against the decisions taken by the labelling system affecting them.

Scientific substantiation

Table 9 shows how the labelling systems under study perform in terms of scientific substantiation.

Based on the information gathered through the online survey and the interviews of the owners/managers of the labelling systems studied, all systems take science into account to a varying degree for the development of the requirements/criteria underpinning the label's standard. In a majority of cases (n=6) scientific information relevant to AW is complemented by other criteria, including practical experience gained on AW practices, stakeholders' technical expertise and/or good practices or recommendations by NGOs. In other cases (n=4) only science provides the basis for the content of the label's standard.

The scientific sources used for the development of the label's standard are specific to each system. Overall, EFSA output and science underpinning EU and/or national legislation or that results from EU funding (e.g. Welfare Quality protocols) are taken into account by the systems studied (n=6). In few cases (n=2) scientific output of national academic or technical research bodies constitutes the starting point for the development of the requirements/criteria of the label's standard (e.g. Label Rouge and Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk).

Most systems studied have procedures in place allowing the review of the label's standard to take into account new scientific knowledge and/or changes that may occur in the relevant legal framework. In most cases (n=5) the review takes place at fixed intervals (mostly on an annual basis),

whereas the governance of other systems (n=4) foresees more flexibility in that respect. Only in one case (Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk) there is no procedure in place, in all likelihood due to the basic nature of the requirements underpinning the label's standard (i.e. cows in pasture). In the case of the Spanish label Welfair, the update of the label's standard is out of its remit depending on the review of the quality protocols by the Welfare Quality Network and the Animal Welfare Indicator Network (AWIN).

Finally, the analysis conducted shows that the label's standard of most systems in the sample (n=8) consists of a mixture of different AW requirements. These include input-based measures, which may be complemented by outcome-based/ABMs[211] on the farm and/or at slaughter. In few cases (e.g. Beter Leven keurmerk and KRAV) ABMs do not constitute formally part of the label's standard as of yet, although awareness about their importance and implications as AW indicators is raised in the context of advisory programmes or guidance documents addressed to affiliates/members. The Dutch label Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk is the only system that does not rely on ABMs and, once again, this is most likely due to the basic nature of the requirements underpinning the label's standard.

As it will be shown under section 5.3.2.4, most systems studied make publicly available the label's standard.

Based on the analysis performed, overall, the level of scientific substantiation of the systems analysed can be considered satisfactory. However, future research may contribute to a better understanding of how the AW science taken as reference by each system has been translated in the label's standard. Likewise, future research could draw more targeted comparisons in terms of scientific substantiation across systems covering the same animal species.

Table 9. Comparative assessment between selected AW labelling systems – Scientific substantiation

Labelling system	Overall approach	Specific scientific sources and tools	Frequency of the review of the standard	Use of Animal-Based Measures (ABMs)
ANBEFALET AF DYRENES BESKYTTELSE	Most requirements underpinning the label's standard are based on science	All available scientific sources (e.g. EFSA opinions and other EU reports and national research).	Every year	On the farm At slaughter
Bedre Dyrevelfærd	Most requirements underpinning the label's standard are based on science	Science underpinning EU and/or national legislation (e.g. dairy cows)	Not set specifically by national law but adjustments can take place, if need be	On the farm At slaughter
Beter Leven	Most requirements underpinning the label's standard are based on science	Scientific research from national academia (Wageningen University) and other relevant international sources (University of Bristol)	Periodic review subject to varying intervals of time	Not as a part of the label's standard but awareness about the importance to apply ABMs is raised through guidance documents addressed to farmers; also farmers receive feedback from quality controls performed at slaughterhouses some of which can be qualified as ABMs
ANDA	All requirements underpinning the label's standard are based on science	Science underpinning EU legislation	Review performed whenever needed to take into account scientific progress	On the farm

Labelling system	Overall approach	Specific scientific sources and tools	Frequency of the review of the standard	Use of Animal-Based Measures (ABMs)
	Most requirements underpinning the label's standard are based on science	Welfare Quality protocol for broilers, RSPCA standards, EBENE	Every year until today	On the farm At slaughter
	Some requirements underpinning the label's standard are based on science	Scientific and technical expertise of the multi-stakeholder working groups responsible for the standard development	Every three years at least unless there are changes imposed by law	On the farm At slaughter
	Most requirements underpinning the label's standards are based on science	Science underpinning EU legislation, EFSA scientific output and other international and national sources	Every year	On the farm in the context of the advisory programmes managed by the system
	All requirements underpinning the label's standard are based on science	Scientific research from national technical advisory bodies for AW and AH (e.g. ITAVI, INRA and ANSES)	Review performed whenever needed to take into account scientific progress and meet consumer expectations	On the farm (voluntary and not specific to Label Rouge) At slaughter
	Most requirements underpinning the label's standard are based on science	Multiple international and national scientific sources alongside multi-stakeholder collaborations	Every year	On the farm At slaughter
	All requirements underpinning the label's standard are based on science	Scientific research from academia on dairy cows (Wageningen University) Consumer research also taken into account	No procedure in place to this end	No
	All requirements underpinning the label's standard are based on science	Welfare Quality and AWIN protocols and EU and national legislation as pre-requisite to be considered for certification	Depends on the frequency of the review of the protocols by the Welfare Quality Network and AWIN	On the farm (Welfare Quality and AWIN protocols) At slaughter (Welfare Quality and IRTA protocols)

Source: Elaborated by Arcadia International based on replies to the online survey and interviews with the owners/managers of labelling systems covering AW

Effectiveness

Table 10 shows how the labelling systems under study perform in terms of effectiveness.

Approaches to evaluate the overall performance of each labelling system vary significantly across the sample studied. While in no case there is an external independent evaluation foreseen, in some cases (n=5) an internal evaluation is performed on a regular basis (e.g. in the case of Etiquette Bien-Être Animal the first evaluation is ongoing). In other cases (n=4), there are no specific or formal procedures in place to assess the performance of the system. However, in few cases (notably Bedre dyrevelfærd, Label Rouge and KRAV) the system (or part of it) is subject to the supervision or the scrutiny of governmental/public entities.

The large majority of the systems studied (n=9) have not developed structured communication strategies to encourage new members to join. In some cases (e.g. Bedre dyrevelfærd, Beter Leven keurmerk) the policy elected by the labelling system is to rely entirely on markets dynamics, trusting that demand for AW friendly products from retailers and/or other food operators may exert pressure

on farmers and other players of the agri-food chain to join the system. In the case of Etiquette Bien-Être Animal, at present the system essentially relies on its members to raise awareness about the AW label among potential future members. In the case of Label Rouge, information campaigns targeting consumers and educational settings can have the effect to attract new members. However, even in the absence of structured communication strategies, in few instances occasional activities targeting potential new members have been carried out (e.g. KRAV) or are planned in future (e.g. Tierschutzlabel "Für Mehr Tierschutz"). In this context, only the Danish AW label Anbefalet af Dyrenes Beskyttelse has a communication strategy in place to attract new members, while the German label Initiative Tierwohl holds regular internal discussions on how to support participation in the system.

None of the systems studied has specific financial or non-financial incentives to encourage new members to join. However, occasional public funds for joining a labelling system of the type considered may be available at national level. For instance, CAP funding is used to that effect in certain MS (e.g. France), while in other instances this option seems to have been discontinued (e.g. Sweden).

Some among the systems studied (n=4) have not developed targeted strategies to ensure continuous improvements of their members in terms of AW practices. In the case of some multi-tier systems (e.g. Bedre dyrevelfærd, Etiquette Bien-Être Animal), there is in fact no obligation for affiliates/members to move from a lower to a higher tier of the system: rather, such improvements are the result of members' own commitments to AW and/or market pressure. Conversely, few other systems directly provide advisory services and/or practical guidance to ensure continuous improvements by their affiliates/members (e.g. KRAV, Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk) or hold regular discussions on this topic (e.g. Initiative Tierwohl). In the case of Etiquette Bien-Être Animal, cooperatives or producer organisations, which take part in the governing and advisory bodies of the system, contribute with their technical capacity to the continuous improvement in terms of on-farm AW practices.

The analysis conducted shows that most systems studied fulfil the criteria elected by More et al. (2017) as indicators of effectiveness for labelling systems covering AW only to some extent.

Considering the set of criteria applied to analyse 'effectiveness', overall, the systems under exam perform better under the criterion 'regular review/evaluation of the system performance' than in the case of the other two criteria. For the latter criteria, however, results that could be interpreted as a lack of effectiveness need to be appropriately contextualised for each one of the systems studied. And indeed, if one considers the lack of structured communication strategies aimed at enlarging the membership base of the various systems, this choice might be justified on different grounds, including the fact that:

- The membership already integrates a significant percentage of food operators who could be members; or
- Free market dynamics within a specific national context or market segment are considered more powerful tools.

Likewise, with regard to the lack of specific incentives to join the system, this choice may be justified because there are public funds that can be used to that effect or, as it will be shown in the following section, because the system itself contributes towards the costs of the implementation of AW practices borne by certain affiliates/members (e.g. farmers).

Table 10. Comparative assessment between selected AW labelling systems – Effectiveness

Labelling system	System performance	Strategies and incentives to join the system	Strategies ensuring continuous improvement by members in AW practices
ANBEFALET AF DYRENES BESKYTTELSE	The system is subject to an annual review with specific topics/issues being discussed by the governing body	There is a specific communication strategy to attract new members but no specific financial incentives available to encourage farmers to join	Continuous improvements are facilitated by the application of transitional periods during which stakeholders and members of the system have sufficient time to implement new AW requirements.
Bedre Dyrevelfærd	There is no formal independent evaluation procedure in place; however, as for any governmental initiative, compliance with basic principles of good governance must be ensured	There are neither specific strategies nor public incentives to attract more members, but rather a general reliance on market dynamics (e.g. food processors encouraging farmers to join)	There are no specific strategies to encourage members to move from a lower to a higher tier/level of the system; however, information campaigns targeting consumers, which are run by the system on a regular basis, may contribute to that effect
Beter Leven	There is no formal evaluation although in accordance with the ranking of a system paid by the government it qualifies as top-level for levels 2 and 3	There is no specific strategy or incentives to join the system but rather a general reliance on market dynamics (e.g. retailers requiring that food products are certified against the label's standard) also, market shares are very high compared to other AW labels in other EU MS	In addition to updating the label's standard at regular intervals, continuous improvements are facilitated by the application of transitional periods during which members of the system have sufficient time to adapt to new AW requirements
ANDA	The system is subject to an annual review	There is no specific strategy or incentives to join the system; the system focuses on small farmers and is designed to coexist with other systems	Strategies to support continuous improvements by members are discussed three times a year between the organisations managing the system
Niveau Bien-Être Animal	The first evaluation of the system is ongoing involving second-level audits carried out by certification bodies and interviews carried out with involved operators/members	There is currently no specific communication strategy to attract new members; rather producer organisations, professionals and experts who take part in the board and/or technical working groups of the system directly contribute to raising awareness about the label	There are no specific strategies to encourage members to move from a lower to a higher tier of the system nor an obligation for members to do so There is currently no provision of advisory services to members; in the case of farmers cooperatives or producer organisations normally ensure this support
Initiative Tierwohl	The system is subject to an annual review with specific topics/issues being discussed by the various working groups that operate under the system	Strategies to support participation (e.g. funds, educational campaigns, advisory services etc.) are normally discussed and agreed by the various working groups that operate under the system	Strategies to support continuous improvements by members (e.g. funds, educational campaigns, advisory services etc.) are normally discussed and agreed by the various working groups that operate under the system

Labelling system	System performance	Strategies and incentives to join the system	Strategies ensuring continuous improvement by members in AW practices
KRAV	Internal control performed by KRAV Board through targeted surveys (e.g. consumers, employees)	Awareness-raising events attended by food industry (e.g. EKO September) In the past CAP funds aimed at ensuring changes in agri-food production were available to farmers to join labelling and certification systems	Provision of practical guidance to members to ensure full compliance with the label's standard and EU legislation underpinning it
	Standard and certification bodies subject to accreditation by the national accreditation and conformity body	No specific financial incentives for farmers other than available public financing	Adaptation of the label's standard to allow members to use the system to meet new market trends (e.g. vegan products)
Label Rouge	There is no specific system in place to evaluate the overall performance of the system although the latter operates under the supervision of the NCA responsible for quality labels and its functioning is regularly discussed by technical committees	No specific strategy exists to attract new members but communication campaigns/activities targeting consumers and in educational settings serve also to raise awareness about the benefits of joining the system Occasional financial support through CAP or regional funds may be available to allow farmers to join the system	There is no structured approach towards ensuring continuous improvements by members: issues are addressed/discussed within the various technical committees of the system, if need be
FÜR MEHR TIERSCHUTZ	The findings of audits are generally used to review the system, including the label's standard	No specific strategy exists to attract new members mostly due to budget limitations for running communication campaigns The organisation of a "Tierwohl week" should take place in 2022 in partnership with Initiative Tierwohl	There is no structured approach towards ensuring continuous improvements by members: new ideas are subject to internal discussion before being tested
	There is no system in place to evaluate the performance of the system, which is in part due to the simplicity of the label's standard	No specific strategy exists to attract new members as the system is well established	The system relies on a large pool of technical experts (so-called "pasture coaches") who advise farmers on how to develop better grazing plans
BIENESTAR ANIMAL CERTIFICADO WELFAIR	The system is subject to an annual review, which begins with a meeting with all the certification organisations working with the label (currently 19) and which may ultimately lead to the review of its governance	Currently, there is no specific strategy or incentives to join the system but rather a general reliance on market dynamics (e.g. retailers requiring that food products are certified against the label's standard)	The system is based on a continuous improvement in terms of outputs: it works in cycles of three years after which a new cycle with more demanding objectives starts for the certified farms

Source: Elaborated by Arcadia International based on interviews with the owners/managers of labelling systems covering AW

Efficiency

Table 11 shows how the labelling systems under study perform in terms of efficiency.

In all the systems studied there are clear policies in place that regulate the allocation of costs to be borne by the affiliates/members of the system. In most cases, the costs incurred to implement AW

practices in a relevant production stage are sustained in their entirety by affiliates/members (e.g. Bedre dyrevelfærd, Beter Leven keurmerk, Etiquette Bien-Être Animal, KRAV, Label Rouge, Tierschutzlabel "Für Mehr Tierschutz"). However, there are few cases in which farmers' costs, in particular, are sustained, entirely or in part, by:

- Other members/food operators (e.g. dairies in the case of Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk; retailers in the case of Initiative Tierwohl); or
- The system itself (e.g. Anbefalet af Dyrenes Beskyttelse).

In the case of Bienestar Animal avalado por Anda, farmers' costs are considered to be minimal as the labelling system is essentially based on mandatory requirements set by EU legislation.

Other specific costs considered vary from one system to another and may include:

- Membership fees (e.g. Anbefalet af Dyrenes Beskyttelse, Label Rouge);
- The fees due for the use of the label/logo (e.g. Beter Leven keurmerk, Etiquette Bien-Être Animal, KRAV);
- The costs to cover the audits to verify compliance with the label's standard (e.g. Bienestar Animal avalado por Anda, Bedre dyrevelfærd, Beter Leven keurmerk, KRAV, Welfair).

Several among the systems studied (n=6) have policies in place that allow, in principle, for the coordination between the audits performed to ascertain compliance with the label's standard and other auditing requirements. However, in other instances a similar coordination is either not in place (e.g. Anbefalet af Dyrenes Beskyttelse, Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk) or simply not possible because the audits performed under the system are unannounced (e.g. Tierschutzlabel "Für Mehr Tierschutz", Initiative Tierwohl) or the requirements set by the label's standard are unique (e.g. Label Rouge).

Finally, the analysis conducted reveals that all systems studied have established collaborations and/or joined projects in the AW field namely with other national stakeholders. The range of stakeholders whom the systems under exam have partnered with is highly diversified and includes:

- NCAs (e.g. Welfair);
- Research institutes or bodies (e.g. Beter Leven keurmerk, KRAV, Label Rouge, Etiquette Bien-Être Animal);
- NGOs (e.g. Label Rouge);
- Commercial organisations (e.g. Anbefalet af Dyrenes Beskyttelse, Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk); and
- Other labelling systems or farm assurance schemes covering AW (e.g. Tierschutzlabel "Für Mehr Tierschutz", Initiative Tierwohl).

In this context, the experience of the Danish public AW labelling system Bedre dyrevelfærd deserves to be singled out. The system is in fact based on a public-private partnership, which ensures a permanent dialogue among all the key national AW stakeholders.

Overall, the existence of clear policies on allocation of costs between affiliates/members and the synergies with other national initiatives on AW identified in most systems studied are clear indicators of efficiency.

As regards the coordination with other auditing requirements, the assessment performed is somehow less clear-cut. On the one hand, most systems can be considered efficient to the extent which they ensure said coordination. On the other, regarding the systems that cannot ensure it, as their own audits take place without prior warning, it can be claimed that they guarantee a greater level of independence and transparency.

Future research in this field is needed to determine whether and to what extent costs and benefits deriving from the participation by food business operators in such systems are equitably shared across the relevant stages of the agri-food value chain.

Table 11. Comparative assessment between selected AW labelling systems – Efficiency

Labelling system	Allocation of costs	Coordination with other audits requirements	Coordination with other initiatives to improve AW
ANBEFALET AF DYRENES BESKYTTELSE	The cost of the labelling system is covered in two ways: farmers bear the costs of implementing AW requirements set by the system and of the audits performed to ascertain compliance, whereas there are no fees for participating in the system. Other food operators cover the costs of implementing AW requirements set by the system for the relevant production stages and of the audits performed to ascertain compliance, in addition to paying for the licensing costs for the use of the logo. The system covers some of the costs.	Currently, there is no coordination in place between the audits performed under the system and other auditing requirements	Few collaborations are in place with other national stakeholders (e.g. large retailers, organic stakeholders)
Bedre Dyrevelfærd	Farmers and other operators bear the costs of implementing AW requirements set by the system and of the audits performed to ascertain compliance; the system does not hold information on the allocation of costs across the production chain	Without prejudice to the official controls on AW performed by the national authority managing the system, coordination is ensured to the extent which the certification bodies that the system has entrusted with auditing tasks can perform simultaneously audits required by other quality systems	Besides being one of the various governmental initiatives to promote AW, the system is based on a public-private partnership and therefore relies on close collaborations between relevant national stakeholders and research bodies (e.g. Danish Agriculture and Food Council)
Beter Leven ★★★	Farmers bear the costs of implementing AW requirements set by the system and of the audits performed to ascertain compliance, whereas there are no fees for participating in the system Other food operators bear the costs of implementing AW requirements set by the system for the relevant production stage and of the audits performed to ascertain compliance, in addition to paying for the licensing costs for the use of the logo	Coordination works on two different levels: The system builds on existing basic labelling systems in terms of criteria and requirements; A clear separation of competences exists between audits performed under the system and other audits (e.g. IKB food safety certification) to avoid duplication of efforts in the AW field	Long-standing cooperation with national academia on AW issues (notably Wageningen University)
ANDA	The system does not require a membership fee; farmers only bear the costs of the audits to ascertain compliance, while the costs of implementing AW requirements are minimal as the system is based on existing EU AW requirements	As audits are carried out by pre-existing independent certification bodies, their scope generally may cover auditing requirements other than those imposed by the system	The number of rural development and sustainability projects in which the system has taken part is higher than those relevant to AW

Labelling system	Allocation of costs	Coordination with other audits requirements	Coordination with other initiatives to improve AW
	Farmers and other operators bear the costs of implementing AW requirements set by the system and of audits performed to ascertain compliance with the requirements. An annual membership fee also applies to the stakeholder in charge of the product line bearing the Etiquette Bien-Être Animal logo The system holds no information on the precise repartition of costs ensuing from the implementation of AW requirements set by the system across the relevant production chain.	Whenever possible, the staff of the certification bodies perform simultaneous checks aimed at verifying compliance with other overlapping requirements (e.g. Label Rouge checks). Business operators involved in several product lines (e.g. slaughterhouses) can share their audit results with interested partners (only 1 annual audit required)	Few collaborations/projects in the AW field currently ongoing with research bodies (e.g. LIT Ouest Territoires d'Elevage)
	The costs of the implementation of the system for farmers are covered by financial contributions to the system, which are made by retailers, while the costs incurred by slaughterhouses are reflected in the contracts with processors or retailers	The audits performed under the system may be carried out simultaneously as other audits although this is not always possible due to the fact that the former take place without prior warning	There is a regular cooperation in place with quality assurance schemes (e.g. QS in Germany and Beter Leven keurmerk in the Netherlands)
	Farmers bear the costs of implementing AW requirements set by the system and of the audits performed to ascertain compliance (based on a pre-established pricing list), in addition to the licensing costs for using KRAV label (fixed fee) Other food business operators (e.g. processors) are charged based on a given % of sales value of KRAV labelled products within pre-established maximum caps	Whenever possible, the staff of the certification bodies perform simultaneously checks aimed at verifying compliance with public and/or private requirements that overlap (e.g. EU organic legislation and KRAV standard)	A number of collaborations are currently in place with other stakeholders (e.g. national association of slaughterhouses and Swedish Centre for AW) as well as with relevant research bodies (e.g. Ekologisk produktion och konsumtion – EPOK, Swedish University of Agricultural Science).
	Besides a membership fee, farmers bear the costs of implementing AW requirements set by the system Costs of audits performed at farm level are financed with membership fees and paid by the Organismes de Défense et de Gestion (ODG)	As the label's standards are very specific, no coordination exists with other auditing requirements; nonetheless, other labelling systems may be based on Label Rouge standard	Several collaborations are in place with other national and international stakeholders (e.g. AW NGOs) as well as with national research or scientific bodies (e.g. ITAVI, ANSES).
	Allocation of the costs vary in accordance with the production chain with farmers bearing all costs or the largest share	Currently, there is no coordination in place between the audits performed under the system and other auditing requirements mainly because the former take place without prior warning while other audits tend to follow regular schedules	There is cooperation with other labelling systems present on the national market (e.g. Initiative Tierwohl, Neuland) as well as with the NCAs for specific pilot project

Labelling system	Allocation of costs	Coordination with other audits requirements	Coordination with other initiatives to improve AW
	All costs for participating in the system are borne by dairies, including those incurred by farmers for implementing AW requirements set by the system	Currently, there is no coordination in place between the audits performed under the system and other auditing requirements	Few commercial partnerships with leading brands have been established over the last five years
	To cover the costs of the system, certification bodies tasked with auditing pay an annual fee for each species they can audit; a fee for the training of their staff on the relevant AW protocols; a fee for each farm certified and the costs of the audits of the owner of the system. The costs of the audits performed by certification bodies are borne by members.	While the system is solely responsible for standard-setting and auditing activities are out of its remit, audits to verify compliance with the label's standard can take place simultaneously as other audits (especially when covering traceability)	Several collaborations in the AW field currently ongoing with other private and public stakeholders (notably NGOs and NCAs)

Source: Elaborated by Arcadia International based on interviews with the owners/managers of labelling systems covering AW

Transparency

Table 12 shows how the labelling systems under study perform in terms of transparency.

Almost all systems make publicly available their label's standard. Etiquette Bien-Être Animal is the only system that does not make its standard available on the internet, although this can be requested to the system by any interested party.

A majority of the systems studied (n=8) produce reports that provide details on the activities undertaken and, in some cases, on the market uptake of the system (e.g. Beter Leven keurmerk, Label Rouge). In most cases reports can be consulted on the internet, are subject to wide dissemination and/or can be accessed upon request. In a few cases, publicity to the activities undertaken by the system is made also through the publication of press releases (e.g Tierschutzlabel "Für mehr Tierschutz", Initiative Tierwohl). As to the remainder of the systems that do not report on their activities in a regular and/or structured manner, this may be due to the fact that the system has been recently established (e.g. Bienestar Animal avalado por Anda, Etiquette Bien-Être Animal) or work is progressing in this area (e.g. Welfair).

Communication on the future activities to be undertaken by the system – including the review of the label's standard – takes different forms according to the specific system considered and the targeted audience. In the case of food business operators who are members of the system, newsletters (n=4), email communications (n=3), presential meetings (n=2) and access to reserved areas in the system webpage (n=1) are used. Conversely, external stakeholders can be informed of developments that may impact the functioning and/or the design of the system primarily through open consultations (e.g. when the label's standard is being reviewed; n=2), press releases or other targeted communication activities (n=2).

Most systems analysed have policies in place aimed at avoiding possible situations of conflict of interest. This is particularly evident in the case of auditing activities: in almost all cases, these are entrusted to third-party auditing organisations (n=10) or to third-party organisations and to the label's own auditors (this is the case of Bedre dyrevelfærd). As regards the standard-setting process, in a majority cases (n=7) independence is ensured by running wide stakeholder consultations. The legal nature of the system (e.g. a NCA in the case of Bedre dyrevelfærd) or the fact that a separate entity is tasked with standard-setting (e.g. another NGO in the case of Beter Leven keurmerk) is

considered as an additional guarantee of the independence of the system when the label's standard is being developed or updated.

Finally, all the systems analysed provide their affiliates/members with the possibility to appeal decisions affecting them (e.g. financial penalties, downgrading, withdrawal of the label etc.). For such circumstances, most systems have either established formal procedures (n=6) or rely on contract law to regulate disputes that may arise (n=3). In the remainder of the systems examined, complaints by members are dealt through informal procedures.

In light of the above, overall, the level of transparency guaranteed by the systems that form part of the sample studied can be considered satisfactory.

Table 12. Comparative assessment between selected AW labelling systems – Transparency

Labelling systems	Availability of the label's standard	Regular reporting on the activities of the system	Publicity of standard review/development and other key activities	Conflict of interest policy	Means to appeal the decisions of the system
ANBEFALET AF DYRENES BESKYTTELSE	Publicly available	Activity report drafted on an annual basis	A quarterly newsletter is used to inform members	Standard-setting process involves wide stakeholder consultations	An informal procedure is in place
				Auditing performed by third-party auditors	
Bedre Dyrevelfærd	Publicly available	Information about the overall functioning of the system and register of members is public; data on sanctions, which are also published, are aggregated with other results from official controls on AW	Generally carried out through communications via email and/or organisation of meetings	Independence in standard-setting ensured by the legal nature of the system (national authority); also, standard-setting process involves wide stakeholder consultations	A dedicated independent governmental office deals with appeals by members of the system although is not specific to the label
		Results of own consumer research also published		Auditing performed by the system's own auditors or by third-party auditors who operate under the supervision of the system	
Beter Leven ★★★	Publicly available	Activity report drafted on an annual basis and publicly available	A newsletter is used to inform members of new developments	Independence in standard-setting ensured by the legal nature of the entity (NGO) to which this task is entrusted (Dierenbescherming); also, standard-setting process involves wide stakeholder consultations	A dedicated commission deals with appeals by members of the system
		Results of own research on consumer knowledge and	Other stakeholders are formally consulted in the	Auditing performed by third-party auditors	

Labelling systems	Availability of the label's standard	Regular reporting on the activities of the system	Publicity of standard review/development and other key activities	Conflict of interest policy	Means to appeal the decisions of the system
		preferences also published	context of the standard-setting process		
	Publicly available	Reporting on activities of the system is only internal (i.e. addressed to the founding organisations) and takes place during periodic meetings	Direct communication with members	Auditing performed by third-party auditors	Complaints are dealt immediately calling for an ad hoc meeting between the founding organisations
	Available upon request	Not yet as the system has been recently established (first performance evaluation currently ongoing)	A newsletter is used to inform members of new developments	No specific policy for standard-setting at present	An informal procedure is in place
			Occasional communication activities targeting other stakeholders mainly carried out by members	Auditing performed by third-party auditors	
				Members cannot participate in other national AW labelling systems	
	Publicly available	Activity report drafted on an annual basis and publicly available	Information mostly channelled to the membership via letters and emails	Standard-setting relies on multi-stakeholder working groups	Regulated by contract law
		Occasional press releases		Auditing performed by third-party auditors	
	Publicly available	Activity report drafted on an annual basis and publicly available	A newsletter is used to inform members of new developments	Standard-setting process involves wide stakeholder consultations	Decisions can be appealed before the certification bodies that perform the audits
			As a part of the standard-setting consultation process public hearings and surveys are also organised	Auditing performed by third-party auditors	

Labelling systems	Availability of the label's standard	Regular reporting on the activities of the system	Publicity of standard review/development and other key activities	Conflict of interest policy	Means to appeal the decisions of the system
	Publicly available	A market report produced on an annual basis, widely shared with relevant stakeholders and available upon request	Information mostly channelled via the members' representatives sitting in the various thematic committees that form part of the system as well as through emailing lists	Standard-setting process involves wide stakeholder consultations	An appeal procedure exists but rarely used
		An activity report also drafted on an annual basis mainly for internal use and available upon request	As a part of the standard-setting process both members and stakeholders are informed and consulted	Auditing performed by third party bodies accredited by the French Ministry of Agriculture	
	Publicly available	Activity report drafted twice a year and publicly available	Mainly through the activity report and press releases	Standard-setting process involves wide stakeholder consultations	Regulated by contract law
		Occasional press release		Auditing performed by third-party auditors	
	Publicly available	Activity report drafted on an annual basis and publicly available	As the label's standard is not frequently subject to changes, information activities are limited and mostly left to dairies	Auditing performed by third-party auditors	Regulated by contract law
	Publicly available	An interactive tool with all information related to activities and relevant statistics of the system is currently under development	Communication of key activities is made via the website, while the members of the system have a reserved area on the website where they are kept informed as need be	Independence in standard-setting ensured by the fact that standards are based on scientific protocols not developed by the owner of the system	A dedicated commission deals with appeals by members of the system
				Auditing performed by third-party certification bodies	

Source: Elaborated by Arcadia International based on replies to the online survey and interviews with the owners/managers of labelling systems covering AW

5.4. Prospects for a harmonised animal welfare labelling system at EU level

Under this section the prospects for a harmonised AW labelling system at EU level are presented and discussed.

In particular, the aim of the analysis performed under this section is to provide an answer to the following research question:

- Would there be added value from the introduction of mandatory "animal welfare" labelling for animal-based products at EU level and in what aspects?

In addition, due to the complexity that labelling systems covering AW present (as shown in section 5.3.1), further consideration is given to the potential scope and design of a possible future EU-wide AW label (section 5.4.2).

5.4.1. Added value of an EU-wide mandatory labelling system

Overall, the evidence collected during the research indicates that, at present, opinions on the added value that the introduction of harmonised mandatory AW labelling requirements at EU level might bring vary significantly across stakeholders, depending on the specific role each one of them plays in the agri-food chain. Against this background, the following sections present the main research findings directly relevant for the question referred above emerging from desk research, EU-level and national interviews as well as from the online survey that targeted labelling systems covering AW.

NCAs

In accordance with a survey addressed to all EU MS conducted by the German Presidency of the EU during the summer of 2020, a large majority of MS (n=20 out of a total of 25 respondents; i.e. **80%)** indicated to be **in favour of an EU harmonised approach to AW labelling** either through the adoption of EU legislation (n=15) or guidelines (n=5), with only two MS supporting a national approach. Likewise, a majority of MS (n=16) consider that an EU-wide AW label should go beyond the minimum legal requirements set by the EU legislation currently in force.

However, the same survey also revealed that **75% of the MS** that responded were **against the introduction of a mandatory EU-wide AW label.** This means that EU-level legislation, which was favoured by most respondents, should ultimately leave the choice to food business operators to follow the harmonised approach introduced at EU level or not.[212] The Conclusions on the introduction of a future EU-wide AW label adopted by the Council on 7 December 2020, overall, reflect the outcome of the survey suggesting the possibility of a voluntary EU AW label.[213] Several of the interviews that were conducted with NCAs during this research provided further confirmation that a voluntary approach vis-à-vis AW labelling is currently the preferred option of various MS (e.g. Denmark, France, Greece, Italy and Spain). In this respect, it is worth noting that the option of a voluntary approach is not uncommon in EU food labelling legislation. The provision of simplified nutrition information on the front of pack of pre-packed food products under Regulation (EU) No 1169/2011, the use of nutrition and health claims under Regulation (EC) No 1924/2006[214] as well as the use of reserved terms for poultry meat farming methods under Regulation (EC) No 543/2008 are all examples of EU labelling rules that must be complied with only if a food business operator opts for providing that information to consumers.

Finally, the survey of the German Presidency referred above also questioned MS as to whether a future EU-wide AW labelling system should coexist with other AW labelling systems – public and/or private – currently present on the EU market. Confronted with such a scenario, only a slight majority of the respondents (n=13, i.e. 52%) declared to be in favour of a EU regime that would admit that coexistence. In contrast, the remainder of MS was equally divided between those opposing the idea of any possible coexistence and those undecided. Interviews conducted with NCAs during this research project further have confirmed that doubts remain on how to conciliate in practice the application of an EU-wide AW labelling system with existing national labels (e.g. Denmark).

Always in relation to the issue of coexistence, country research at MS level also revealed that, besides those MS that already have developed a fully-fledged government-owned AW national label (see above 5.3.1), a few others are currently planning to introduce national AW labelling requirements. For instance, in Romania national legislation on AW labelling for pigs is currently being considered. Also, in Poland a draft law is under discussion with the objective to introduce an AW labelling system for pigs and dairy cows called "Dobrostan Plus" (i.e. Welfare Plus): the proposed system, however, has a very specific objective and scope insofar as it merely aims at attesting the positive outcome of cross-compliance checks at farm level in the context of the CAP. Conversely, reasons for **not** legislating at national level on AW labelling that were indicated during interviews with NCAs vary across the other MS studied during the research. Among others, these include:

- The view that AW labelling is an area that should be regulated at EU level in the first place (e.g. France, Spain but also Poland);
- Predicted strong opposition from the farming sector should AW labelling requirements be introduced at national level, notably for the higher production costs that their implementation would involve (e.g. Greece, Ireland) as opposed to the current costs deriving from compliance with on-farm AW requirements;
- The presence of well-established and well-performing AW labels on the domestic market (e.g. the Netherlands);
- The preference of the national market for private quality labels where AW is only one of the several aspects covered (e.g. Ireland); and
- Technical difficulties associated with the development of AW labelling legislation (e.g. Portugal, Spain) or with its practical implementation (e.g. France).

In spite of the prevailing support for a voluntary approach to AW labelling at EU level described above, some NCAs consider that the introduction of mandatory rules in this area could still provide some **opportunities,** including:

- Increased market transparency and a more homogeneous level of consumer protection across the EU market (e.g. Denmark, Poland);
- New economic opportunities for farmers (notably in terms of higher revenues) (e.g. Poland, Portugal);
- Increased food quality (e.g. Romania);
- Product differentiation namely vis-à-vis food imports from non-EU countries (e.g. Portugal).

However, for some NCAs the introduction of mandatory AW labelling rules at EU level would likewise pose some **challenges** in terms of policy, market impact and enforcement. In addition to how to ensure the coexistence between an EU AW label and those that exist on the EU market, potential future challenges primarily include:

- A possible loss of competitiveness for the agri-food sector insofar as EU-wide compulsory rules can have the effect to limit and/or discourage product differentiation/segmentation in terms of AW performance for animal-based products (e.g. Greece);
- The costs to be borne by public administrations to guarantee that there is an appropriate system in place to ensure verification of compliance with AW labelling requirements by concerned food operators (e.g. Ireland, Poland, Romania); and
- The current lack of adequate resources to step up AW enforcement at country level (e.g. Poland) – which, in the view of some interviewees, could be overcome by delegating powers to third-party control bodies as it already happens in the organic sector (e.g. again Poland but also Denmark and Greece).

Business stakeholders

EU-level and national interviews alike have revealed that **business stakeholders** across all categories generally **oppose the idea of mandatory AW labelling requirements at EU level.** Arguments presented against this scenario largely outnumber those in support.

Overall, the most recurrent reason given is the additional production costs that food business operators – and farmers in particular – would have to bear to ensure compliance with compulsory rules. At national level, this is the case in several among the MS that were analysed (e.g. Denmark, Greece, Ireland, Italy, Poland, Portugal and Romania). In few countries (e.g. Greece, Italy, Poland), some farmers' organisations consider that the introduction of AW mandatory labelling requirements at EU level would only be possible if:

- Appropriate financial aids were allocated at EU level to ensure the desired transition of farm holdings towards the implementation of the AW labelling requirements that will have to be complied with;
- Adequate transitional periods were foreseen under EU legislation to allow farmers to achieve compliance with the new AW labelling requirements gradually;
- Farmers were guaranteed a fair share of the higher price paid by consumers for the purchase of food products complying with EU AW labelling requirements; and/or
- Large-scale promotion campaigns of the new EU AW label were rolled out alongside education and marketing actions targeting European consumers.

Conversely, concerns over the costs that could derive from the introduction of an EU-wide AW mandatory label appear to be less prominent – or even absent – within the farming sector of the remainder of the MS studied during the research carried out for this paper. This is particularly true in countries where:

- Long-standing AW national policies exist and/or well-established AW labels are present on the market (e.g. the Netherlands, Germany); or
- AW labelling systems have been recently initiated by private actors (e.g. Spain).

After costs, the most recurring argument against EU AW mandatory labelling rules voiced by EU-level business stakeholders across all categories and national farmers' organisations is that private initiatives aimed at ensuring product differentiation in terms of AW performance would be discouraged, if not prevented. This policy scenario would therefore lead to a loss of the competitive advantage by EU animal-based products meeting higher AW requirements. This is a concern that is common to the farming sector of various MS (e.g. France, Greece, Spain), among others. Linked to that concern, there are fears that the establishment of a mandatory EU-wide AW label might lead to the end of AW labels that are already well-established in some countries and that are adapted/adjusted to local farming methods and consumers.

Another issue that has been raised by farmers' organisations of various MS (e.g. Greece, Ireland, Italy, Poland and Romania) is the scope of the future EU AW label and in particular if the latter will be designed in such a way to apply to both animal-based products imported from or intended for export to non-EU countries. For several farmers' organisations, this is a crucial issue to be addressed when discussing a possible mandatory EU AW label because:

- Animal-based products with EU origin already comply with AW standards that are higher than those guaranteed by imported products;
- The application of mandatory AW labelling requirements to EU exports would impact negatively their competitiveness on international markets in terms of higher end prices for consumers on these markets, notably in the case certain national meat productions that are largely dependent on exports outside the EU (e.g. sheep meat in Romania).

Also, certain farmers' organisations of some MS (e.g. Greece, Poland) consider that there would be no added value for their members if AW mandatory labelling requirements were introduced at EU level if it did not apply to specific trade channels/product segments such as:

- The food service sector; and
- Meat products packed upon consumer request on retail premises.

Finally, in certain MS (e.g. the Netherlands) farmers' representatives are quite sceptical about the practical feasibility of an EU-wide mandatory AW label considering the significant differences that exist across EU MS in terms of compliance with the current AW practices mandated by EU law.

Increased market transparency for consumers and standardisation of AW product requirements across the EU are the main arguments put forward by the few stakeholders who would not object

to the introduction of mandatory AW labelling requirements across the EU (e.g. the German pig farming sector).

AW NGOs

Overall, all **AW NGOs** that were interviewed at European and national level for the elaboration of this research paper have indicated to be **in favour of the establishment of mandatory AW labelling requirements at EU level.** The reasons given to justify the added value of an EU-wide AW label include the **opportunity** to:

- Drive improvements in AW practices all along the production chain through a market-driven and standardised approach (e.g. European AW NGOs but also some NGOs in Germany and Spain) – which, for some interviewees, legislation and official controls alone have so far failed to achieve;
- Ensure greater consumer protection and empowerment in the EU market as an EU wide label could guarantee independence, scientific substantiation and consistency of AW-related claims on animal-based products at the time in which labelling systems are proliferating across the EU (e.g. European AW NGOs but also some NGOs in Denmark, France, Germany, Ireland, the Netherlands, Poland and Spain);
- Provide new commercial opportunities, a comparative advantage and, therefore, higher economic returns for farmers (e.g. some AW NGOs in Greece, the Netherlands, Poland and Spain);
- Ensure that EU AW requirements are also respected by animal-based products imported from non-EU countries (e.g. some AW NGOs in Germany and Spain); and
- Extend the application of the current EU AW labelling requirements for shelled eggs to eggs used as an ingredient in processed food products (e.g. AW NGO in Germany).

For this stakeholder group, the establishment of a mandatory EU-wide AW label would present also some **challenges.** According to some national AW NGOs (e.g. Denmark, France, Germany, the Netherlands and Poland) the main obstacle to overcome is to agree on the specific criteria on which the future EU label should be based on, considering the technical complexity and the political sensitivity that are associated with it. For this reason, some of those NGOs consider that there is a concrete risk that the outcome of the EU decision-making process will correspond eventually to the lowest common denominator possible from an AW viewpoint. Similar concerns exist with regard to the scope of the EU label as some NGOs fear that this may not cover all the stages of the life of the animal.

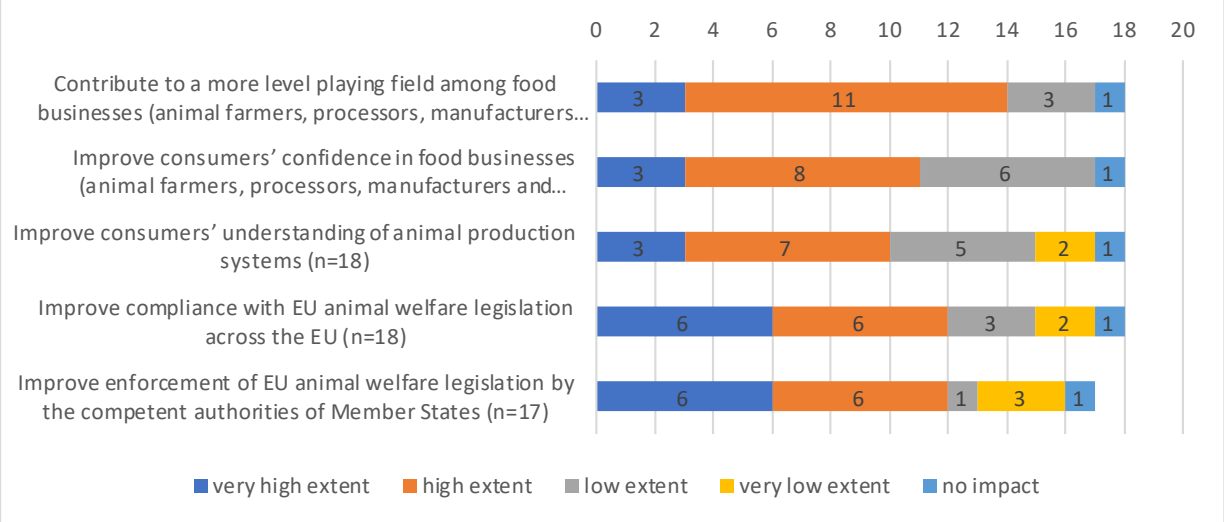
Furthermore, agreeing on an approach that would allow the coexistence between the EU label and the existing AW labels will be likewise a difficult task. Finally, some NGOs in Germany, Ireland and Poland have concerns regarding the costs that the implementation of a mandatory EU AW label and its enforcement may generate for NCAs considering their limited resources.

Owners/managers of existing labelling systems covering AW

In the context of the online survey carried out during the research, owners/managers of the labelling systems covering AW currently present on the EU market were questioned, among others, about the possible impacts that the introduction of a mandatory EU-wide AW label applying across species might have.

Figure 7 shows that the large majority of the respondents (n=14; i.e. 78%) consider that this scenario might contribute towards a greater level playing field among food business operators on the EU market either to a "very high extent" or to a "high extent". The contribution that a mandatory EU AW label would make towards improved levels of compliance with EU AW legislation and better enforcement across the EU market registered, overall, comparably positive response rates.

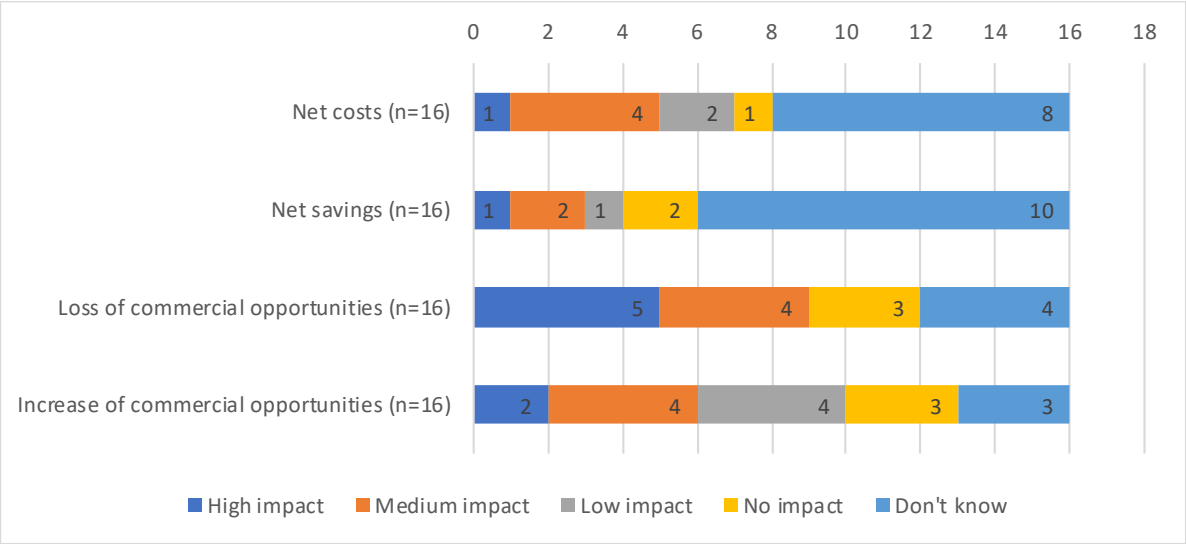
Figure 7. Labelling systems covering AW – Perceived extent of the impacts deriving from the creation of an EU AW mandatory label applying across species



Source: Online survey

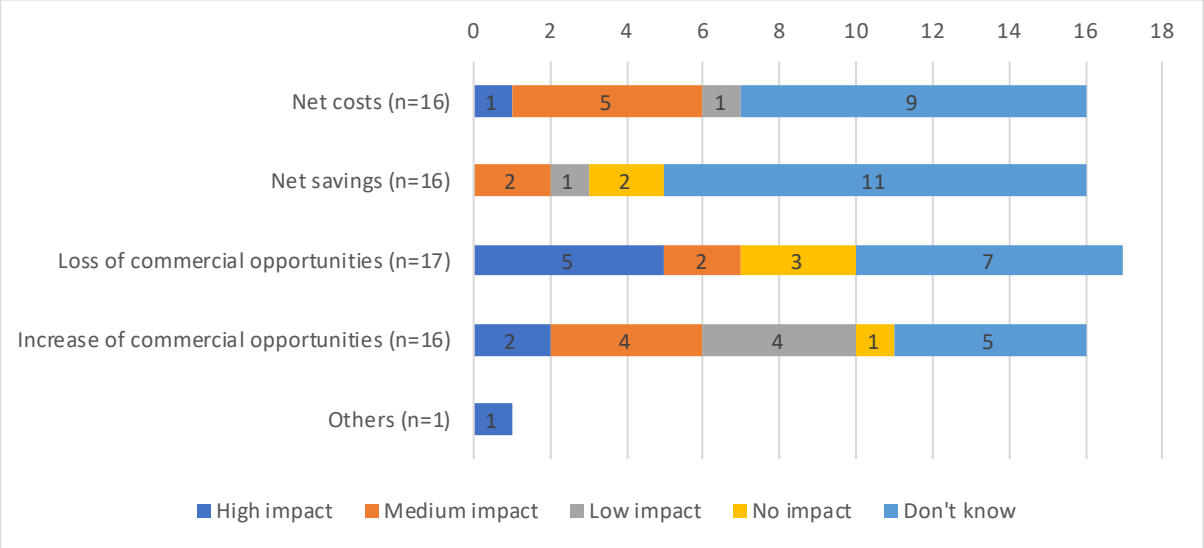
Furthermore, almost one third of the respondents consider that the introduction of a mandatory AW label at EU level might have a **highly negative impact** for the activity of the owners/managers of existing AW labels and ultimately result in the **loss of future commercial opportunities** (Figure 8). Similar results (29%) were observed when the impacts on the owners/managers of mixed labels were considered by respondents (Figure 9).

Figure 8. Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact owners of existing AW labels?



Source: Online survey

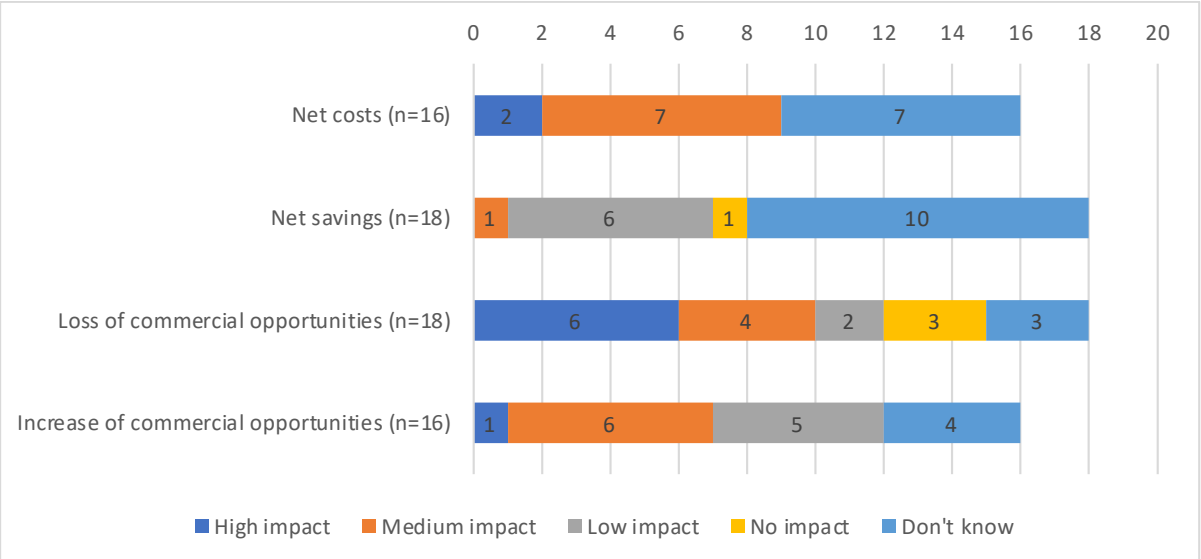
Figure 9. Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact owners of existing mixed labels (i.e. labels incorporating AW and other dimensions such as sustainability, authenticity, quality, traceability, etc)?



Source: Online survey

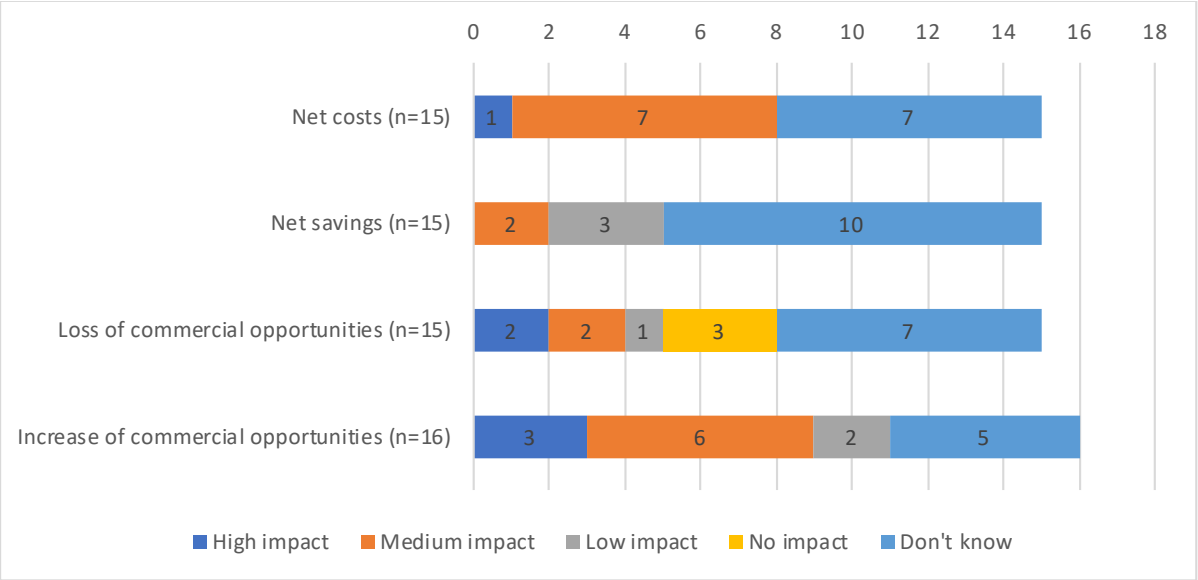
As to the impacts on food businesses using AW labels, one third of the respondents consider that the 'mandatory EU AW labelling' scenario might have a high impact in terms of **loss of commercial opportunities** for those operators (Figure 10). Conversely, if one considers the impact on food businesses using mixed labels, it is higher the percentage of respondents who consider that an EU AW label is likely to **increase commercial opportunities** than that of those who predict losses (Figure 11). Regarding the impact in terms of **net costs,** this is predicted by most respondents to be medium for both types of food businesses under exam, whereas most respondents (on average 60%) could not provide any estimation in relation to potential net savings.

Figure 10. Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact food businesses (farmers, processors, manufacturers and retailers) using existing AW labels?



Source: Online survey

Figure 11. Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact food businesses (farmers, processors, manufacturers and retailers) using existing mixed labels?



Source: Online survey

5.4.2. Potential scope and design

This section presents and discusses the findings emerging from EU-level and national interviews with regard to the potential scope and design of a future EU-wide AW label, either mandatory or voluntary, in accordance with the respective positions expressed by each stakeholder in this respect (see previous section 5.4.1).

General vs species-specific label

EU and national stakeholders interviewed across all categories consider that the development of an EU-wide AW label based on criteria common to all animal species would bring little added value knowing that the very notion of AW varies to a significant extent across farmed animal species. The development of AW labelling requirements that are **modelled on the specific ethological characteristics of the animal** and take into account the modern production methods is the most common approach among the labelling systems covering AW that are currently present on the EU market, as illustrated under section 5.3.1.3.

For most EU business stakeholders, the species for which harmonised AW labelling requirements should be developed at EU level in the first place are those currently covered by EU legislation. Only after that EU AW labelling requirements for "secondary" species (e.g. bees) could be elaborated. Overall, European AW NGOs share also this position, suggesting that broilers could be a good starting point for the development of harmonised AW labelling requirements at EU level. The results of the survey conducted by the German Presidency show that NCAs consider that, as a matter of priority, an EU-wide AW label should cover the following species: pigs, broilers, beef cattle, calves, dairy cows and laying hens. At national level, when present, these priorities generally tend to reflect the most important species in terms of national or local production.

Finally, it is worth mentioning that developing species-specific criteria underpinning AW labelling is quite a challenging endeavour. By way of an example, it took three years to the German NCA to establish AW labelling requirements at national level only for pigs.

Stages of the life of the animal to be covered

Overall, EU and national stakeholders across all categories who were consulted for the elaboration of this research paper have stated to be in favour of an integrated approach to labelling that would cover **all stages of the life of the animal** that are relevant from an AW standpoint (that is rearing, transport and slaughter). Nevertheless, for few stakeholders this approach might pose some practical challenges, namely if national enforcement authorities were to verify compliance with the applicable labelling requirements. As referred also under section 5.4.1, not only would this raise issues of capacity (the ability of MS NCAs to inspect regularly farms is notoriously limited) but also issues of competence, to apply an audit approach to a wide variety of food business operators (e.g. farmers, transporters and slaughterhouses).

Going beyond AW

The Farm to Fork strategy, which was published by the EC in May 2020,[215] has opened the discussion at EU level on the development of a dedicated policy and legislative framework for the regulation of sustainability labels for food products. This discussion is relevant also for AW as the latter is generally regarded as one among the different aspects enshrined in the concept of sustainability.

In this respect, most EU stakeholders interviewed across all categories – in addition to 84% of the MS that took part in the survey of the German Presidency referred above under section 5.4.1 – consider that the scope of a future EU-wide AW label should cover **only** AW-related aspects. In fact, it is generally believed that the importance of AW would be somehow diminished in case this extrinsic product dimension is addressed in the context of a labelling system covering other product aspects. Also, a mixed approach could potentially lead to certain technical contradictions that may be difficult to address: for instance, while for certain species highly intensive animal production systems guarantee lower levels of AW, the same systems may have a reduced impact on the environment and be more effective for managing AH and food safety than extensive production systems (e.g. this would be the case of laying hens and broilers in the view of the European poultry sector). For EU-level AW NGOs, the development of an EU label covering AW alongside other production aspects looks a difficult endeavour technically and politically, which could delay the whole process.

Based on the interviews conducted, only EU-level stakeholders of the meat industry sector appear to be in favour of a more holistic approach to labelling of animal-based products combining AW together other production dimensions and notably sustainability.

Models for an EU-wide label

Having to consider national labelling systems covering AW that could serve as a model for the development of an EU-wide label, Beter Leven keurmerk in the Netherlands and Etiquette Bien-Être Animal in France were those most frequently mentioned by EU-level stakeholders interviewed across all categories.

Both the above referred systems are **multi-tier labels.** As illustrated earlier under section 5.3.1.4, because of the way they are designed multi-tier or multi-level labelling systems foresee different levels of compliance with progressively higher AW requirements. For EU-level business stakeholders, in particular, these systems present the advantage that they have the **status of voluntary certifications** and are entirely market-driven. This means that the choice to join the system and evolve towards more virtuous levels of compliance within the system lies entirely with the individual business operator.

Likewise, a multi-tier design is the preferred option by European and national AW NGOs, as such a design generally allows the visual development of easy-to-grasp messages addressed to the final consumer. For most NGOs consulted the pictorial representation of the level of AW that a food product meets needs to be accompanied by a labelling text indicating the specifying method of production (MoP) used at the farm of origin (e.g. enriched cages, free-range etc.).

This is however a position that is far from being consensual in particular among the national business stakeholders that were consulted during the research. Effectively, in some MS (e.g. Italy, Spain) multi-tier labels are considered ill-suited for the national market and its local consumers and even regarded as potentially discriminatory commercial practices.

Finally, account should be given of the fact that national interviews have proved that the range of labels identified as possible models for a future EU-wide label is much wider than the two labels mentioned above. In this context, examples of well-performing labels at national level include the Danish national AW label Bedre Dyrevelfaerd, the German Initiative Tierwohl, the quality label Board Bia in Ireland, and the label of the Royal Society for the Prevention of Cruelty to Animals (RSPCA) in the UK, among others.

6. Conclusions and recommendations

This final section presents briefly some of the main conclusions and a few pertinent recommendations from both parts of the research project: the evaluation of the on-farm AW legislation, and the study on the EU added value of introducing mandatory AW labelling requirements at EU level.

Ex-post evaluation of the EU acquis regulating on-farm animal welfare

The present research paper has aimed to evaluate the relevance, effectiveness, efficiency, impacts, coherence and EU added value of the EU legislation on on-farm AW. This legislation combines one general directive that sets out principles for the welfare of farmed animals irrespective of the species, and four species-specific directives on laying hens, broilers, pigs and calves. This evaluation was carried out in the context of an implementation report on on-farm AW to be drawn up by the European Parliament's Committee on Agriculture and Rural Development (AGRI), and could also support Parliament's work as a co-legislator on the revisions to the legislation in scope expected by the end of 2023.

Relying on desk research and interviews of stakeholders at EU and national level in 11 MS, the research paper has provided a first overview of how the full set of on-farm directives has been implemented.

On the **relevance** of the legislation, the study found that, of those stakeholders who felt in a position to comment on whether the legislation was aligned or not with the state of scientific knowledge, most agreed that it was outdated and in need of revision. The legislation is not recent, and several new findings have emerged that establish bases for revision. EFSA has been mandated by the EC to issue opinions that will contribute to the review of the legislation. While a number of stakeholders interviewed (representatives of farmers in particular) considered the current legislation fit for purpose and written in an appropriate manner, most stakeholders (NCAs, NGOs, experts, some representatives of the industry) considered that the wording of the legislation was often inadequate in the sense that it was too vague or provided exceptions or derogations to requirements. As a result, a number of undesirable practices have continued to be allowed. There was a shared sense among many stakeholders that fully specified requirements may not always be feasible, nor desirable as this could impose a level of burden and rigidity on sectors that are very diverse in terms of the different husbandry and production systems, levels of knowledge and ability to comply.

On the **effectiveness** of the legislation, a mixed picture emerges from the data: some directives have achieved desirable structural changes to the manner animals are reared, in particular the laying hens directive, the pigs directive (for pregnant sows) and the calves directive; in contrast, the general directive and the broilers directive have been said to have achieved only small positive impacts. The pigs directive has also failed to achieve some of its objectives, as mutilations and cramped and stressful housing conditions without enrichment remain the norm for pigs in many countries. With the exception of laying hens and calves directives, a combination of derogations, exceptions, vague requirement or the absence of specific protections in EU legislation have existed in parallel to various national legislations, all of which have been blamed by many stakeholders from different categories for distorting competition. The evidence on non-compliances, which is limited and challenging, for reasons discussed in the report and highlighted again at the end of this section, points to patterns of non-compliance that are common to some countries and sectors, as well as national and sectoral specificities. The reasons for non-compliance are multifarious, and some of them are common to many MS. The outlook of a leading north and west and a lagging south and east has begun to evolve, due to greater awareness, political commitment and activism in such countries as for example Italy, France, or the Czech Republic. EU legislation and official controls have been usually secondary to other factors when it comes to explaining improvements on the ground.

On **impacts,** the general directive has generally been the least impactful of the directives in scope of the study. The vague nature of the requirements and the large margins of interpretation it has allowed have made links between improvements on the ground and the directive impossible to characterise. The absence of species-specific protections for a number of species was seen by most stakeholders as a key problem for dairy cows, broiler and hen breeders, rabbits, sheep and turkeys. The peculiar constraints of each species and of the farmers concerned were highlighted as calling for a specific approach to each species rather than a common one. The broilers directive appears to have been the least impactful of the species-specific directives, in the sense that it did not fundamentally alter production systems, although it incorporated an animal-centred approach to the welfare of broilers and has paved the way for the greater use of animal-based indicators in farming. The evidence available suggests that the implementation costs it has generated for the sector may have been a fraction of those that were incurred by the eggs, veal meat and pigs sectors to comply with the other directives. In those three sectors, the directives have driven significant changes to buildings and equipment, and contributed to some changes to the demography of the sector. While working conditions were said to have improved for laying hen and veal meat farmers as a result, this was not necessarily the case for pig farmers.

On **efficiency,** the evidence, albeit limited, indicates that the costs of implementing the legislation were generally justified given the impacts they had, although there are strong views to the contrary from a few industry stakeholders.

On **coherence,** the legislation was found to be broadly coherent with AH legislation, although greater integration was called for between the two. There were strong and consistent views among stakeholders to suggest that there should be better integration between AW legislation and international trade policy, aquaculture policy, policy on fair prices within value chains, and the common agriculture policy. There were disagreements on the extent to which the legislation on AW is coherent with environmental policy.

On **EU added-value,** there was a general agreement that the directives have added value by providing a common framework of rules, although more needs to be done to address divergence and consumer demands on AW within the EU.

Finally, the research conducted has encountered significant obstacles in terms of data availability and data quality, especially as regards compliance rates (i.e. 'effectiveness' of the implementation). Getting a clear sense of the reality of practices on the ground for the wide range of businesses, species and issues in scope would be challenging in any circumstances. In the context of AW legislation, this challenge is made far greater by two main factors. Firstly, the legislation does not specify a number of requirements (how they should be complied with or monitored) and therefore leaves much discretion to MS to specify numerous requirements and how they would assess them. This ample space for different approaches and sometimes for subjectivity, leads to inconsistent monitoring and enforcement across the EU. Secondly, MS have different approaches to resourcing and prioritising official controls, and to making information on those controls and their outcomes publicly available. Sometimes, and particularly for species that are not subject to specific regulations (such as rabbits), there are no or very few official controls. There are therefore major data gaps and uncertainties (including on quality) regarding the available data. Expert views and an assessment of stakeholder opinions can, to some extent, address these issues but greater margins of uncertainty than would be desirable persist nonetheless. For the above reason, the only firm recommendation that could be provided in the context of Research Task 1 concerns the EC, NCAs and business organisations that should work collaboratively on ways to tackle this information gap. The findings of this research paper could serve as a useful basis for future work to further specify the scope of the data problem,[216] and its various regulatory aspects, which need to be addressed as a matter of priority.

Animal welfare labelling

The research conducted led to the identification of **24 different labelling systems** covering AW across the EU market. In so doing, it provides a first comprehensive overview of the existing labelling practices in this area at EU level.

Overall, the analysis performed corroborates initial indications found in literature that labelling systems addressing AW have been proliferating on the EU market over the last years. If one considers the systems mapped out in this research paper, since 2010 until May 2021 13 labelling systems covering AW have been established as opposed to 10 introduced in the period 1965-2010. Moreover, only between 2019 and 2020 5 new labelling systems have been established.

In addition, the geographical distribution of the systems studied reveals that these are currently concentrated in a limited number of MS (i.e. Spain, the Netherlands, Germany, France, Denmark, Italy, Sweden, Austria and Portugal) with Southern European countries registering the highest increase of newly established systems over the last five years.

The majority of the systems analysed have been initiated by the private sector, while the remainder is the result of public-private partnerships or, to a lesser extent, of the initiative of NCAs of EU MS. Denmark has been the first MS to introduce a national AW label in 2017 and has been recently followed by Germany and Italy whose systems are currently under development. Also, most systems apply to a specific national market with only a few having – or aspiring to have in the near future – an international dimension.

All systems analysed are **voluntary** in nature, leaving to food business operators the choice to join them. Also, the label's standard of most systems includes other aspects related to the product besides AW (primarily, traceability, sustainability and health). In terms of species, **pigs, broilers, and dairy cows** are those most frequently covered across the sample of systems studied, while fish is the least recurrent one. Furthermore, while all systems cover AW on the farm, most of them address also AW during transport and/or at slaughter depending on the specific species considered. In terms of food products, the systems analysed cover primarily fresh, frozen and processed meat, whereas dairy products, eggs and eggs-products are covered to a lesser extent.

The systems analysed vary greatly in terms of functioning and design. Despite this heterogeneity, the features, which are common to most of the systems studied are: a single-tier design, the fact that AW requirements laid down in the label's standard are based on private rules, among other things, and the independence of the audits carried out to verify compliance with that standard.

A comparative assessment of a more limited sample of labelling systems (n=11) has then shown that their level of **scientific substantiation** and **transparency** can be considered satisfactory, overall. However, further research is needed to determine the **effectiveness** of those systems when considering, in particular, their impact on food businesses or in relation to consumer understanding of production systems as little information is available to draw robust conclusions. The same can be said with regard to their actual impacts on AW as information collected during the research in this respect is limited and primarily based on perceived benefits. Likewise, future research may further investigate the **efficiency** of the labels under exam, namely to establish whether and to what extent costs and benefits deriving from the participation by food businesses in such systems are equitably shared across the different stages of the relevant product chain.

Concerning the possible **added value** from the introduction of **mandatory EU AW labelling requirements** for animal-based products, the data collection activities carried out during the research indicate that, overall, EU and national stakeholders hold different views in this respect.

Currently, the prospect of AW mandatory labelling rules at EU level does not encounter the support of EU business stakeholders across all categories and national farmers' organisations, the main reason being the economic implications stemming from their implementation for food business

operators and, above all, for farmers. Besides the possible financial impacts, this group of stakeholders considers that, while mandatory rules could effectively ensure full harmonisation and a greater level playing field across the EU market, they would discourage, if not prevent, private initiatives oriented to product differentiation from using AW as a market leverage. Concerns have been also voiced in relation to the impact that compulsory EU AW labelling requirements may have on the competitiveness of EU exports on international markets, if applied to them, as well as on their applicability to EU imports.

Likewise, literature analysed during the research indicates that most MS are not in favour of the introduction of compulsory requirements in this area and support EU harmonisation through a voluntary approach instead. The consultations performed with NCAs in the view of the elaboration of this paper have generally confirmed this finding and showed that the reasons to support a non-binding approach vary by MS and include implementation costs for food business operators and NCAs alike, challenges in enforcing AW labelling requirements and a possible generalised loss of competitiveness in the EU agri-food sector.

Conversely, according to the owners/managers of existing labelling systems covering AW who responded to the online survey carried out during the research, the loss of commercial opportunities is the main predicted negative impact on their functioning that may derive from the introduction of mandatory labelling requirements at EU level.

In this context, European and national AW NGOs are among the few stakeholders in favour of the establishment of compulsory AW labelling rules for animal-based products at EU level. Among the benefits that have been associated with an EU-wide mandatory label, improvements in AW practices across the EU are expected through a market-driven approach, greater market transparency and consumer empowerment, as well as new business opportunities for farmers and other food business operators through the commercialisation of AW-friendly products.

Against this background, future research in this area should examine the possible financial impacts of the introduction of mandatory AW labelling requirements at EU level more closely, among other things, drawing from the experience of the public AW labelling systems that have been introduced over the last few years in some MS.

The evidence collected during the research indicates that, at this stage of the policy discussion, a **voluntary approach to AW labelling** at EU level is more likely to encounter the support of a larger stakeholder base in the EU. In terms of design, overall, stakeholders consider that an EU label should set out criteria that are species-specific, cover all the stages of the life of the animal and, with the exception of the European meat industry sector, strictly focus on AW aspects. Conversely, no strict consensus exists, as of yet, as to whether the label at stake should be designed as a single- or as a multi-tier labelling system.

References

EU-level documents

Broom D. M., 'Animal welfare in the European Union', European Parliament, Directorate General for Internal Policies. Policy Department C: Citizens' rights and constitutional affairs, 2017.

Commission Communication — EU best practice guidelines for voluntary certification schemes for agricultural products and foodstuffs, OJ C 341,16.12.2010, p. 5.

Commission Directive 2001/93/EC of 9 November 2001 amending Directive 91/630/EEC laying down minimum standards for the protection of pigs, OJ L 316, 1.12.2001, p. 36-38.

Commission Regulation (EC) No 543/2008 of 16 June 2008 laying down detailed rules for the application of Council Regulation (EC) No 1234/2007 as regards the marketing standards for poultry meat, OJ L 157, 17.6.2008, p. 46–87.

Commission Regulation (EC) No 589/2008 of 23 June 2008 laying down detailed rules for implementing Council Regulation (EC) No 1234/2007 as regards marketing standards for eggs, OJ L 163, 24.6.2008, p. 6–23.

Council Conclusions on an EU-wide animal welfare label, 7 December 2020 (OR. en) 13691/20.

Council Directive 1999/74/EC of 19 July 1999 laying down minimum standards for the protection of laying hens, OJ L 203, 3.8.1999, p. 53–57.

Council Directive 2001/88/EC of 23 October 2001 amending Directive 91/630/EEC laying down minimum standards for the protection of pigs, OJ L 316, 1.12.2001, p. 1-4.

Council Directive 2002/99/EC of 16 December 2002 laying down the animal health rules governing the production, processing, distribution and introduction of products of animal origin for human consumption, OJ L 18, 23.1.2003, p. 11–20.

Council Directive 2007/43/EC of 28 June 2007 laying down minimum rules for the protection of chickens kept for meat production, OJ L 182, 12.7.2007, p. 19–28.

Council Directive 2008/119/EC of 18 December 2008 laying down minimum standards for the protection of calves, OJ L 10, 15.1.2009, p. 7–13.

Council Directive 2008/120/EC of 18 December 2008 laying down minimum standards for the protection of pigs, OJ L 47, 18.2.2009, p. 5–13.

Council Directive 88/166/EEC of 7 March 1988 complying with the judgment of the Court of Justice in Case 131/86 (annulment of Council Directive 86/113/EEC of 25 March 1986 laying down minimum standards for the protection of laying hens kept in battery cages), OJ L 074 of 19.03.1988.

Council Directive 91/629/EEC of 19 November 1991 laying down minimum standards for the protection of calves, OJ L 340, 11.12.1991, p. 28-32.

Council Directive 91/630/EEC of 19 November 1991 laying down minimum standards for the protection of pigs, OJ L 340 de 11.12.1991, p. 33-38.

Council Directive 97/2/EC of 20 January 1997 amending Directive 91/629/EEC laying down minimum standards for the protection of calves, OJ L 25, 28.1.1997, p. 24-25.

Council Directive 98/58/EC concerning the protection of animals kept for farming purposes, OJ L 221, 8.8.1998, p. 23–27.

Council of Europe, Recommendation Concerning Cattle adopted by the Standing Committee on 21 October 1988.

Council of Europe, Recommendation Concerning Cattle. APPENDIX C: Special Provisions for Calves, adopted by the Standing Committee at its 26th meeting on 8 June 1993.

Council of Europe, Recommendation Concerning Domestic Fowl (Gallus gallus), adopted by the Standing Committee on 28 November 1995 at its 30th meeting.

Council of Europe, Recommendation Concerning Sheep, adopted by the Standing Committee at its 25th meeting on 6 November 1992.

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.

Council Regulation (EC) No 1099/2009 of 24 September 2009 on the protection of animals at the time of killing, OJ L 303, 18.11.2009, p. 1–30.

EC, Communication from the Commission to the European Parliament and the Council on a Community Action Plan on the Protection and Welfare of Animals 2006-2010, 23.1.2006, COM (2006)13 final.

EC, Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on the European Union Strategy for the Protection and Welfare of Animals 2012-2015, Brussels, 15.2.2012, COM(2012)6 final.

EC, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions – A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system, COM(2020)381 final, 20.05.2020.

EC, Commission staff working document: Evaluation of the European Strategy for the Protection and Welfare of Animals 2012-2015, SWD(2021) 77 final, 2021.

EC, Commission Staff Working Document on Best Practices with a View to the Prevention of Routine Tail-Docking and the Provision of Enrichment Materials to Pigs, 2016.

EC, Final report of an audit carried out in France from 12 to 22 November 2012 in order to evaluate the implementation of controls for animal welfare on farms and during transport. DG SANCO 2012-6446.

EC, Final report of an audit carried out in Portugal from 13 May 2019 to 17 May 2019 in order to evaluate Member State activities to prevent tail biting and avoid routine tail docking of pigs, DG(SANTE) 2019-6750

EC, First progress report from the European declaration on alternatives to surgical castration of pigs, 2014.

EC, Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, DG(SANTE) 2017-6241, Publication Office of the European Union, 2017.

EC, Overview report on education activities for farm, transport and slaughterhouse staff on animal welfare, DG (SANTE) 2016-6001, Publication Office of the European Union, 2016.

EC, Overview report on Commercial Rabbit Farming in the European Union, DG(SANTE) 2017-6303, Publication Office of the European Union.

EC, Overview report on the use of slaughterhouse data to monitor welfare of broilers on-farm, DG (SANTE) 2016-8999, Publication Office of the European Union, 2017.

EC, Report from the Commission to the European Parliament and the Council on the application of Directive 2007/43/EC and its influence on the welfare of chickens kept for meat production, as well as the development of welfare indicators, COM(2018)0181 final.

EC, Report from the Commission to the European Parliament and the Council on the impact of genetic selection on the welfare of chickens kept for meat production, COM(2016)0182 final.

EC, Report from the Commission to the European Parliament and the Council on the implementation of Council Directive 98/58/EC concerning the protection of animals kept for farming purposes, COM(2016)0558 final.

EC, 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, 24.11.2020, COM(2020)756 final.

EC, Eggs, Market Situation Dashboard, 05.05.2021.

ECA, Background paper: Animal welfare in EU, 2018

ECA, Special report No 31/2018: Animal welfare in the EU: closing the gap between ambitious goals and practical implementation.

EFSA, Opinion of the Scientific Panel on Animal Health and Welfare (AHAW) on a request from the Commission related to the welfare aspects of various systems of keeping laying hens, EFSA Journal 2005, 3(3):197, 174 pp.

EFSA, Opinion of the Scientific Panel on Animal Health and Welfare (AHAW) on a request from the Commission related with the risks of poor welfare in intensive calf farming systems, EFSA Journal 2006, 4(6):366, p. 1-180.

EFSA, Scientific Opinion of the Panel on Animal Health and Welfare on a request from the Commission on Animal health and welfare aspects of different housing and husbandry systems for adult breeding boars, pregnant, farrowing sows and unweaned piglets, EFSA Journal 2007 572, p. 1-13.

EFSA, Scientific Opinion of the Panel on Animal Health and Welfare on a request from the Commission on Animal health and welfare in fattening pigs in relation to housing and husbandry, EFSA Journal 2007 564, p. 1-14.

EFSA, Scientific Opinion on the welfare risks related to the farming of sheep for wool, meat and milk production, EFSA Journal 2014;12(12):3933, 128 pp.

EFSA, Scientific report of EFSA prepared by the Animal Health and Animal Welfare Unit on the effects of farming systems on dairy cow welfare and disease, Annex to the EFSA Journal 2009 1143, p. 1-38.

EFSA, Health and welfare of rabbits farmed in different production systems. Panel on Animal Health and Welfare, EFSA Journal 18(1), e05944, 2020.

EPRS, 'The EU dairy sector Main features, challenges and prospects', Briefing, December 2018.

EPRS, 'The EU pig meat sector', Briefing, September 2020.

EPRS, 'The EU poultry meat and egg sector-Main features, challenges and prospects', In-depth analysis, November 2019.

European Council, Animal welfare – an integral part of sustainable animal production – Outcome of the Presidency questionnaire, 2020.

European Platform on Animal Welfare Own Initiative Group on Fish, Guidelines on Water Quality and Handling for the Welfare of Farmed Vertebrate Fish, 2020, accessible at https://ec.europa.eu/food/sites/food/files/animals/docs/aw_platform_plat-conc_guide_farmed-fish.pdf.

FCEC, Study on the application of the broiler directive DIR 2007/43/EC and development of welfare indicators, Publication Office of the European Union, 2017.

German Presidency priorities regarding animal welfare, presentation delivered at the EU AW Platform meeting of 3 November 2020.

ICF et al., Study to support the evaluation of the European Union Strategy for the Protection and Welfare of Animals 2012-2015, Publication Office of the European Union, 2021.

Ihle R., Dries L., Jongeneel R., Venus T., Wesseler J., 'Research for agri-committee – The EU cattle sector: challenges and opportunities – milk and meat', European Parliament, Directorate-general for internal policies. Policy Department B: Structural and cohesion policies agricultural and rural development, 2017.

Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods, OJ L 404, 30.12.2006, p. 9-25.

Regulation (EC) No 854/2004 of the European Parliament and of the Council of 29 April 2004 laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption, OJ L 139, 30.4.2004, p. 206–320.

Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules, OJ L 165, 30.4.2004, p. 1–141.

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. 1-142.

Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007, OJ L 150 de 14.6.2018, p. 1-92.

Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, OJ L 304 22.11.2011, p. 18-63.

SCAHAW, 'The welfare of cattle kept for beef production', 2001. SANCO.C.2/AH/R22/2000.

SCAHAW, 'The welfare of chickens kept for meat production (broilers)', Scientific Committee in Animal Health and Animal Welfare. European Commission, Health and Consumer Protection Directorate General, 2000. SANCO.B.3/AH/R15/2000.

Special Eurobarometer 442. Report – Attitudes of Europeans towards animal welfare, 2016.

World Organization for Animal Health (OIE), 'Terrestrial Animal Health Code'. Chapter 7.11: Animal Welfare and Dairy Cattle Production Systems, 2019.

Academic sources

Alonso M.E. et al., 'Consumers' Concerns and Perceptions of Farm Animal Welfare', *Animals*, 10(3), 2020, p. 385.

Aluw M. et al., 'Exploratory Survey on European Consumer and Stakeholder Attitudes towards Alternatives for Surgical Castration of Piglets', *Animals*, 2020; 10(10):1758.

Annen D.N. et al., 'Animal Welfare in Public and Private Standards and On-Farm Compliance', *German Journal of Agricultural Economics*, Humboldt-Universitaet zu Berlin, Department for Agricultural Economics, 2013, vol. 62(03), p. 1-16.

Appleby M.C., 'The European Union Ban on Conventional Cages for Laying Hens: History and Prospects', *Journal of Applied Animal Welfare Science*, 6:2, 2003, pp. 103-121.

Baxter M. R., 'The welfare problems of laying hens in battery cages', *Veterinary Record*, 1994;134(24):614-619.

Berg C., Lundmark Hedman F., 'Compliance with animal welfare regulations; drivers and consequences', *CAB Reviews* 15. No. 025, 2020.

Bestman M. and Bikker-Ouwejan J., 'Predation in organic and free-range egg production', *Animals*,10(2), 2020, p. 177.

Boogaard B.K. et al., 'Social acceptance of dairy farming: The ambivalence between the two Faces of modernity', *J. Agric. Environ. Ethics*, 2011, 24, pp. 259–282.

Broom D.M., 'Animal Welfare and Legislation'. In *Welfare of Production Animals: Assessment and Management of Risks*, ed. Smulders F. and Algers B.O., 2009, p. 339-352. Wageningen: Wageningen Pers.

Brscic M. et al., 'Citizens' Views on Veal Calves' Fattening System in Italy and Animal Welfare', *Agriculturae Conspectus Scientificus,* 78(3): 249-253, 2013.

Chenut R., 'Caractéristiques et avenir du parc bâtiment pondeuses en cages', *TEMA*, 2017, no42.

Chiavegato M.B. et al., 'Pasture-derived greenhouse gas emissions in cow-calf production systems', *J. Anim. Sci.*, 2015 Mar, 93(3):1350-64.

Clark B. et al., 'A Systematic Review of Public Attitudes, Perceptions and Behaviours Towards Production Diseases Associated with Farm Animal Welfare', *J. Agric. Environ. Ethics*, 2016:1–24.

Clark B. et al., 'Consumer attitude towards production diseases in intensive production systems', *PLoS ONE* 2019, 14, e0210432.

Costa J.H.C. et al., 'Invited review: Effects of group housing of dairy calves on behaviour, cognition, performance, and health', *Journal of Dairy Science* 99(4), 2016, pp. 2453-2467.

Cozzi G. et al., 'Main critical factors affecting the welfare of beef cattle and veal calves raised under intensive rearing systems in Italy: a review', *Italian Journal of Animal Science*, 8:sup1, 67-80, 2009.

Cozzi G. et al., 'Dehorning of cattle in the EU Member States: A quantitative survey of the current practices', *Livestock Science*, Elsevier, 179, 2015 pp. 4-11.

D'Eath R.B. et al., 'Why are most EU pigs tail docked? Economic and ethical analysis of four pig housing and management scenarios in the light of EU legislation and animal welfare outcomes', *Animals*,10(4), 2016, pp. 687-699.

De Briyne N. et al., 'Phasing out pig tail docking in the EU – present state, challenges and possibilities', *Porcine Health Management*, 2018, 4:27.

De Jong I. C. and Guémené D., 'Major welfare issues in broiler breeders', *World's Poultry Science Journal*, March 2011, 67(1).

Dixon L.M., 'Slow and steady wins the race: the behaviour and welfare of commercial faster growing broiler breeds compared to a commercial slower growing breed', *PLoS ONE* 15(4): e0231006, 2020.

Dullaghan N., 'Do countries comply with EU animal welfare law?', *Rethink Priorities* Think Tank blog post, 2020.

Eklund A. et al., 'Limited evidence on the effectiveness of interventions to reduce livestock predation in large carnivores', *Nature Scientific Reports*, 7(1): 2097, 2017.

Etienne J., 'The politics of detection in business regulation, Journal of Public Administration Research and Theory', *Journal of Public Administration Research and Theory*, 2015, 25(1), pp. 257-284.

Garreta A. and Orain M.N., 'Les enjeux relatifs aux conditions d'élevage, de transport et d'abattage en matière de bien-être animal', Avis du Conseil Economique, Social et Environmental (CESE), 2019.

Goumon S., Leszkowová I., Šimecková M., Illmann G., 'Sow stress levels and behaviour and piglet performances in farrowing crates and farrowing pens with temporary crating', *J Anim Sci.*, 2018;96(11):4571-4578. doi:10.1093/jas/sky324.

Green T. C. and Mellor D. J., 'Extending ideas about animal welfare assessment to include 'quality of life' and related concepts', *N. Z. Vet.* J., 59, 2011, pp. 263–271.

Guillet M. and Riou Y., 'Appui à la structuration de la filière "œufs"', rapport du *CGAAER* no13112.

Hawkins K., 'Environment and Enforcement: Regulation and the Social Definition of Pollution'. *Oxford: Clarendon Press*, 1984.

Heise H. et al. 'Improved Process Quality through Certification Systems: An Assessment of Selected Animal Welfare Labels', *Int. J. Food Systems Dynamics,* 5 (1), 2014, pp. 23-33.

Hutter B., 'Compliance: Regulation and Environment', *Oxford: Oxford University Press*, 1997.

Hyde B.P. et al., 'A new inventory of ammonia emissions from Irish agriculture', *Atmospheric Environment*, 2003 Jan, 37(1):55-62.

Ingenbleek P. et al., 'The European Market for Animal-Friendly Products in a Societal Context', *Animals*, 3, 2013, pp. 808-829.

Jong I., Berg Ch., Butterworth A. and Estevez I., 'Scientific report updating the EFSA opinions on the welfare of broilers and broiler breeders', EFSA Supporting publications 9(6), 2012, 295E.

Kollenda E. et al., 'Transitioning towards cage-free farming in the EU: Assessment of environmental and socio-economic impacts of increased animal welfare standards', Policy report by the Institute for European Environmental Policy, Brussels & London, 2020.

Kulikowska J., 'Dobrostan kur w różnych systemach utrzymania – obserwacje własne', *Polskie Drobiarstwo*, nr 3/2019, pp. 68-69.

Lipińska I., 'Z prawnej problematyki dobrostanu zwierząt gospodarskich', *Przegląd Prawa Rolnego*, nr 1/2015, s. 63-77.

Lomellini-Dereclenne A.C. et al., 'Implementation of the European legislation to protect farm animals: A case study on French inspections to find solutions to improve compliance', *Anim. Welf* 26:311-321, 2017.

Lundmark F. et al., 'Intentions and Values in Animal Welfare Legislation and Standards', *J Agric Environ Ethics*, 31 July 2014, DOI 10.1007/s1086-014-9512-0.

Lundmark F. et al., 'Private Animal Welfare Standards – Opportunities and Risks', *Animals*, 8, 2018, pp. 1-16.

McAllister L., 'Dimensions of Enforcement Style: Factoring in Regulatory Autonomy and Capacity', *Law and Policy,* 2009, 32(1) DOI: 10.1111/j.1467-9930.2009.00308.x.

Molnar S. and Szollosi L., 'Sustainability and quality aspects of different table egg production systems: a literature review', *Sustainability,* 12(19), 2020, p. 7884.

More S.J. et al., 'Private animal health and welfare standards in quality assurance programmes: a review and proposed framework for critical evaluation', *Veterinary Record*, 24 June 2017.

More S.J., 'European perspectives on efforts to reduce antimicrobial usage in food animal production', *Irish Veterinary Journal*, 73(2), 2020.

Mounaix B., Martineau C., Bertrand G., 'Bilan de la mise en œuvre de la directive européenne "bien-être" de 1997 au niveau de la filière veau de boucherie', *Renc. Rech. Ruminants*, 2007, 14.

Mul M. et al., 'EU-welfare legislation on pigs', Research report 273, Wageningen UR Livestock Research, 2010.

Nalon E. and De Briyne N., 'Efforts to Ban the Routine Tail Docking of Pigs and to Give Pigs Enrichment Materials via EU Law: Where Do We Stand a Quarter of a Century on?', *Animals*, 2019; 9(4):132.

Nalon E. and Stevenson P., 'Protection of dairy cattle in the EU: state of play and directions for policymaking from a legal and animal advocacy perspective', *Animals*, 9(12), 2019, p. 1066.

Nannoni E. et al., 'Effects of increased space allowance on animal welfare, meat and ham quality of heavy pigs slaughtered at 160kg', *PLoSONE* 14(2):e0212417, 2019.

Nunny L. et al., 'A review of seal killing practice in Europe: Implications for animal welfare', *Marine Policy*, 98, 2018, pp. 121-132.

Overstreet K. and Anneberg I., 'Farmers, inspectors and animal welfare: possibilities for change. A Review', *EURCAW Pigs*, accessed 5 May 2021.

Popescu S., Borda C., Diugan E.A., Spinu M., Groza I.S., Sandru C.D., 'Dairy cows welfare quality in tie-stall housing system with or without access to exercise', *Acta Vet. Scand*, 2013; 55:43. doi: 10.1186/1751-0147-55-43.

Pykälä J., 'Mitigating human effects on European biodiversity through traditional animal husbandry', *Conservation Biology*, 2000 Jun, 14(3):705-712.

Rodenburg B. et al., 'End the cage age: Looking for alternatives. Overview of alternatives to cage housing and the impact on animal welfare and other aspects of sustainability', European Parliament, Directorate General for Internal Policies, Policy Department C: Citizens' rights and constitutional affairs, 2020.

Saafkamp H.W. et al. 'Transition from conventional broiler meat to meat from production concepts with higher animal welfare: Experiences from the Netherlands', *Animals*, 9:483, 2019.

Schuck-Paim C. et al., 'Laying hen mortality in different indoor housing systems: a meta-analysis of data from commercial farming in 16 countries', *Nature Scientific Reports,* 11, 2021, p. 3052.

Simonin D. and Gavinelli A., 'The European Union legislation on animal welfare: state of play, enforcement and future activities', *Animal Welfare from Science to Law*, 2019, pp. 59-70.

Sobczak J. and Waligóra T., 'Badania naukowe podstawą postępu i doskonalenia technologii chowu drobiu', cz. II, *Polskie Drobiarstwo*, nr 11/2016, pp. 30.

Spigarelli Ch. et al., 'Welfare Assessment on Pasture: A Review on Animal-Based Measures for Ruminants', *Animals*, 10(4), 2020, p. 609.

Stamp Dawkins M. et al., 'Chicken welfare is influenced more by housing conditions than by stocking density', *Nature* vol 427, 22 January 2004.

Sørensen J.T. and Schrader L., 'Labelling as a Tool for Improving Animal Welfare -The Pig Case', *Agriculture*, 2019; 9(6):123.

Tarantola M. et al., 'Beef cattle welfare assessment: use of resource and animal-based indicators, blood parameters and hair 20b-dihydrocortisol', *Italian Journal of Animal Science,* 2020, Vol. 19, No. 1, p. 341–350.

Te Velde H. et al., 'Dealing with Ambivalence: Farmers' and Consumers' Perceptions of Animal Welfare in Livestock Breeding', *J. Agric. Env. Ethics*, 2002, 15, pp. 203–219.

Thorslund C.A. et al., 'Perceived importance and responsibility for market-driven pig welfare: Literature review', *Meat Sci.*, 2017 Mar;125:37-45. doi: 10.1016/j.meatsci.2016.11.008.

Utnik-Banas K. et al., 'Economic aspects of reducing stocking density in broiler chicken production using the example of farms in Southern Poland', *Ann. Anim. Sci.*, 14(3): 663-671, 2014.

Utnik-Banas K. et al., 'Changes in technical efficiency of the broiler production in Poland, 1994-2013', *British Poultry Science*, 2018 April, 59(2): 245-249.

van de Weerd H. and Ison S., 'Providing Effective Environmental Enrichment to Pigs: How Far Have We Come?', *Animals,* 2019, 9, 254.

van Eeden L.M. et al., 'Carnivore conservation needs evidence based livestock protection', *PLoS Biology*, 16(9): e2005577, 2018.

Vanhersel S.A.J., 'Le bien-être des veaux laitiers: demandes dites sociétales, réglementation, connaissances scientifiques, perception par les éleveurs et leurs pratiques', Thèse pour obtenir le grade de Docteur Vétérinaire, *Ecole national vétérinaire d'Alfort*, 2019.

Veissier I. et al., 'European Approaches to Ensure Good Animal Welfare', *Applied Animal Behaviour Science*, 113, 2008, pp. 279–297.

Veissier I. et al., 'Animal welfare official inspections: farmers and inspectors shared concerns.' *Animal*, vol 15, 1, 2021.

Vogeler C. S., 'Market-Based Governance in Farm Animal Welfare—A Comparative Analysis of Public and Private Policies in Germany and France', *Animals*, Vol. 9, 2019, pp. 267-285.

Yin G., Liu H., Li X., Quan D. and Bao J., 'Effect of farrowing environment on behaviour and physiology of primiparous sows with 35-day lactation', *Intern. J. Appl. Res. Vet. Med*., 14:159–169, 2016.

Wallgren T. et al., 'Impact of amount of straw on pig and pen hygiene in partly slatted flooring systems', *BMC Veterinary Research*,16:337, 2020.

Weary D.M., Ventura B.A. and von Keiserlingk M.A.G., 'Societal views on animal welfare science: understanding why the modified cage may fail and other stories', *Animal*, 10(2), 2016, pp. 309-317.

Xin H. et al., 'Environmental impacts and sustainability of egg production systems', *Poultry Science*, 90(1), 2011, pp. 263-277.

Stakeholders' documents

Eurogroup for Animals and Compassion in World Farming, Report on the Welfare of Dairy Cows, 2015.

Eurogroup for Animals, 'Animal welfare and food labelling: Initiating the transition through high quality consumer information', Report, 28 October 2020.

Eurogroup for Animals, 'The welfare of broiler chickens in the EU: from science to action', Report, November 2020.

Annex

A.1 EU-level interview guide

Exploratory EU-level interviews – Topics guide

Introduction – interviewer to outline the scope (all on-farm AW directives – generic directive from 1998 + directives on calves, broilers, hens, and pigs – EU AW labelling); objectives of the study; clarification on whether this is recorded or not and manner in which the evidence will then be incorporated into the final report to be handled to the European Parliament.

Questions

Implementation of the EU on-farm AW legislation

3 Scientific knowledge has grown since the directives entered into force. Are the directives' objectives and requirements in line with today's science?
4 Are there instances where the wording of the directives is too vague or contains loopholes such that it contributes to poor implementation or to the perpetuation of undesirable practices?
5 Are the five directives (considering also efforts made at EU and MS level to facilitate or encourage implementation) achieving their objectives?
Follow up questions: positives – why/negatives – why?
6 Which are the most persistent non-compliances with the directives in the EU?
7 Would you say that the root causes for those non-compliances are common to some/all countries in the EU?
8 What have been the main factors driving improvements?
9 The broilers directive permits MS to derogate from stocking density requirements and the pigs directive permits derogations from the requirement to keep sows and gilts in groups. Considering the frequency with which these derogations have been applied, which impact have they had on fulfilling the objectives and requirements of these two directives?
10 To which extent have imports of animals or animal-based products from third (non-EU) countries complied with the directives?
11 Have some sectors and/or countries experienced a competitive advantage from complying or not complying with the directives?
12 There has been growing attention paid to the environmental and public health impacts of animal farming. Have the directives been linked to environmental and public health impacts?
13 In your view, which species covered in the general directive from 1998 but not covered by any species-specific directive need additional protection? Why?
14 Are the costs of implementing the directives justified considering their impacts? Could similar impacts have been achieved with fewer costs?
15 Are the directives coherent with the broader EU AW and animal health (AH) policies?
16 Are the directives coherent with other EU policies and overall EU priorities?

- Common agricultural policy (CAP)
- Environmental law
- Habitats directive (protected status for some predators of farmed animals)

17 What is the added-value of the directives vs what the MS could have achieved on their own?

EU AW labelling

18 EU law currently regulates AW labelling to a limited extent. What would be the added value of having EU harmonised mandatory rules in this area? Would there be any disadvantages for farmers/breeders, food businesses, consumers or competent authorities?

19 Should AW labelling requirements be set at EU level, would they have to be general (i.e. for all species) or rather be species-specific?

20 Would there be any animal species/animal-based products for which the setting of AW labelling rules at EU level would be more important than for others?

21 Which aspects should EU AW labelling requirements cover in particular?

- AW at farm level
- AW during transport
- AW slaughter
- Other(s) (please specify)

22 If the EU was to establish AW labelling requirements, would those requirements likely cover AW only or be integrated with other dimensions (e.g. sustainability)?

23 Are there national AW labels you are aware of that you think could be a useful model for an EU-wide AW label?

A.2 List of EU-level interviews performed

EU stakeholder/Expert	Relevance for the research objectives
European Commission (DG SANTE Unit G5)	Responsible for the development of EU policy and legislation on AW
European Commission (DG SANTE F2)	Responsible for the performance of EU audits on national official control systems in the agri-food chain
European Court of Auditors	Responsible for auditing EU finances/Author of special report on AW in the EU in 2018
Committee of Professional Agricultural Organisations and General Confederation of Agricultural Cooperatives (COPA-COGECA)	European professional organisation representing farmers
European Rural Poultry Producers	European professional organisation representing poultry farmers
European Forum of Farm Animal Breeders	European professional organisation representing animal breeders
Federation of Veterinarians of Europe	European professional organisation representing the veterinary profession
European Livestock and Meat Trades Union (UECBV)	European professional organisation representing the meat processing industry
Association of Poultry Processors and Poultry Trade in the EU (AVEC)	European professional organisation representing poultry processors and traders
European Egg processors Association	European professional organisation representing egg processors
European Dairy Association	European professional organisation representing dairy processors
Eurocommerce	European professional organisation representing food retailers
Eurogroup for Animals	AW NGO (representing also Vier Pfoten/Four Paws)
Compassion in World Farming	AW NGO
Prof. Jaarko Niemi	Academic expert – Member of the AW labelling Working Group of the EU Platform on AW

A.3 National interview and desk research guide

National interviews – Topics guide

Scope of national research

MS	Directive 98/58 – general directive	Pigs directive	Hens directive	Broilers directive	Calves directive
DENMARK					
FRANCE	Rabbits, Cows, Sheep				
GERMANY	Rabbits, Cows				
GREECE	Sheep				
IRELAND	Cows				
ITALY	Rabbits, Cows, Sheep				
NETHERLANDS					
POLAND					
PORTUGAL	Rabbits				
ROMANIA	Sheep				
SPAIN	Rabbits, Cows, Sheep				

For all stakeholders

1 How familiar are you with the EU legislation on animal welfare (AW)?
2 Are there requirements in the directives that are loopholes, or too vaguely worded? If yes, which ones? What impact does such wording have in practice? How should these requirements be worded differently?
3 Have any guidelines on AW (whether published by national authorities or the EU) contributed to addressing any gaps, uncertainties or outdated requirements in the directives? Please explain.

N.B. *The question below applies **only** to broilers and pigs and therefore only to ES, FR, DE, DK, NL and PL.*

4 What are your views on the derogations to certain requirements that are included in the [broilers/pigs] directives?
5 Which are the most prevalent and persistent non-compliances with the directive(s) in your Member State (MS)?
6 What would you say are the main reasons for the most prevalent and persistent non-compliances with on-farm AW legislation in your MS?
7 Do these non-compliances constitute a competitive advantage for the farmers/sector/MS?
8 What are the main factors that have led to compliance improvements in your MS?
9 What elements of the directive work well?
10 What elements of the directive do not work well?
11 What have been the impacts of the directive on the sector? (sector in scope depends on interviewee and country as indicated in the table at the beginning of this guide)

N.B. *The two questions below apply **only** to FR, DE, ES, IE, IT, EL, PT and RO.*

12 Thinking about cows/rabbits/sheep in your MS, what AW issues are there that could be addressed by new, specific legal protection at EU level?
13 What are at present the impacts of not having such protections in place in your MS?
14 How has the common agricultural policy (CAP) contributed (positively or negatively) to implementing the directives in your MS?

N.B. *The question below* ***does not*** *apply to DE, IT and DK, which have developed a government-owned AW labelling system.*

15 If the EU did not introduce an EU level AW label, is it likely that one such label would be introduced by public authorities in your MS instead?
16 What would be the added benefit of an EU-wide mandatory label?
17 If the EU introduced a mandatory EU level AW label, how would it be enforced in your MS? What challenges would it bring? What opportunities would it bring?
18 Is there any AW label on the EU market, which could be a model for an EU-wide AW label? If yes, why?

For NCAs only

19 Have official controls in your MS revealed anything on on-farm AW practices in third (non-EU) countries and how those compare to AW practices in your MS?
20 Thinking about the costs to your MS of implementing the directives, would you say that those have been proportionate to the impacts achieved?
21 Could the same impacts have been achieved with fewer costs? How?

Desk research

Types of data/sources to collect:

- **National data on compliance with animal welfare obligations** as set out in the directives in scope. This data is needed to help answer the question: *Which practice(s) involve(s) the highest number of persistent non-compliance cases under the directives in each of the examined Member States?* The data may be in the public domain, and if it is not it will have to be requested from the NCA, in which case we are interested **at least** in the most recent data and **ideally** in data for previous years up to 1999. Make sure to formulate the request clearly so that the information you get is specifically about **on-farm** AW. Aggregate data on **all non-compliances** with animal welfare legislation will not be useable for our needs.
- **National data on derogations to the directives'** requirements that have been granted by national authorities. These cover **only** broilers and pigs and are to be sought only in ES, FR, DE, DK, NL and PL.
- **Consumer studies on animal welfare** focusing on the MS – any studies that would have explored consumers' animal welfare concerns (has to be about on-farm welfare, including breeding; excludes transport, slaughter, domestic animals, zoo animals, wild animals); can be polls, reports, or academic articles.
- **Any national studies that would have explored the impact of the directives.** We are looking for data on animal welfare (knowing how certain core practices such as grouping of sows, tail docking, caging, etc. have evolved will be sufficient here), economic impacts (impacts on costs, revenue, market opportunities), environmental impacts (impacts on water use, emissions, etc.), public health (food safety, antimicrobial resistance).
- For FR, DE, EL, IE, IT, PT, RO and ES (check the scope table to confirm the species): **any national studies that would have explored the impact of the lack of a species-specific directive** for cows (dairy and beef), sheep and rabbits. We are looking for data on animal welfare issues for those species (of particular interest are issues associated with housing, breeding, diseases), economic, environmental and public health impacts (impacts of the animal welfare issues identified; impact of absence of specific rules – these are **opportunity costs).**

A.4 List of national interviews performed

Stakeholder	Type of organisation	Link	Remarks
DENMARK | Animal species: Pigs			
Foedevarestyrelsen (DVFA)	Central Competent Authority	https://www.foedevarestyrelsen.dk/english/Animal/AnimalWelfare/Legislation/Pages/default.aspx	Responsible for AW legislation in Denmark; DVFA also spoke for the Central Competent Authorities Landbrugsstyrelsen and Det Dyreetiske Rad.
Landbrug & Fødevarer (LF)	Farmers' organisation	www.lf.dk	COPA member
Dyrenes Beskyttelse	NGO	https://www.dyrenesbeskyttelse.dk/	Denmark's largest AW NGO
SEGES Svineproduktion	Research centre	https://pigresearchcentre.dk/	Part ofLF
Prof. Peter Sandoe	Academic expert – University of Copenhagen, Section for Consumption, Bioethics and Governance	https://ifro.ku.dk/english/staff/?pure=en%2Fpersons%2Fpeter-sandoee(1e8ff72f-573c-4453-9c10-e6e09658b1ed).html	Head of Section, Professor, Animal Welfare and Disease Control
Dyreværns Organisationernes Samarbejds Organisation -DOSO/Dyrenes Venner	NGO	https://www.doso.dk/	One of the initiators of the government AW label
Danske Dyrlaegeforening (DDL)	Veterinary association	https://www.ddd.dk/	Involved in AW activities, veterinary controls at farms, etc.
FRANCE | Animal species: Rabbit, Sheep, Cows, Laying hens, Chicken for meat production, Calves, Pigs			
Ministère de l'agriculture et de l'alimentation	Central Competent Authority	https://agriculture.gouv.fr/	In charge of official controls
Centre national de référence pour le bien-être animal	National reference centre for AW	https://www.cnr-bea.fr/	Risk assessor
Syndicat national des inspecteurs en santé publique vétérinaire	Professional organisation representing official veterinarians	https://snispv.org/	Professional organisation of official veterinarians
Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (ANSES)	Central Competent Authority	https://www.anses.fr/	Risk assessor, has published opinions on AW topics
L214	NGO	https://www.l214.com/	AW NGO focused on farm animals
Oeuvre d'Assistance aux Bêtes d'Abattoirs (OABA)	NGO	https://oaba.fr/	AW NGO focused on farm animals
CIWF France	NGO	https://www.ciwf.fr	AW NGO
Confédération Française des Aviculteurs	Farmers' organisation	N/A	Representing laying hen farmers
Fédération des Industries Avicoles (FIA) with Interprofession française de la volaille de chair (ANVOL)	Producers' organisation, poultry	www.fia.fr www.interpro-anvol.fr	Representing broilers and poultry meat producers

Stakeholder	Type of organisation	Link	Remarks
Institut de l'élèvage (IDELE)[217]	Technical institute, farmed mammals	www.idele.fr	Independent R&D organisation recognised by NCAs as technical centre for agriculture
Federation Nationale Porcine (FNP)	Producers' organisation	www.fnsea.fr	Member of Fédération Nationale des Syndicats d'Exploitants Agricoles (FNSEA)
Institut Technique de l'Aviculture (ITAVI)218	Technical institute chicken and rabbits	https://www.itavi.asso.fr/	Applied research in the AW area
Comité Interprofessionnel du Lapin (CLIPP)	Rabbit meat interbranch organisation	http://www.lapin.fr	Organisation representing the rabbit meat production chain
GERMANY | Animal species: Rabbit, Sheep, Cows, Laying hens, Chicken for meat production, Calves, Pigs			
Bundesministerium für Ernährung und landwirtschaft (BMEL)	Central Competent Authority	www.bmel.de	In charge of official controls; BMEL also spoke for the Central Competent Authority Bundesamt für Verbraucherschutz und Lebensmittelsicherheit (BVL)
Tierschutz Bund	NGO	www.tierschutzbund.de	AW NGO
Deutsch Bauern Verband (DBV)	Farmers' organisation	https://www.bauernverband.de/english	Represents pig farmers
Vier Pfoten/Four Paws – Stiftung für Tierschutz	NGO	www.vier-pfoten.de	AW NGO
Verbraucherzentrale Bundesverband (VZBV)	NGO	https://en.vzbv.de/	BEUC member active on AW labelling
Interessengemeinschaft der Schweinehalter Deutschlands e.V. (ISN)	Farmers' organisation	www.isn.de	Represents the interests of the market-oriented and specialised pig farmers
THÜNEN-INSTITUT	National Institute for Agricultural Business administration	www.thuenen.de	Institute with strong role in advisory to German government
GPP Zentralverband der Deutschen Geflügelwirtschaft e. V.	Farmers' organisation	www.zdg-online.de	Represents poultry farmers
Bundesverband Deutscher Milchviehhalter e.V.	Farmers' organisation	www.bdm-verband.de	Represents dairy farmers
Tönnies Fleisch	Meat processor operating pigs' slaughterhouses	https://www.toennies.de/en/home/	Largest processor in the pork meat segment at country level

Stakeholder	Type of organisation	Link	Remarks
GREECE | Animal species: Sheep			
Υπουργείο Αγροτικής Ανάπτυξης & Τροφίμων, Διεύθυνση Προστασίας των Ζώων, Φαρμάκων & Κτηνιατρικών Εφαρμογών	Central Competent Authority	http://www.minagric.gr/index.php/el/	Competences for AW in the production chain
Οργανισμός Πληρωμών και Ελέγχου Κοινοτικών Ενισχύσεων Προσανατολισμού και Εγγυήσεων (Ο.Π.Ε.Κ.Ε.Π.Ε.) Δ/νση Τεχνικών Ελέγχων, Τμήμα Πολλαπλής Συμμόρφωσης	Central Competent Authority	https://www.opekepe.gr/el/	Competences for AW in the context of the CAP Pillar I cross-compliance obligations (enforcement public body)
ΕΛΛΗΝΙΚΟΣ ΓΕΩΡΓΙΚΟΣ ΟΡΓΑΝΙΣΜΟΣ «ΔΗΜΗΤΡΑ» (ΕΛΓΟ-Δήμητρα), Ινστιτούτο Επιστήμης Ζωικής Παραγωγής	Central Competent Authority	https://www.elgo.gr/, https://www.rias.gr/	Research Institute of Animal Science, Hellenic Agricultural Organisation – Demeter
Υπουργείο Αγροτικής Ανάπτυξης & Τροφίμων, Ειδική Υπηρεσία Εφαρμογής (ΕΥΕ) ΠΑΑ, Μονάδα Επενδύσεων στις γεωργικές εκμεταλλεύσεις	Central Competent Authority	http://www.agrotikianaptixi.gr/el	Competences for AW in the context of the Rural Development Program 2014-2020, Sub-measure 4.1.1. (investments for the modernisation of sheep farms)
Olga Kikou, Compassion in World Farming	NGO	https://www.ciwf.org.uk/	European Affairs Manager at AW NGO – Greek expert
Σύνδεσμος Ελληνικής Κτηνοτροφίας (ΣΕΚ)	Farmers' organisation	https://ead.gr/item/sek/	Represents sheep farmers at national level
Πανελλήνια Ένωση Κτηνοτρόφων (ΠΕΚ)	Farmers' organisation	https://ead.gr/item/pek/	Represents sheep farmers at national level
Evangelia N. Sossidou, Ινστιτούτο Κτηνιατρικών Ερευνών, Ελληνικός Γεωργικός Οργανισμός ΔΗΜΗΤΡΑ (ΕΛΓΟ-Δήμητρα)	AW independent expert	https://www.elgo.gr/, http://www.vri.gr/	Post-PhD in AW/EFSA Expert: Panel "Animal Health and Welfare" Hellenic Agricultural Organisation-DEMETER, Veterinary Research Institute
IRELAND | Animal species: Cows, calves			
Department of Agriculture, Food and the Marine (DAFM)	Central Competent Authority	https://www.agriculture.gov.ie/animalhealthwelfare/	Responsible for AW legislation in Ireland
Agriculture and Food Development Authority (TEAGASC)	Central Competent Authority	https://www.teagasc.ie/	National agency providing research and advisory services on AW

Stakeholder	Type of organisation	Link	Remarks
Irish Farmer's Association (IFA)	Farmers' organisation	https://www.ifa.ie/	COPA member
Veterinary Ireland	Representative body of veterinarians	http://www.veterinaryireland.ie/	Professional organisation of vets performing official controls on behalf of DAFM
Irish Society for Prevention of Cruelty to Animals (ISPCA)	NGO	https://www.ispca.ie/	Eurogroup for Animals member
Prof. Alison Hanlon	Academic expert	https://people.ucd.ie/alison.hanlon	Associate Professor specialising in AW and ethics at University College of Dublin – Expertise in AW of cattle
ITALY | Animal species: Rabbit, Sheep, Cows, Laying hens, Calves			
Ministero della salute	Central Competent Authority	http://www.salute.gov.it/portale/home.html	Competences for AW in the production chain
Ministero delle politiche agricoli, alimentari e forestali (MIPAAF)	Central Competent Authority	https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/202	Competences for AW in the context of the CAP and food labelling
Associazione Nazionale Cunicultura Italiana (ANCI)	Rabbit meat trade association	https://www.anci-aia.it/?lang=en	National trade association representing rabbit breeders as well as genetic research centre
Confederazione Italiana Agricoltori (CIA)	Farmers' organisation	http://www.cia.it	COPA member
Coldiretti	Farmers' organisation	http://www.confagricoltura.it	COPA member
Confagricoltura	Farmers' organisation	http://www.coldiretti.it	COPA member
Legambiente	NGO	https://www.legambiente.it/	Environmental NGO covering also AW often partnering with Compassion in World Farming Italia
Compassion in World Farming Italia	NGO	https://www.ciwf.it/	Italian member of the international AW NGO Compassion in World Farming
Prof. Elisabetta Canali	Academic expert	https://www.unimi.it/en/ugov/person/elisabetta-canali	Professor of Farming System and Animal Welfare University of Milan (Statale)- Member of the EU AW Platform – Expertise in cattle, including calves
NETHERLANDS | Animal species: Chicken for meat production, pigs			
Koninklijke Nederlandse Maatschappij voor Diergeneeskunde (KNMVD)	Royal Veterinary Association of the Netherlands	www.knmvd.nl	Professional organisation representing veterinary professionals

Stakeholder	Type of organisation	Link	Remarks
de Dierenbescherming	NGO	www.dierenbescherming.nl	AW NGO in charge of standard-setting for the label Beter Leven keurmark
World Animal Protection	NGO	www.worldanimalprotection.nl	Dutch member of the international AW NGO World Animal Protection
Compassion in World Farming Nederland	NGO	www.ciwf.nl	Dutch member of the international AW NGO Compassion in World Farming
Producenten Organisatie Varkenshouderij (POV)	Farmers' organisation	www.pov.nl	Dutch organisation for pig producers; POV also spoke for the certification body LTO Nederland.
KIWA Verin	Farmers' organisation	www.kiwa.com	Dutch certification body
Nederlandse vakbond pluimveehouders (NVP)	Farmers' organisation	www.nvpluimveehouders.nl	Dutch poultry union
POLAND | Animal species: Laying hens, Chicken for meat production			
Ministerstwo Rolnictwa I Rozwoju Wsi - Departament Bezpieczeństwa Hodowli i Produkcji Zwierzęcej	Central Competent Authority	https://www.gov.pl/web/rolnictwo	Responsible for AW legislation in Poland
Główny Inspektorat Weterynarii (GIW)	Central Competent Authority	https://www.wetgiw.gov.pl/publikacje/ochrona-zwierzat-dobrostan	Responsible for AW enforcement in Poland
Parlamentarny Zespół ds. Ochrony Zwierząt, Praw Właścicieli Zwierząt oraz Rozwoju Polskiego Rolnictwa	Polish Parliament Member	https://www.sejm.gov.pl/Sejm9.nsf/agent.xsp?symbol=ZESPOL&Zesp=611	Member of Polish Parliament – President of the Parliamentary Group on Animal Protection, Animal Owners' Rights and Development of Polish Agriculture
Krajowa Rada Drobiarstwa – Izba Gospodarcza	Farmer's organisation	https://krd-ig.com.pl	National Poultry Council – Association of poultry producers
Polski Oddział Światowego Stowarzyszenia Wiedzy Drobiarskiej (PB WPSA)	Farmers' organisation – gathering also top national academic experts on poultry and many market representatives	http://www.wpsa.pl	Polish Branch of the World Poultry Knowledge Association
Prof. Piotr Szeleszczuk Szkoła Główna Gospodarstwa Wiejskiego w Warszawie	Academic expert	http://wmw.sggw.pl/instytut/struktura-wydzialu/katedra-patologii-i-diagnostyki-weterynaryjnej/zaklad-chorob-ptakow/	Academic expert whose team runs practical and comprehensive research concerning broilers welfare

Stakeholder	Type of organisation	Link	Remarks
Otwarte Klatki	NGO	https://www.otwarteklatki.pl	AW NGOs with focus on broilers and laying hens
Compassion in World Farming Polska (CIWF Polska)	NGO	https://www.ciwf.pl	Polish member of the international AW NGO Compassion in World Farming
PORTUGAL | Animal species: Rabbit			
Direção-Geral da Alimentação e Veterinária (DGAV)	Central Competent Authority	http://www.dgv.min-agricultura.pt/	Competences for AW in the production chain; DGAV also spoke for the Central Competent Authority Instituto de Financiamento da Agricultura e Pescas (IFAP).
Autoridade de Segurança Alimentar e Económica (ASAE)	Central Competent Authority	https://www.asae.gov.pt/	Competences for labelling enforcement
Associação Portuguesa Cunicultura (ASPOC)	Portuguese Cuniculture Association	http://aspoc.pt/wp/	Professional organisation representing the national rabbit trade sector
Confederação dos Agricultores de Portugal (CAP)	Farmers' organisation	https://www.cap.pt/	COPA member
Confagri	Farmers' organisations	https://www.confagri.pt/	COGECA member
ROMANIA | Animal species: Sheep			
Autoritatea Națională Sanitară Veterinară şi pentru Siguranța Alimentelor (A.N.S.V.S.A.)	Central Competent Authority	http://www.ansvsa.ro/	Competences on AW and control thereof; A.N.S.V-S.A. also spoke for the Central Competent Authority Ministerul Agriculturii și Dezvoltării Rurale (MADR).
Agenția Națională pentru Zootehnie (A.N.Z.)	Central Competent Authority	http://www.anarz.eu/page?slug=ovine#	Competences on AW and zootechnics
Federatia Oierilor de Munte din Romania	Farmers' organisation	N/A	Affiliated to Euromontana
Romovis Sibiu/Federatia Nationala a Crescatorilor de Ovine Romovis-Sibiu	Farmers' organisation	N/A	Member of International Committee for Animal Recording (ICAR)
Asociatia Crescatorilor de Ovine si Ecvine din Judetul Brasov	Farmers' organisation	N/A	Member of Federația Oierilor de Munte din România
Asociația Profesională a Ciobanilor (A.P.C.)	Farmers' organisation	N/A	N/A

Stakeholder	Type of organisation	Link	Remarks
SPAIN | Animal species: **Rabbit, Sheep, Cows, Laying hens, Chicken for meat production, Calves, Pigs**			
Ministerio de Agricultura, Pesca y Alimentación (MAPA)	Central Competent Authority	https://www.mapa.gob.es/	Competences for AW in the production chain
Asociacion Agraria – Jovenes Agricultores (ASAJA)	Farmers' organisation	https://www.asaja.com/	COPA member
Asociación Española de Productores de Vacuno de Carne (ASOPROVAC)	Professional organisation of the bovine meat sector	https://www.asoprovac.com/	Includes farmers
Asociación Nacional de Productores de Ganado Porcino (ANPROGAPOR)	Professional organisation of the pig sector	http://www.anprogapor.es/	Includes farmers
Interprofesional Agroalimentaria del Ovino y Caprino (INTEROVIC)	Professional organisation of the sheep and goat sector	https://www.interovic.es/	Includes farmers
Asociación Nacional para la Defensa de los Animales (ANDA)	NGO	http://andacentral.org/	Eurogroup for Animals member
Fundación para el Asesoramiento y Acción en Defensa de los Animales (FAADA)	NGO	http://faada.org/	Eurogroup for Animals member
Antonio Velarde Calvo	Academic expert	https://ebvs.eu/colleges/ECAWBM/members/dr-antonio-velarde-calvo	Member of the EU Platform on AW

A.5 Preliminary mapping of labelling systems covering AW

Name of the labelling system	MS	Scope	Species	Stages of the life of the animal covered	Notes & Comments
COOP's velfærdskoncepter	DK	AW	Laying hens, broilers, cattle (dairy) and pigs	On farm, slaughter	Multi-tier system[219] (4 levels symbolised by hearts) owned by the Danish retailer Coop for its own-brand line. Farm certification entrusted to the certification body Baltic Control Certification. Coop is direct member of EURO COOP.
Beter Leven keurmerk	NL	AW	Pigs, broilers, laying hens, cattle (meat and dairy), calves, rabbits, turkeys	On farm, transport and slaughter (depending on the species)	AW NGO member of Eurogroup for Animals. Multi-tier system.
IKBVarken	NL	Mixed	Pigs	On farm, transport and slaughter	Private certification system of the Dutch pig sector. Encompasses AW together with other "quality" aspects (notably food safety and animal health).
Welfair	ES	AW	Pigs, broilers, laying hens, turkeys, cattle, rabbits, sheep and goat	On farm, transport and slaughter (depending on the species)	Certification and labelling system developed by the Institut de Recerca i Tecnologia Agroalimentàries (IRTA) in cooperation with Instituto Vasco de Investigación y Desarrollo Agrario (Neiker) based on EU-funded research.
Tierschutz-kontrolliert	AT, DE	AW	Pigs, cattle (meat and dairy), laying hens, ducks, broilers, turkeys	On farm, transport and slaughter (depending on the species)	Multi-tier labelling system by AW NGO Vier Pfoten/Four Paws.
National AW label	DE	AW	Pigs	On farm, transport and slaughter	National AW label governed by AW Labelling Act (Sept 2019). Multi-tier and voluntary system. Specific criteria for pigs welfare not yet in place/applicable.
Tierschutzlabel 'Für Mehr Tierschutz'	DE	AW	Pigs, broilers, laying hens, cattle (meat and dairy)	On farm, transport and slaughter (depending on the species)	Multi-tier labelling system by the German AW NGO.
Neuland	DE	AW	Pigs, cattle, broilers, turkeys, sheep (lamb), geese	On farm, transport and slaughter	Agricultural trade association managing an AW label and performing audits on food operators adhering to their system, including farmers, slaughterhouses and butchers.
Initiative Tierwohl	DE	AW	Pigs, broilers and turkeys	On farm	Labelling system established in 2015 with support of two major retailers[220]
Carnes Valles de Esla	ES	AW	Cattle (meat)	*Cannot be determined precisely based on desk research*	
KRAV	SE	Mixed	Pigs, broilers, laying hens, cattle (meat and dairy)	On farm, transport and slaughter (depending on the species)	Long-standing eco-label currently managed by the industry certifying body KRAV covering organic production, AW, biodiversity, sustainability and labour rights.
Svensk Fågel – Djurskyddsprogram met	SE	Mixed	Broilers	On farm, transport and slaughter	Specific programme on welfare set up by the national production association.

Name of the labelling system	MS	Scope	Species	Stages of the life of the animal covered	Notes & Comments
Svenska Ägg Omsorgsprogram	SE	Mixed	Laying hens	On farm	Specific programme on welfare set up by national egg producer association. Besides AW focus on animal health and food safety.
Svenskt Sigill	SE	Mixed	Cattle (meat and dairy), lambs, broilers, pigs	On farm	Swedish ecolabel for food and flowers. Focus on sustainability and environment, covering also AW and food safety.
Etiquette Bien-Être Animal	FR	AW	Broilers	On farm, transport and slaughter	Initiative launched by private actors, including AW NGOs and national retailers. Multi-tier system.
Haltungsform	DE	AW	Broilers, pigs, cattle (meat and dairy), turkeys	On farm	Labelling system promoted by a group of German retailers (all Eurocommerce members). It is a scoring system building on other labelling systems (e.g. including Bio, Neuland and Aktion Tierwohl). Multi-tier system.
Bedre Dyrevelfaerd	DK	AW	Pigs, broilers, cattle (meat and dairy)	On farm, transport and slaughter	Public AW labelling system managed by the Danish authorities. Multi-tier system.
Bienestar Animal avalado por ANDA	ES	AW	Laying hens	On farm	Labelling system managed by AW NGO member of Eurogroup of Animals
Anbefalet af Dyrenes Beskyttelse	DK	AW	Pigs, broilers, laying hens, cattle (meat and dairy), calves, buffaloes, lamb, ducks and geese	On farm, transport and slaughter (depending on the species)	Labelling system managed by the NGO Danish Animal Welfare Society
Label Rouge	FR	Mixed	Lamb, laying hens, broilers, pigs, cattle (meat), calves, pigs, ducks and geese	On farm, transport and slaughter (depending on the species)	Labelling system regulated under French law since 1965
Compromiso Bienestar Animal	ES	AW	Pigs, broilers, rabbits, calves, sheep and goat	*Cannot be determined precisely based on desk research*	Recently established labelling system by a group of six national interbranch organisations
Mieux pour tous/ Beter voor iedereen	BE	Mixed	Pigs, laying hens	*Cannot be determined precisely based on desk research*	
La Note globale	FR	Mixed	Pigs, broilers	*Cannot be determined precisely based on desk research*	Overall scoring system based on existing labelling information requirements (e.g. organics, Nutriscore, AW etc.)

A.6 Online survey on food labelling systems covering animal welfare in the EU

Online survey on food labelling systems covering animal welfare in the EU

Dear Sir / Madam,

In December 2020, the European Parliamentary Research Service (DG EPRS of the European Parliament) has commissioned ÖIR (http://oir.at/) and Arcadia International E.E.I.G (http://www.arcadia-international.net/) to produce a research paper on the implementation of the EU on-farm animal welfare legislation and animal welfare labelling in the EU. As regards animal welfare labelling, the study will inform the European Parliament on an EU mandated animal welfare label for animal-based food products.

To inform this research, the study team is collecting evidence on animal welfare labelling systems that currently exist in the EU. You are invited to contribute evidence to this exercise by responding to the below survey.

The survey is addressed to public or private bodies who own and/or manage a labelling system covering animal welfare. We would be grateful if you wish to respond to as many questions as possible. By responding to the survey, you will contribute towards a better understanding of the scope and the specific characteristics of the animal welfare-related labelling systems that exist in the EU.

The online survey will run from 1st February to 3rd March 2021.

The results of the survey will form part of the final research paper, which will be published later this year.
For any query related to the survey or the research project, please feel free to reach out to the Project Manager Dr. Francesco Montanari (f rancesco.montanari@arcadia-international.net).

* Required

1. Email address *

Section A – Identification of the respondent

2. QA1. Name of the entity / organisation owner and/or manager of a labelling system covering animal welfare

3. QA2. Type of the owner and/or manager of a labelling system covering animal welfare: *

Mark only one oval.

- ◯ National competent authority
- ◯ Animal welfare NGO
- ◯ Consumer NGO
- ◯ Certification body
- ◯ Farmers' organisation
- ◯ Producer organisation
- ◯ Interbranch organisation
- ◯ Individual business
- ◯ Group of private operators

4. QA2 bis. If you are an individual business, are you?

Mark only one oval.

- ◯ Processor
- ◯ Manufacturer
- ◯ Retailer
- ◯ Other: _____

5. QA3. Address

_____

6. QA4. Member State: *

_____

7. QA5. Phone:

8. QA6. Email:

9. QA7. Website:

10. QA8. Contact person(s): *

11. QA9. In case you are answering this survey on behalf of other entities / organisations with whom you manage the labelling system, please state which ones:

Section B - General details of the labelling system

12. QB1. Name of the labelling system:

13. QB2. Website (if different from that of the respondent under Section A):

14. QB3. Date of establishment (year):

Example: January 7, 2019

15. QB4. If your labelling system is currently under development, please indicate the expected year of implementation:

Example: January 7, 2019

Section C – Main characteristics of the labelling system

16. QC1. At whose initiative was the label created?

Mark only one oval.

- ◯ Private sector
- ◯ Public sector
- ◯ Public-private partnership

17. QC2. Who was/were the primary drafters of the standard underpinning the label?

18. QC3. Was there a consultation on the draft standard underpinning the label before finalisation?

Mark only one oval.

- ◯ Yes
- ◯ No *Skip to question 20*
- ◯ Don't know

19. QC3bis. Please specify who was consulted on the labelling system before finalisation

Check all that apply.

- ☐ Industry
- ☐ Public authorities
- ☐ Academics
- ☐ NGOs
- Other: ☐ _____

Section C – Main characteristics of the labelling system

20. QC4. What is the regulatory status of the label?

Mark only one oval.

- ◯ Mandatory
- ◯ Voluntary

21. QC5a. What is the geographical coverage of the label?

Mark only one oval.

- ◯ International
- ◯ European
- ◯ National
- ◯ Regional
- ◯ Local
- ◯ Other: _____

22. QC5b. If the coverage is national, please indicate which MS(s) are concerned:

_____

23. QC6. What is the scope of the label?

Mark only one oval.

- ◯ Animal welfare only
- ◯ Animal welfare and other aspects

24. QC7. In case you responded 'Animal welfare and other aspects' to QC6 on the scope of the label, please indicate which aspects are covered by the label.

Check all that apply.

- ☐ Sustainability
- ☐ Environmental impact
- ☐ Quality
- ☐ Organic
- ☐ Fair trade
- ☐ Local sourcing
- ☐ Traceability
- ☐ Authenticity
- ☐ Origin
- ☐ Nutrition
- ☐ Health
- ☐ Food safety

Other: ☐ _____

25. QC8a. Which species does the label currently apply to? For each relevant species please indicate the production phase(s) covered by the label, i.e., on-farm, during transport, at slaughter or other(s)

Check all that apply.

	Animal welfare on farm	Animal welfare during transport	Animal welfare at slaughter	Other(s) (please specify):
Laying hens:	☐	☐	☐	☐
Broilers	☐	☐	☐	☐
Turkeys	☐	☐	☐	☐
Calves	☐	☐	☐	☐
Dairy cows	☐	☐	☐	☐
Beef	☐	☐	☐	☐
Pigs	☐	☐	☐	☐
Sheep	☐	☐	☐	☐
Lamb	☐	☐	☐	☐
Goat	☐	☐	☐	☐
Rabbit	☐	☐	☐	☐
Ducks	☐	☐	☐	☐
Geese	☐	☐	☐	☐
Fish	☐	☐	☐	☐
Other	☐	☐	☐	☐

26. QC8b. Other(s) (please specify):

27. QC9. Which categories of food products does the label currently apply to?

Check all that apply.

- [ ] Fresh meat
- [ ] Frozen meat
- [ ] Processed meat
- [ ] Fresh milk
- [ ] Powdered milk
- [ ] Butter
- [ ] Cream
- [ ] Cheese
- [ ] Yoghurt
- [ ] Eggs
- [ ] Egg-products

Other: [ ] _____

28. QC10. Do you expect the label to incorporate additional features in the near future?

Mark only one oval.

- ◯ Yes
- ◯ No *Skip to question 34*
- ◯ Don't know *Skip to question 34*
- ◯ Other: _____

29. QC10a. In case you responded yes, please specify other species you plan to add to your label:

_____

_____

_____

_____

30. QC10b. In case you responded yes, please specify other food product categories you plan to add to your label:

31. QC10c. In case you responded yes, please specify other regions/countries you plan to add to your label:

32. QC10d. In case you responded yes, please specify other dimensions of animal welfare you plan to add to your label:

33. QC10e. In case you responded yes, please specify other dimensions besides animal welfare (e.g. sustainability, quality, authenticity, traceability, food safety, origin, organic etc.) you plan to add to your label:

Section D – Functioning of the labelling system

34. QD1a. Are the animal welfare requirements in your standard based on international codes or standards? (if yes, please specify)

35. QD1b. Are the animal welfare requirements in your standard based on EU legislation or guidance? (if yes, please specify):

36. QD1c. Are the animal welfare requirements in your standard based on national legislation or guidance? (if yes, please specify):

37. QD1d. Are the animal welfare requirements in your standard based on private rules? (if yes, please specify):

38. QD1e.Are the animal welfare requirements in your standard based on other rules? Please specify.

39. QD2. To which extent are the requirements set in the label's standard (e.g. stocking density, duration of transports, methods of stunning etc.) based on scientific evidence?

40. QD3. Does the label's standard incorporate rules for reviewing and updating the standard? if yes, please explain.

41. QD4. If possible please provide a link to the label's standard:

42. QD5a. How is the label designed?

Mark only one oval.

- ◯ Single tier/One level
- ◯ Multi-tier/Multiple levels
- ◯ Other: _____

43. QD5b. Please, explain why this approach was adopted

_____

_____

_____

_____

_____

44. QD6. How many tiers / levels does the label have? Please explain briefly how they are defined.

_____

_____

_____

_____

_____

45. QD7. Who audits food businesses against the standard underpinning the label?

Mark only one oval.

- ◯ The label's own auditors
- ◯ Independent auditors
- ◯ The food business using the label (self-auditing)
- ◯ There are no audits.

46. QD8. How often do audits of the food businesses affiliated to the labelling system take place?

47. QD9. Are audits announced (i.e. are food businesses informed in advance that they will soon be audited)?

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ Don't know

48. QD10. In case audits are announced, how long in advance of the visit is the food business usually informed?

49. QD11. Does the label distinguish between different levels of non-compliances with the standard (e.g., minor and major)? Please explain

50. QD12. How are non-compliances responded to? Please explain

51. QD13. Do audit frequencies vary as a result of the level of compliance (e.g. high or low) with the standard? Please explain

Section E – Market penetration and impacts of the labelling system

52. QE1a. Please indicate how many farmers are currently affiliated to your labelling system:

53. QE1b. Please indicate how many processors are currently affiliated to your labelling system:

54. QE1c. Please indicate how many manufacturers are currently affiliated to your labelling system:

55. QE1d. Please indicate how many retailers are currently affiliated to your labelling system:

56. QE1e. Please indicate how many food businesses, in total, are currently affiliated to your labelling system:

57. QE2. How many products are currently certified against the animal welfare standard underpinning the label?

58. QE3. What have been the impacts of the label on food businesses using it?

59. QE4. What have been the impacts of the label on consumer confidence towards food businesses using it?

60. QE5. What have been the impacts of the label on consumers' understanding of the relevant production systems?

Section F – Potential impact of an EU animal welfare label

61. QF1a. Should the EU create a mandatory animal welfare label that would apply across species in the EU, to which extent would it have the following impacts?

Mark only one oval per row.

	no impact	very low extent	low extent	high extent	very high extent
Contribute to a more level playing field among food businesses (animal farmers, processors, manufacturers and retailers) in the EU	◯	◯	◯	◯	◯
Improve consumers' confidence in food businesses (animal farmers, processors, manufacturers and retailers)	◯	◯	◯	◯	◯
Improve consumers' understanding of animal production systems	◯	◯	◯	◯	◯
Improve compliance with EU animal welfare legislation across the EU	◯	◯	◯	◯	◯
Improve enforcement of EU animal welfare legislation by the competent authorities of Member States	◯	◯	◯	◯	◯

62. QF1b. Any other impact?

63. QF2a. Should the EU create a mandatory animal welfare label that would apply across species in the EU, how would it impact owners of existing animal welfare labels?

Mark only one oval per row.

	High impact	Medium impact	Low impact	No impact	Don't know
Net costs	◯	◯	◯	◯	◯
N Net savings	◯	◯	◯	◯	◯
Loss of commercial opportunities	◯	◯	◯	◯	◯
Increase of commercial opportunities	◯	◯	◯	◯	◯
Other(s)	◯	◯	◯	◯	◯

64. QF2abis. In case you responded other, please specify:

65. QF2b.Should the EU create a mandatory animal welfare label that would apply across species in the EU, how would it impact food businesses (farmers, processors, manufacturers and retailers) using existing animal welfare labels?

Mark only one oval per row.

	High impact	Medium impact	Low impact	No impact	Don't know
Net costs	◯	◯	◯	◯	◯
Net savings	◯	◯	◯	◯	◯
Loss of commercial opportunities	◯	◯	◯	◯	◯
Increase of commercial opportunities	◯	◯	◯	◯	◯
Other(s)	◯	◯	◯	◯	◯

66. QF2bbis. In case you responded other, please specify:

67. QF2c.Should the EU create a mandatory animal welfare label that would apply across species in the EU, how would it impact owners of existing mixed labels (i.e. labels incorporating animal welfare and other dimensions such as sustainability, authenticity, quality, traceability, etc.)

Mark only one oval per row.

	High impact	Medium impact	Low impact	No impact	Don't know
Net costs	◯	◯	◯	◯	◯
Net savings	◯	◯	◯	◯	◯
Loss of commercial opportunities	◯	◯	◯	◯	◯
Increase of commercial opportunities	◯	◯	◯	◯	◯
Other(s)	◯	◯	◯	◯	◯

68. QF2cbis. In case you responded other, please specify:

_____

_____

_____

_____

_____

69. QF2d. Should the EU create a mandatory animal welfare label that would apply across species in the EU, how would it impact food businesses (farmers, processors, manufacturers and retailers) using existing mixed labels?

Mark only one oval per row.

	High impact	Medium impact	Low impact	No impact	Don't know
Net costs	◯	◯	◯	◯	◯
Net savings	◯	◯	◯	◯	◯
Loss of commercial opportunities	◯	◯	◯	◯	◯
Increase of commercial opportunities	◯	◯	◯	◯	◯
Other(s)	◯	◯	◯	◯	◯

70. QF2dbis. In case you responded other, please specify:

Section G – Additional information and follow-up

71. QG1. Please feel free to provide any additional information you think it may be relevant for the purpose of the study:

72. QG2. Would you be available for a phone interview to discuss further with us your labelling system?

Mark only one oval.

- Yes
- No

A.7 Online survey – Analysis

This Annex presents the results of the online survey, which was performed as a part of the data collection envisaged under Research Task 2. The online survey was launched on 1 February 2021 and closed on 12 March 2021 targeting owners and/or managers of labelling systems – both existing and under development – covering animal welfare (AW) in the European Union (EU).

30 responses were obtained in total. However, 3 responses were not considered for the purpose of the analysis for the following reasons:

- 2 responses were provided by entities that did not qualify as owners and/or managers of labelling systems covering AW;
- 1 response was provided by an owner/manager of an AW labelling system, but the labelling system was not related to food industry.

Furthermore, 2 responses were provided by entities that co-manage a labelling system covering AW with another respondent. For such cases the responses referring to the same labelling system were considered as a single response and processed together for the purpose of the analysis.

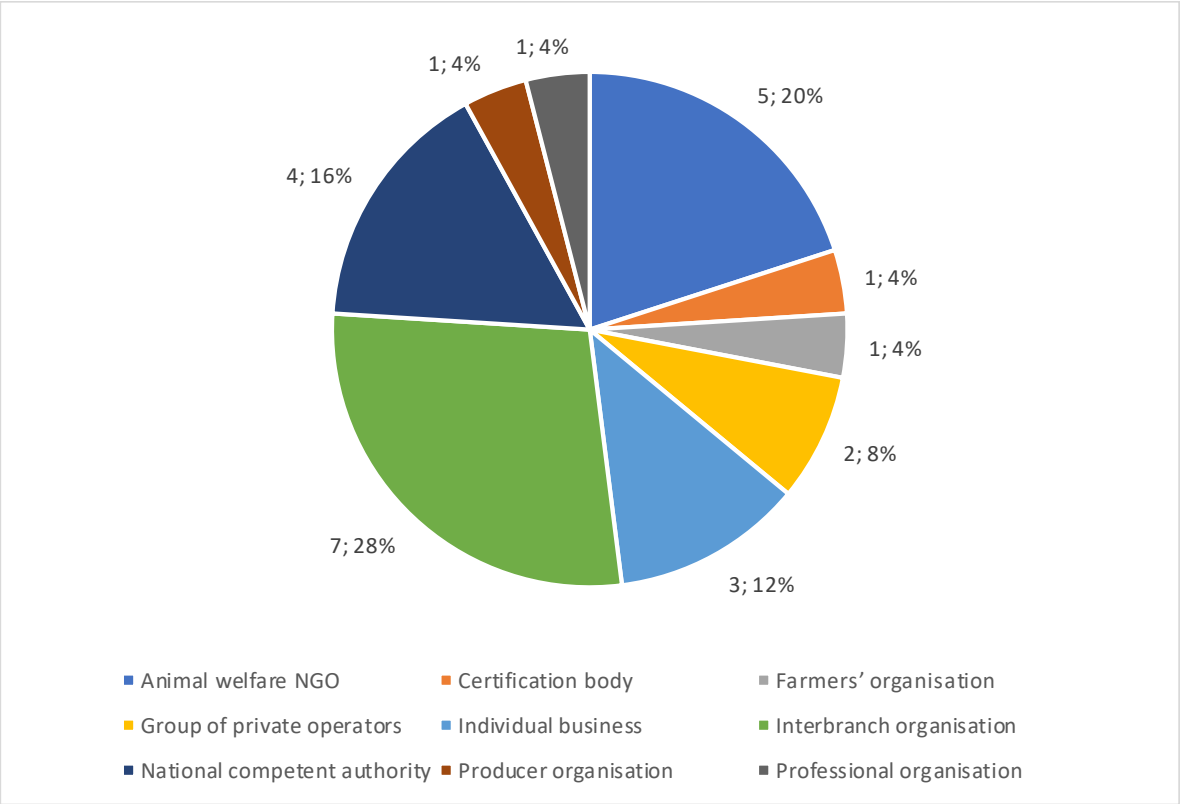
Finally, it should be noted that one respondent completed only Sections A and F of the survey without providing any details about the characteristics of the labelling system.

Therefore, 27 responses were ultimately validated and processed for the purpose of the analysis of the survey, which correspond to 24 food labelling systems covering AW that exist across the EU.

Section A – Profile of the respondent

Q: Type of owner and/or manager of a labelling system covering AW

Figure A.1. QA2. Type of owner and/or manager of a labelling system covering AW (n=25)



More than ¼ of the respondents to the survey are interbranch organisations (n=7, i.e. 29%), 4 of which are formally recognised through Regulation (EU) No 1308/2013 establishing a common organisation of the markets in agricultural products ('CMO regulation') (i.e. Interporc, Provacuno, Interovic in Spain and Ovoned in the Netherlands).

Amongst the respondents there are also 5 AW NGOs (i.e. 21%), 4 NCAs (i.e. 17%) and 3 individual food businesses (i.e. 13%). Also, 2 respondents represent a group of private operators, 1 farmer organisation, 1 certification body, 1 producer organisation and 1 professional organisation.

Section B – General details of the labelling system

Q: Name of the labelling system

Overall, the online survey identified **24 labelling systems** covering AW across the EU. The table below shows the name of the systems together with the respective logos.

Table A.1. Name and logo of the labelling system (n=24)

Labelling systems			
AMA Gütesiegel	Anbefalet af Dyrenes Beskyttelse	Animal Welfare Interovic Spain (AWIS)	Bedre dyrevelfærd
Best Farmer – Cuidamos do Bem-Estar Animal	Beter Leven keurmerk	Bienestar Animal avalado por ANDA	Compromiso Bienestar Animal PAWS
Disciplinare di etichettatura volontaria delle carni di pollame	EKO-keurmerk	Etiquette Bien-Être Animal	IKB Ei
Initiative Tierwohl	Interporc Animal Welfare Spain (IAWS)	KRAV	Label Rouge
National AW label (Italy)*	QM-Milch	Sigill Kvalitetssystem AB	National AW label (Germany)*
Tierschutz-kontrolliert	Tierschutzlabel 'Für Mehr Tierschutz'	Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk	Welfair

**A logo had not been developed yet by the time the survey was closed down*

Q: Year of establishment or expected year of implementation of the labelling systems

Figure A.2. Year of establishment or expected year of implementation of the labelling systems (n=24)

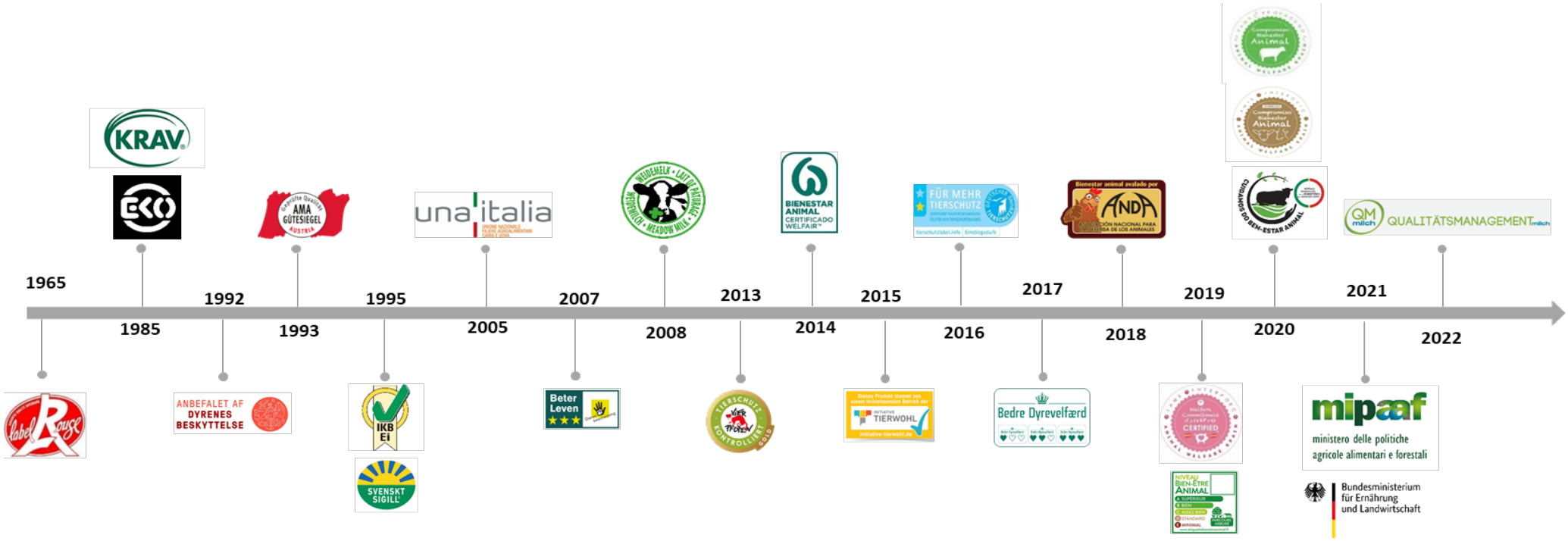


Figure A.2 provides for a chronology based on the year of establishment/expected year of implementation of each labelling system under study. The years of establishment of the labelling systems range from 1965 (Label Rouge – the oldest system under study) to 2022 (QM-Milch – currently under development). At present, in addition to QM-Milch, two public labelling systems covering AW are under development, one in Italy and another one in Germany. Likewise, the Spanish label Animal Welfare Interovic Spain, which was established in 2020, had no products labelled on the national market by the time the online survey was closed down.

Q: Member state where the labelling system was established

Figure A.3. QA4. Member State of establishment (n=24)

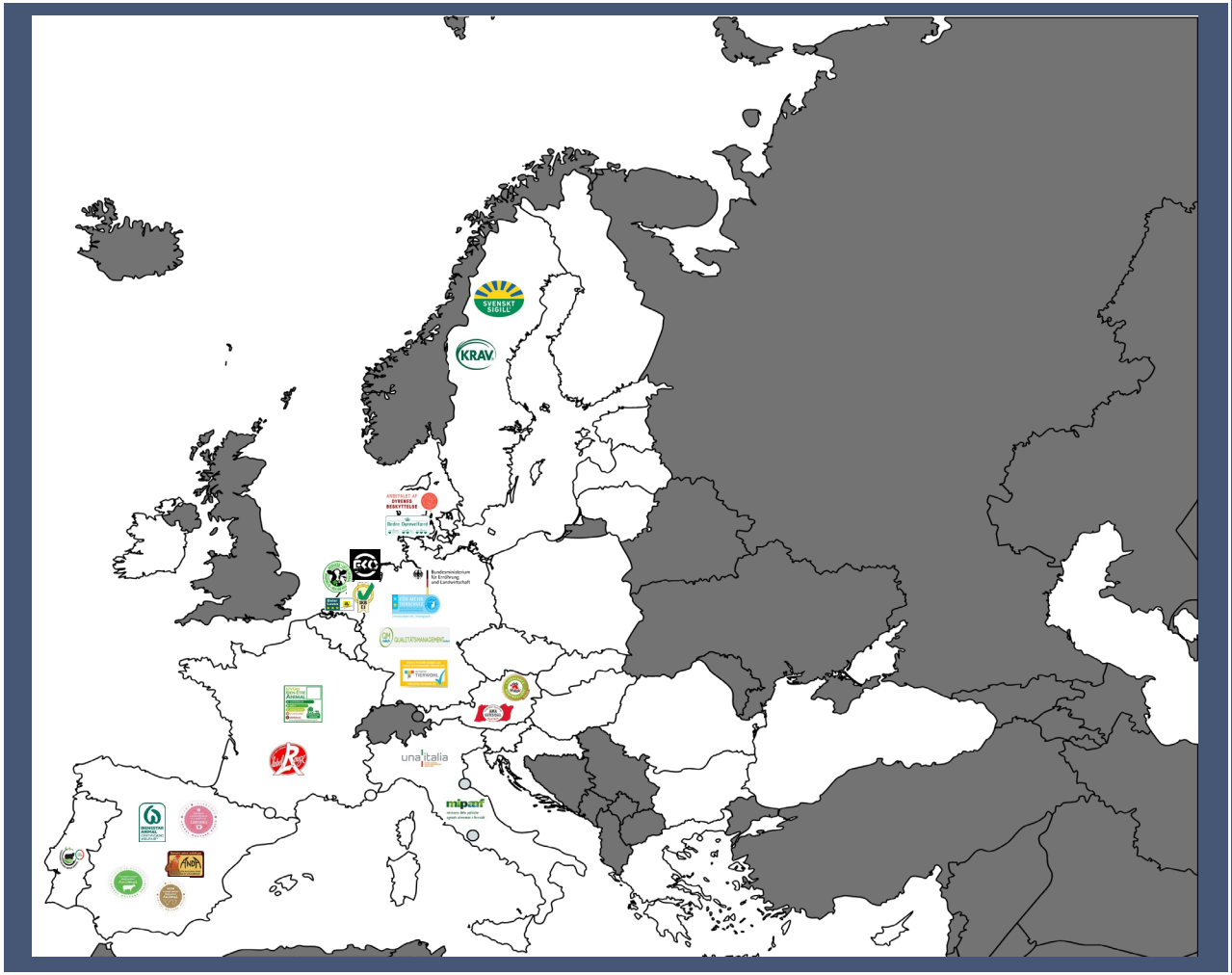


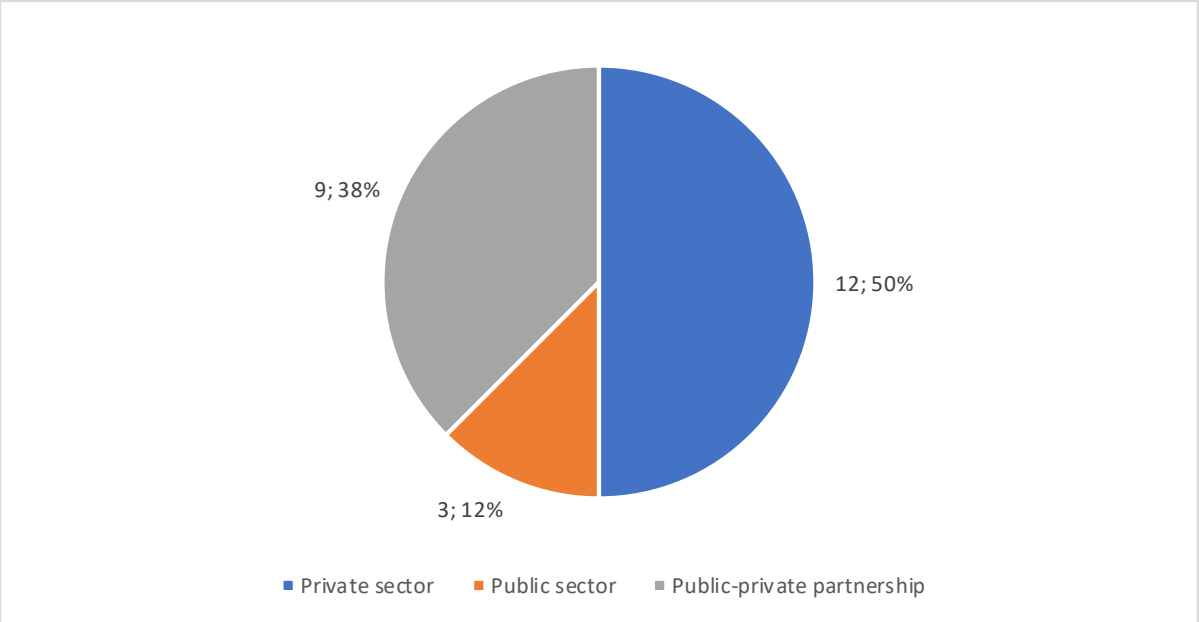
Figure A.3 presents the MS where the labelling systems that replied to the survey were initially established.

5 among the 24 labelling systems of the sample studied were established in Spain, 4 in the Netherlands and Germany, 2 in France, Denmark, Italy, Sweden and Austria, and 1 in Portugal.

Section C – Main characteristics of the labelling system

Q: At whose initiative was the label created?

Figure A.4. QC1. At whose initiative was the label created? (n=24)



Half of the labelling systems that replied to the survey were created at the initiative of the private sector (e.g. the labelling systems established in France, which are Label Rouge and Etiquette Bien-Être Animal). 3 (i.e. 12%) were created by the public sector (AMA Gütesiegel in Austria and the labelling systems under development in Italy and Germany) and 9 (i.e 38%) through public-private partnerships (e.g. 3 of the 4 labelling systems managed by an interbranch organisation: Compromiso Bienestar Animal PAWS, Animal Welfare Interovic Spain, IKB Ei as well as the Danish public labelling system Bedre dyrevelfærd).

Q: Who was/were the primary drafter(s) of the standard underpinning the label?

The range of answers provided to this question by respondents is quite diversified. In general, the majority of the respondents (approximately 54%) mentioned that the primary drafters of the standard underpinning the labels under study were, among others, farmers and/or farmers organisations.

Other respondents indicated that the primary drafters were NGOs, namely in the case of the labels Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk, Initiative Tierwohl, Etiquette Bien-Être Animal, Beter Leven keurmerk, Compromiso Bienestar Animal PAWS, among others.

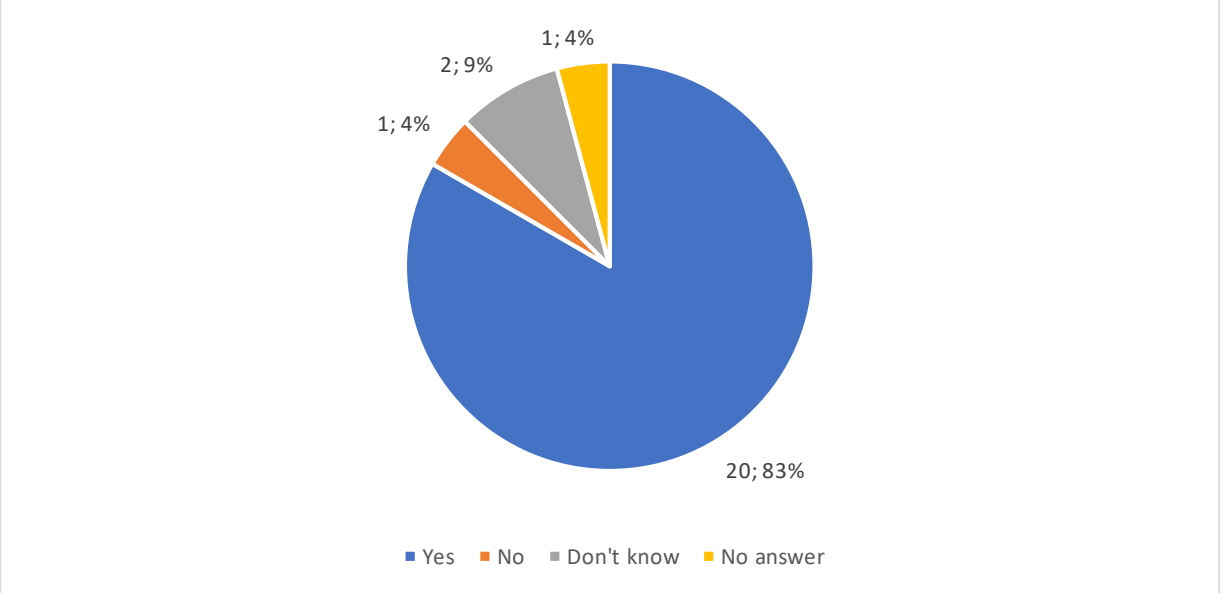
Scientists/experts and other public or private stakeholders were also frequently indicated as initiators of the labelling systems. By way of an example, the establishment of the labelling systems Etiquette Bien-Être Animal and Bedre dyrevelfærd were both initiated with the contribution of retailers, among others.

In accordance with the responses provided, public authorities contributed to the establishment of at least 3 systems (i.e. Bedre dyrevelfærd, the national AW Label in Germany and Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk).

Finally, several respondents indicated other primary drafters. As an example, the label Welfair is based entirely on the protocols developed in the context of the EU-funded project Welfare Quality and the European Animal Welfare Indicators Project.

Q: Was there a consultation on the draft standard underpinning the label before finalisation?

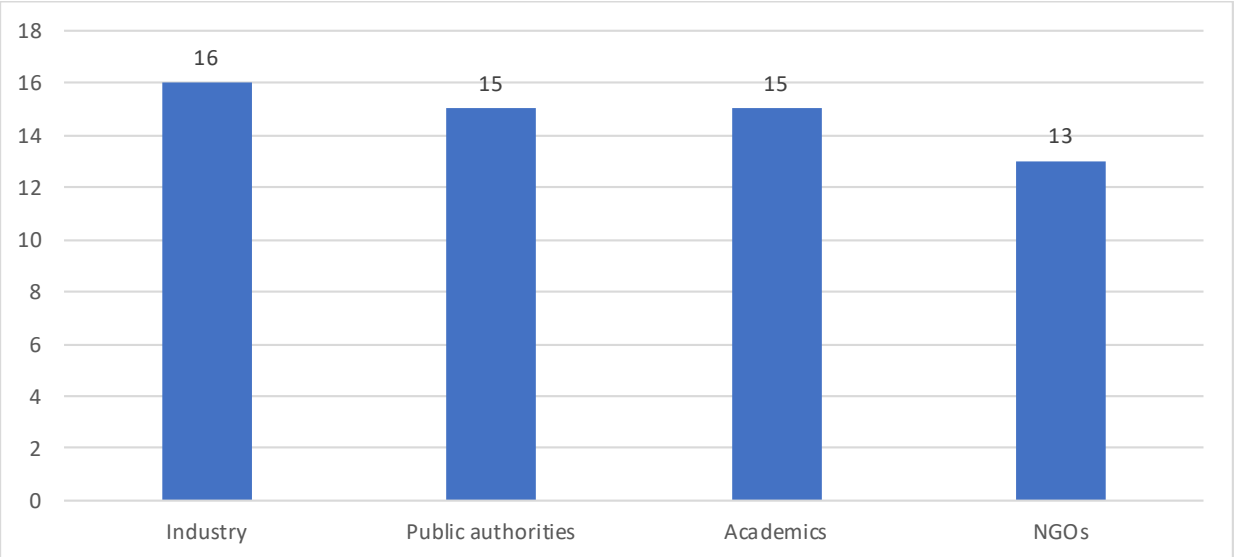
Figure A.5. QC3. Was there a consultation on the draft standard underpinning the label before finalisation? (n=24)



A large majority of the labelling systems surveyed (20, i.e. 83%) carried out a consultation on the draft standard underpinning the label prior to its finalisation. Only in one case (Bienestar Animal avalado por Anda) no consultation was performed before the finalisation of the label's standard. In two cases the respondent could not provide an answer to the question, while in one case there was no answer at all.

Q: Please specify who was consulted on the labelling system before finalisation

Figure A.6. QC3bis. Please specify who was consulted on the labelling system before finalisation (n=20)



Of the 20 labelling systems surveyed that indicated that there was a consultation on the draft standard underpinning the label before finalisation, a large majority (16, i.e. 80%) indicated that industry representatives were consulted on the labelling system. Also, 75% of the respondents

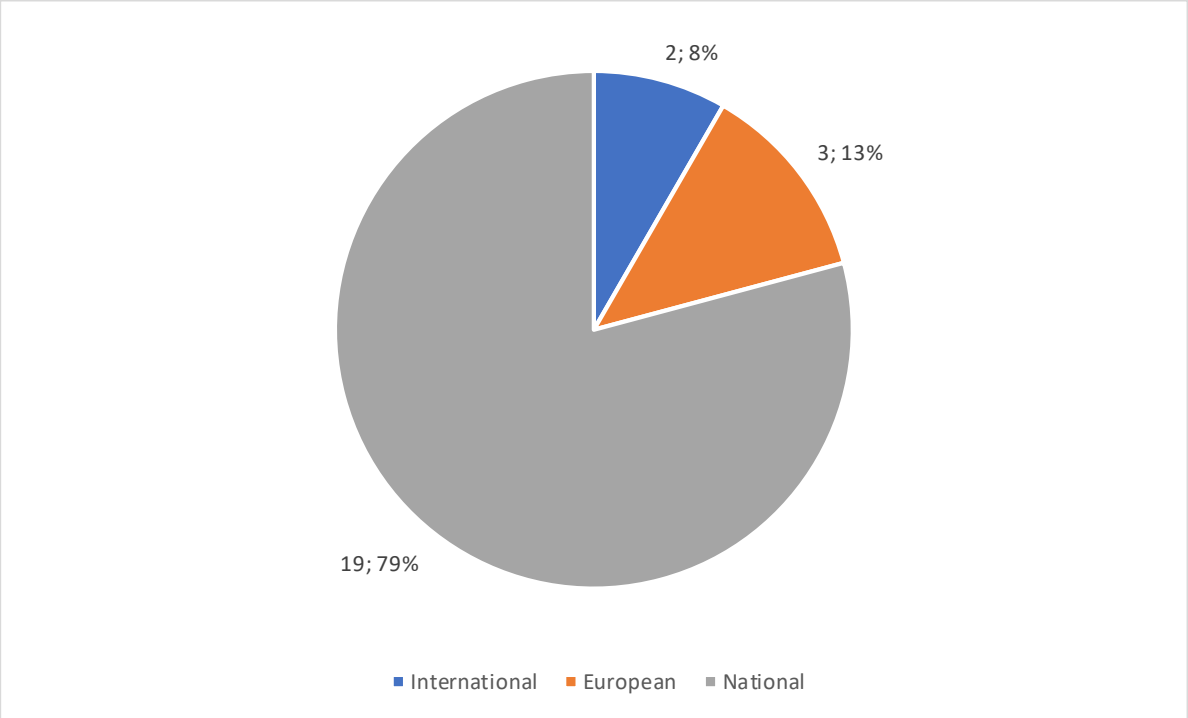
indicated that public authorities and academics were also consulted. Finally, NGOs were consulted on the labelling system before finalisation in the 65% of the labels under analysis. Finally, some respondents indicated other stakeholders were consulted on the labelling system before its finalisation, including certification bodies, retailers, representatives of the veterinarian profession and farmers' and consumers' associations.

Q: What is the regulatory status of the label?

All the labelling systems that form part of the sample analysed in the survey apply on a **voluntary** basis.

Q: What is the geographical coverage of the label?

Figure A.7. QC5a. What is the geographical coverage of the label? (n=24)



The geographical coverage of more than two thirds (n=19, i.e. 79%) of the labelling systems surveyed is national (4 systems in Spain; 2 in Austria, France, the Netherlands, Denmark, Germany, Italy and Sweden; and 1 in Portugal).

Conversely, 3 labelling systems (i.e. 13%) have a European geographical coverage, while in 2 cases (i.e. 8%) the geographical scope is international. The labelling system with European scope are:

- Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk – which covers several EU MS, amongst which the Netherlands, Germany, France, etc.;
- QM-Milch – which covers Germany as well as neighbouring countries; and
- IKB Ei – which covers the Netherlands, Germany and Belgium.

The labelling systems with international geographical coverage are: Tierschutzlabel "Für Mehr Tierschutz" and Welfair. The label Welfair is present especially in Spain and Portugal. However, in 2021 it started its expansion across South America, starting with countries that were involved in the EU-funded Welfare Quality project in the past.

Q: What is the scope of the label?

Figure A.8. QC6. What is the scope of the label? (n=24)

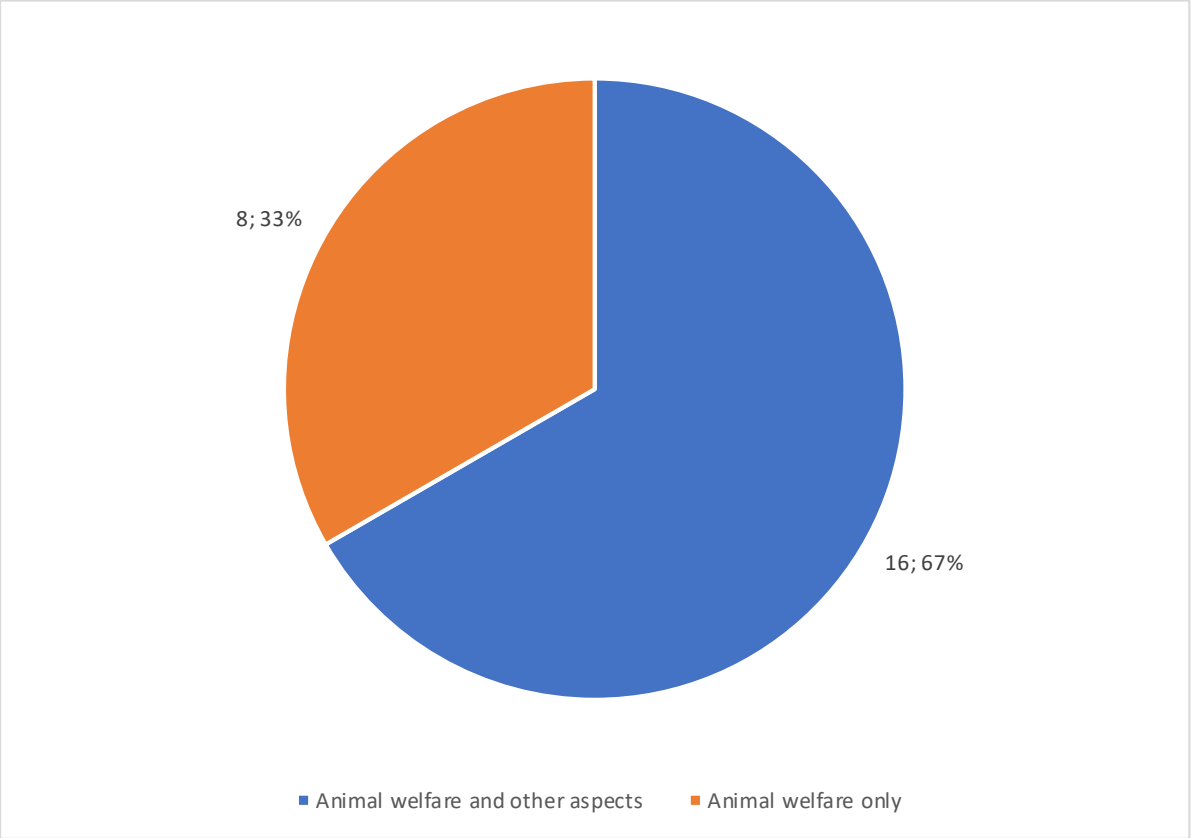


Figure A.8 shows that, within the sample surveyed, more than two thirds of the respondents (n=16 corresponding to 67%) indicated that the scope of the respective labelling system was "mixed", i.e. it includes other aspects related to the product and/or its processing methods besides AW. Conversely, 8 labelling systems, which correspond to 33% of the sample surveyed, focus solely on AW.

Q: In case you responded "AW and other aspects" on the scope of the label, please indicate which aspects are covered by the label

Figure A.9. QC7. In case you responded "AW and other aspects" to QC6 on the scope of the label, please indicate which aspects are covered by the label (n=16)

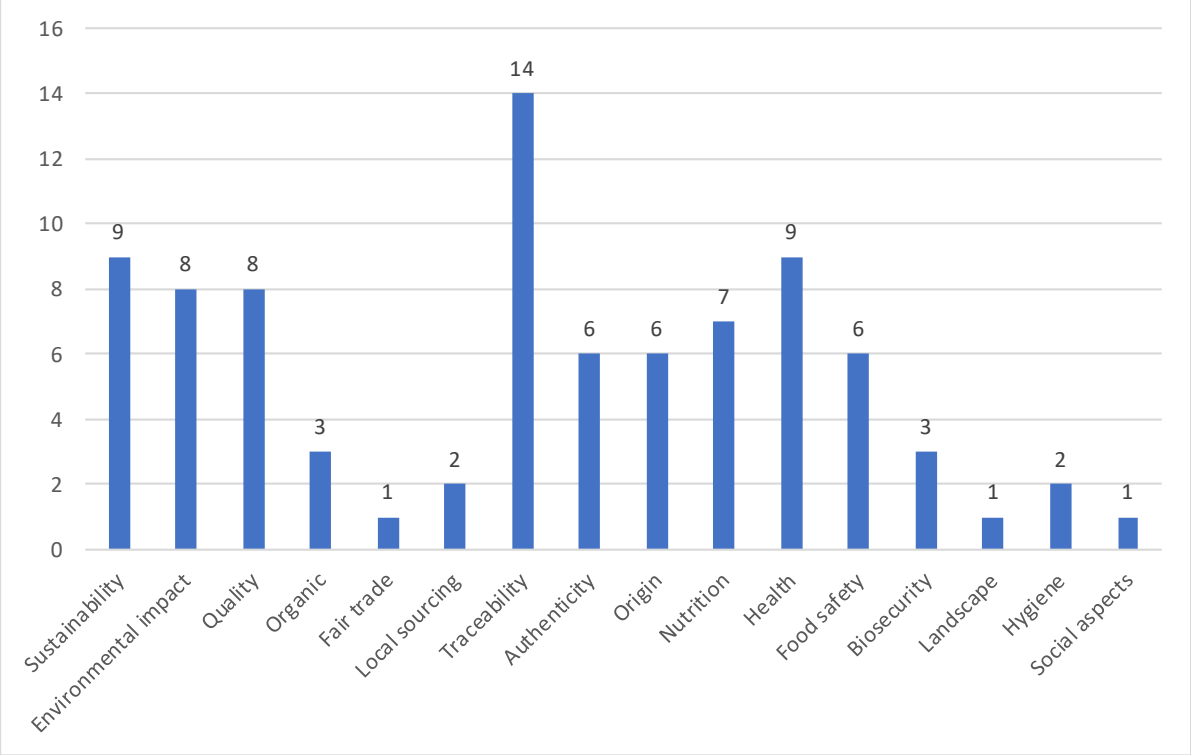


Figure A.9 provides a quantitative overview of the aspects covered by mixed labels besides AW. As shown, traceability is the aspect addressed by most of labels (in 14 cases out of 16 respondents), followed by sustainability and health (n=9). In addition, environmental impact, quality, nutrition, origin, authenticity, and food safety are among the aspects more frequently covered by the labels surveyed.

Of the systems analysed, AMA Gütesiegel is the labelling system that covers most aspects (9 precisely), followed by Interporc Animal Welfare Spain, IKB Ei and the Italian national labelling system, which all cover 8 aspects besides AW.

Q: Which species does the label currently apply to? For each relevant species please indicate the production phase(s) covered by the label, i.e. on-farm, during transport, at slaughter or other(s)

Figure A.10. QC8a. Which species does the label currently apply to? For each relevant species please indicate the production phase(s) covered by the label, i.e. on-farm, during transport, at slaughter or other(s) (n=24)

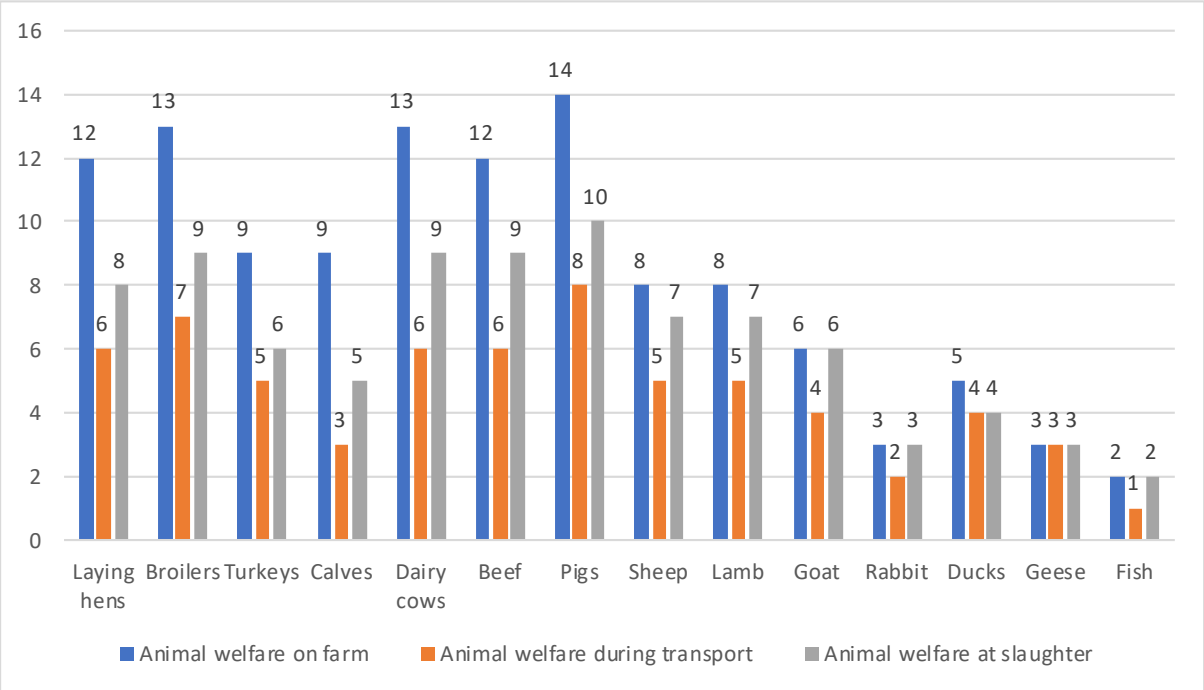


Figure A.10 shows the animal species and the production phases covered by the labelling systems surveyed. Overall, for almost all species "AW on farm" is by far the production phase that is most frequently covered by the labelling systems under study, followed by "AW at slaughter" and, finally, "AW during transport". In the labelling systems covering goat, rabbit, geese and fish the different production phases are in general terms equally relevant.

From an animal species standpoint, currently pigs are the species which is more frequently covered by the labelling systems under study. Of the 24 labelling systems surveyed, 14 (i.e. 58%) cover at least one aspect of AW relevant to those animals. Broilers and dairy cows follow right after with 13 labelling systems covering at least one aspect of AW relevant to these species. Contrarily, fish is the species least covered by the labelling systems studied. Only 2 labelling systems, both in Sweden (i.e. KRAV and Sigill Kvalitetssystem AB), cover this species.

Q: Which categories of food products does the label currently apply to?

Figure A.11. QC9. Which categories of food products does the label currently apply to? (n=24)

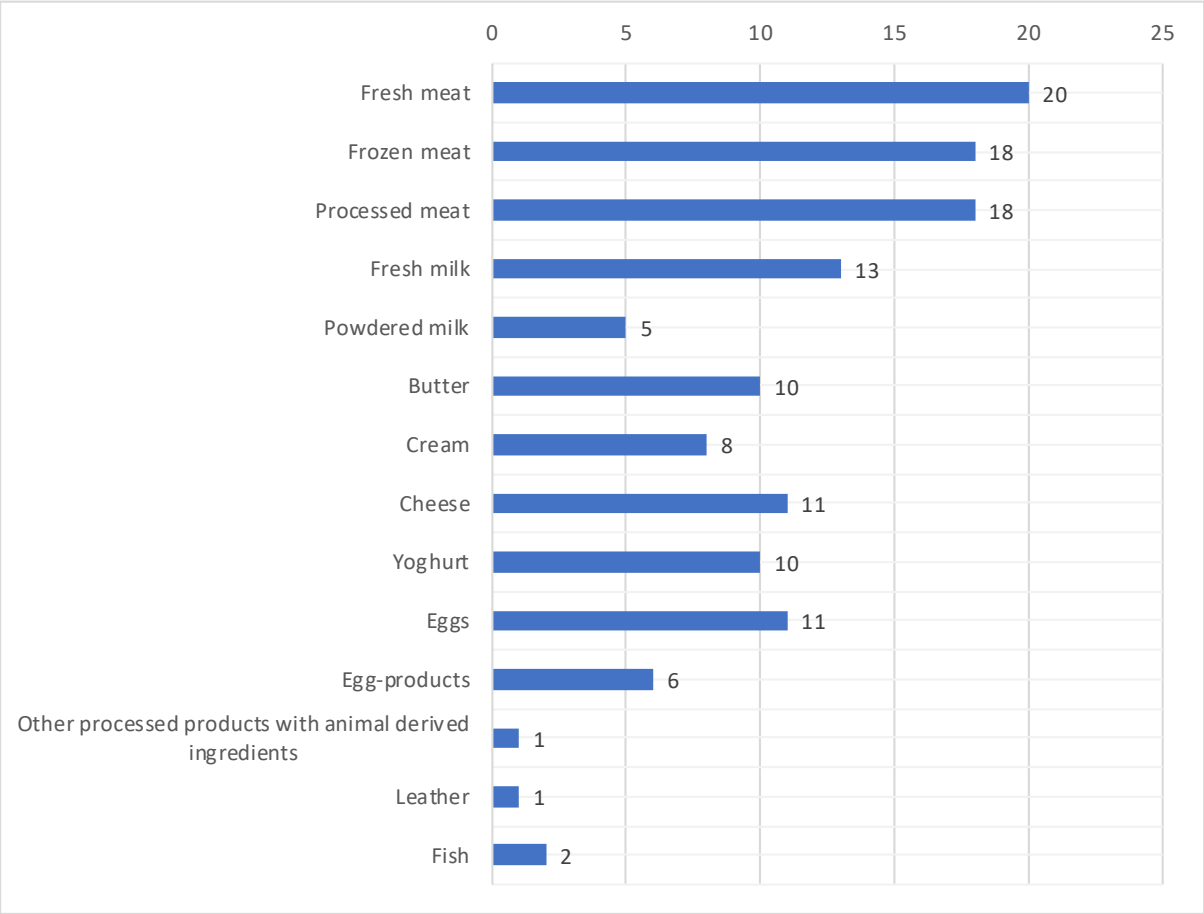


Figure A.11 provides an overview of the type of food products that are currently covered by the labelling systems that took part in the survey. Overall, meat is the food category that is more frequently covered. More specifically, fresh meat (20 out of 24 labelling systems) and frozen and processed meat (18 labelling systems) are the product categories covered more frequently across the systems surveyed, followed by certain dairy products – such as fresh milk and cheese (13 labelling systems and 11 systems, respectively) – and eggs (11 labelling systems). Only one labelling system (Beter Leven keurmerk in the Netherlands) covers other processed food products containing animal-based ingredients.

Of the systems analysed, the Swedish label KRAV is the labelling system that covers the highest number of food categories (n=12), followed by EKO-keurmerk and Tierschutzlabel "Für Mehr Tierschutz", both covering 11 different food categories. Conversely, there are few labelling systems that apply only to one food product, namely Bienestar Animal avalado por ANDA and IKB Ei (both focus on eggs) and Etiquette Bien-Être Animal (fresh meat).

Q: Do you expect the label to incorporate additional features in the near future?

Figure A.12. QC10. Do you expect the label to incorporate additional features in the near future? (n=24)

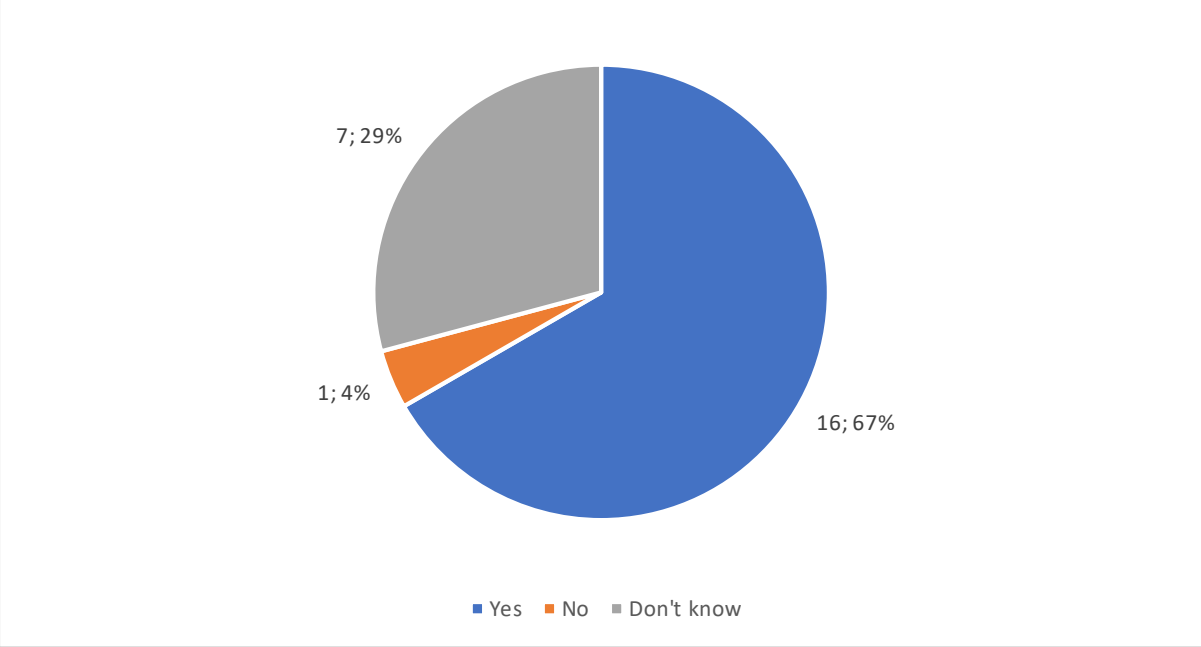


Figure A.12 shows that, within the sample surveyed, 16 labelling systems, which correspond to 67% of the respondents, intend to incorporate additional features in the label's standard in the near future. Only one respondent (i.e. the labelling system Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk initiated in the Netherlands) indicated that no additional feature was expected to be incorporated in the short term.

Q: In case you responded yes, please specify other species you plan to add to your label:

8 respondents indicated their intention to incorporate other animal species into their labelling system. The species of interest are turkey, cattle, geese, calves, fish, dairy cows, beef cattle, pigs, lamb, poultry and eggs. Initiative Tierwohl in Germany and the public Danish system Bedre dyrevelfærd are the labels that intend to add more species in the near future (n=3). Initiative Tierwohl plans to include calves, dairy cows and beef cattle whereas Bedre dyrevelfærd intends to expand to lamb, poultry and eggs.

Q: In case you responded yes, please specify other food product categories you plan to add to your label:

9 respondents indicated their intention to incorporate other food product categories into their labelling system namely, processed products, other meat products, other dairy products, eggs products and leather. Across the systems studied, Initiative Tierwohl in Germany is the label that intends to include the highest number of food product categories in the scope of the labelling system in the near future (n=4), namely fresh milk, butter, cheese and yoghurt.

Q: In case you responded yes, please specify other regions/countries you plan to add to your label:

Only 2 respondents indicated their intention to expand the label to other regions/countries. As mentioned above, the label Welfair is currently working on its expansion in South America. Also, IKB Ei intends to include other EU countries in the scope of the label.

Q: In case you responded yes, please specify other dimensions of AW you plan to add to your label:

7 respondents indicated their intention to include other dimensions besides AW in their labels. As an example, Bienestar Animal avalado por Anda intends to incorporate AW during transport and at slaughter while Initiative Tierwohl intends to give broader consideration to specific AW aspects (e.g. findings of checks performed in slaughterhouses).

Also, although not related to the question itself, 2 respondents (Compromiso Bienestar Animal PAWS and Animal Welfare Interovic Spain) indicated their intention to obtain a recognition of the national accreditation body.

Q: In case you responded yes, please specify other dimensions besides AW (e.g. sustainability, quality, authenticity, traceability, food safety, origin, organic etc.) you plan to add to your label:

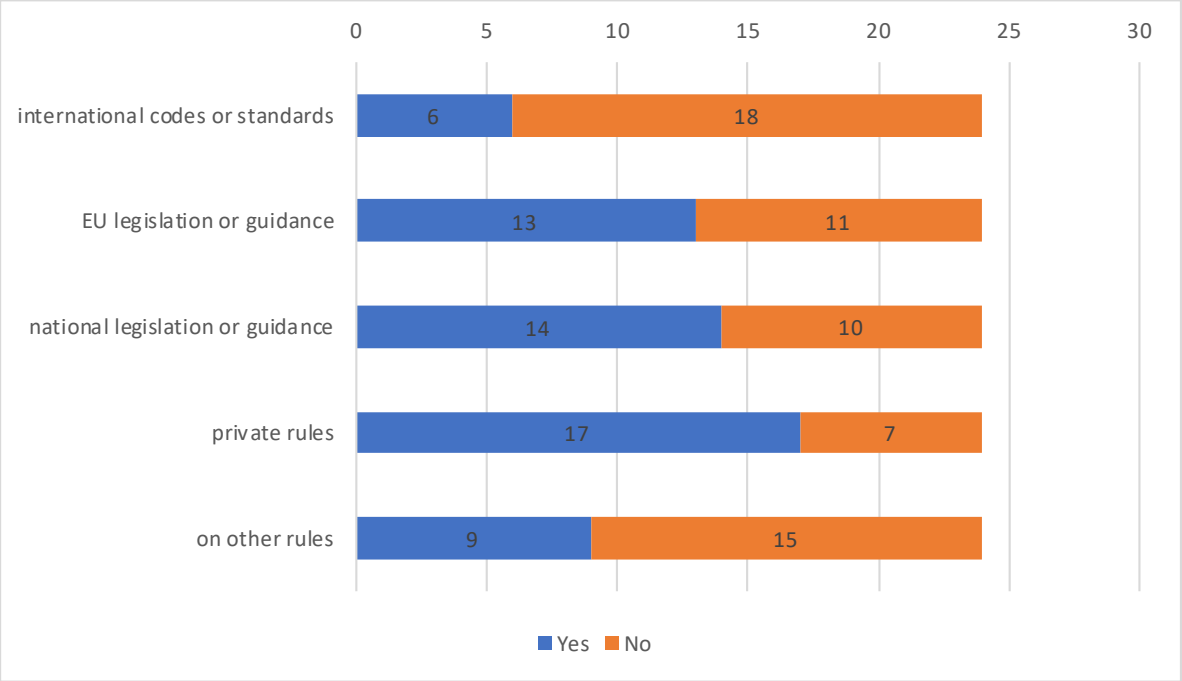
8 respondents indicated their intention to include other dimensions besides AW in their labels. Overall, sustainability, environmental impact and traceability are the dimensions most frequently mentioned.

By way of an example, the label Welfair is currently working on a technical project to determine whether with the help of new technologies it is possible to know exactly the number of days and hours that cattle have been grazing. Should that be possible, the label will include pasture.

Section D – Functioning of the labelling system

Q: Are the AW requirements in your standard based on international codes or standards, EU legislation or guidance, national legislation or guidance, private rules or other rules?

Figure A.13. QD1a – QD1e. Are the AW requirements in your standard based on (n=24)



Overall, the analysis conducted shows that the labelling systems studied often use a complex mix of scientific, legal and/or private sources to define the AW requirements covered in the label's standard.

Based on the results shown in Figure A.13, 71% of the respondents indicated that the AW requirements in their labelling standard were based on "private rules", whereas only in 25% of the cases such requirements were based on "international codes or standards". In addition, 58% of the labelling systems of the sample studied are based on "national legislation or guidance", while 54% are based on "EU legislation or guidance".

The respondents that indicated that the AW requirements in their standard were based on "international codes or standards" made reference to the following sources:

- Rules of the World Organisation for Animal Health (OIE);
- Welfare Quality protocol;
- Protocols of the Animal Welfare Indicators Network (AWIN); and
- Basic standards of the International Federation of Organic Agriculture Movements (IFOAM).

By way of an example, the label Welfair for cattle, pigs and laying hens is based on Welfare Quality protocols, which result from an EU-funded project. In addition, some of the AW requirements laid down in the label's standard of Etiquette Bien-Être Animal are based on the Welfare Quality protocol for broilers.

Among the respondents who reported that the AW requirements in their standard were based on "EU legislation or guidance" and "national legislation or guidance", reference was frequently made

to EU AW-related regulations and directives currently in force, EU organic legislation as well as to other species-specific national legislation.

Among the respondents who indicated that the AW requirements in their standard were based on "private rules", several labelling systems referred that requirements had been defined by the sector (e.g. group of stakeholders). This is the case for the following labelling systems: Tierschutzlabel "Für Mehr Tierschutz", Sigill Kvalitetssystem AB, Label Rouge, Compromiso Bienestar Animal PAWS and EKO-keurmerk.

Finally, some respondents indicated that the AW requirements in their labelling standard were based on "other rules". These include scientific studies or guidelines (4 respondents), recommendations or criteria set by NGOs (2 respondents), guides of good practice (2 respondents) and scientific knowledge (1 respondent).

Q: To which extent are the requirements set in the label's standard (e.g. stocking density, duration of transports, methods of stunning etc.) based on scientific evidence?

6 out of 22 respondents (i.e. 27%) indicated that **all** requirements set in the label's standard were based on scientific evidence.

In the remaining cases, respondents indicated that **most** requirements set in the label's standard were based on scientific evidence, while additional factors/elements may be taken into account to inform the label standards. For example, the standard of Beter Leven keurmerk is scientifically based but also considers consultation with experts and the industry. Another example, the requirements of Bedre dyrevelfærd are based on scientific evidence and also practical experience.

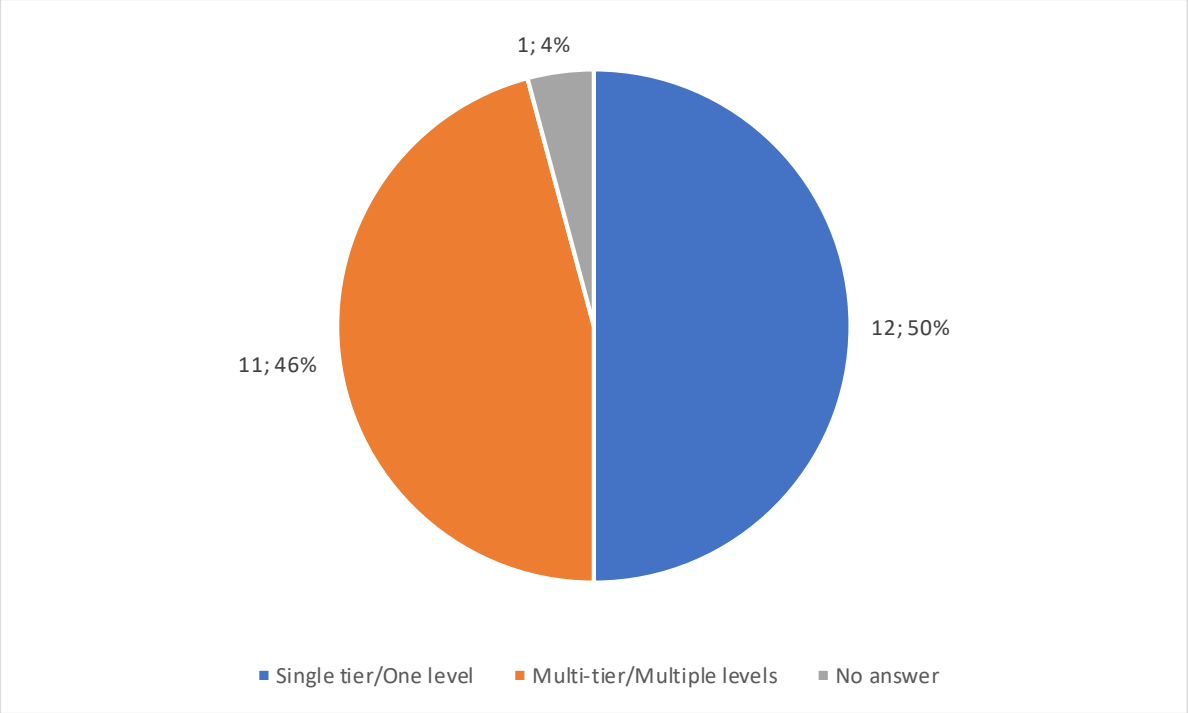
Q: Does the label's standard incorporate rules for reviewing and updating the standard? if yes, please explain.

Of the 21 respondents to this question, almost all (95%) indicated that their label's standard incorporated rules for reviewing and updating the standard. Only one system, Disciplinare di etichettatura volontaria delle carni di pollame, does not foresee such rules.

Among the systems that have rules in place for reviewing and updating their standard, there are some systems that carry out this review at least annually (e.g. Anbefalet af Dyrenes Beskyttelse). Conversely, others do so at a higher frequency, such as in the case of the Dutch system QM-Milch case and of German label Initiative Tierwohl (a review every three years). There are also systems that undertake the review of the standard whenever there is any legal change affecting it (e.g. again this is the case of the German label Initiative Tierwohl).

Q: How is the label designed?

Figure A.14. QD5a. How is the label designed? (n=24)



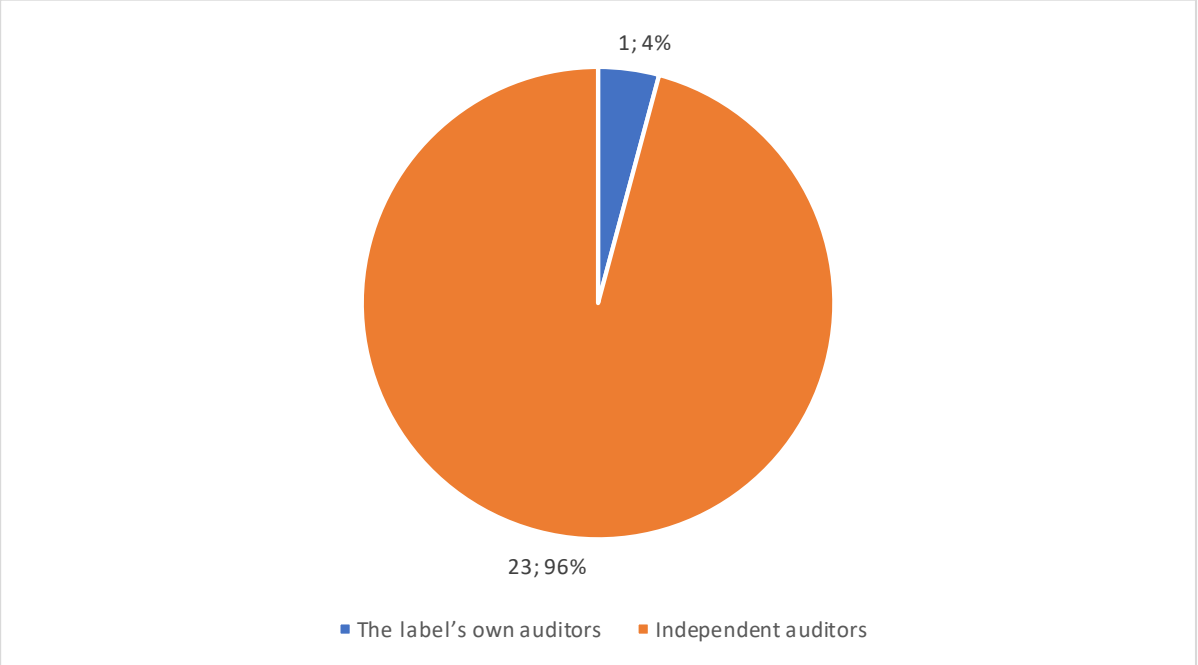
Half of the respondents (n=12) declared that their labels were based on a single tier/level, whilst 11 respondents (i.e. 46%) indicated that their labels followed a multi-tier/level approach.

Overall, in the case of the labelling systems with more than one tier/level, different approaches are followed. Bedre dyrevelfærd, Beter Leven keurmerk and Etiquette Bien-Être Animal are examples of multi-tier systems. On the one hand, Bedre dyrevelfærd has three tiers symbolised by hearts, whereas Beter Leven keurmerk has also three tiers but represented by stars. On the other, Etiquette Bien-Être Animal has five tiers based on scoring system ranging from A (the highest level of AW) to E (the lowest admitted by the system). Based on complementary information provided by the owners/managers of the labels mentioned above, the choice of a multi-tier approach for AW labelling was justified by the objective to provide consumers with reliable, easy-to-understand and measurable information about AW.

Conversely, the two labelling systems Interporc Animal Welfare Spain and Animal Welfare Interovic Spain, which are both based on a single-tier/level approach, indicated that that was the format that better suited the Spanish social reality. Also, the Swedish label system KRAV presents a single tier/level as, in accordance with this respondent, that approach minimises confusion by consumers and all other stakeholders involved.

Q: Who audits food businesses against the standard underpinning the label?

Figure A.15. QD7. Who audits food businesses against the standard underpinning the label? (n=24)



As shown in Figure A.15, 96% of the respondents indicated that in the context of their system auditing is performed by **third-party auditors.** Only one respondent (the Danish public labelling system Bedre dyrevelfærd) referred that audits are also performed by its own auditors.

Most respondents (approximately 15) indicated that audits are carried out at least once a year. However, the frequency at which audits take place may vary within each labelling system. In the case of systems that perform audits on different stages of the production chain, auditing frequency can differ a lot. For example, in the case of IKB EI, the audit takes place once a year at farm level, whereas packaging stations and hatcheries are visited four and two times a year, respectively. In the case of QM-Milch, on-farm audits are performed every three years while processors are visited on annual basis.

Q: Are audits announced (i.e. are food businesses informed in advance that they will soon be audited)?

Figure A.16. QD9. Are audits announced (i.e. are food businesses informed in advance that they will soon be audited)? (n=24)

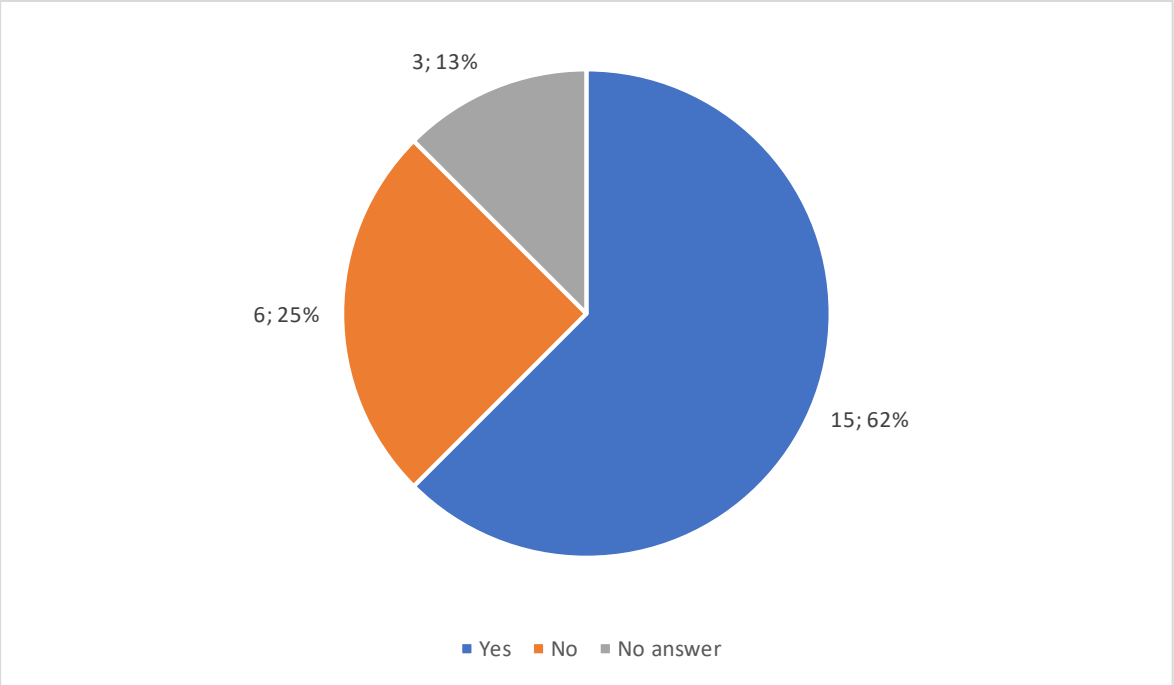
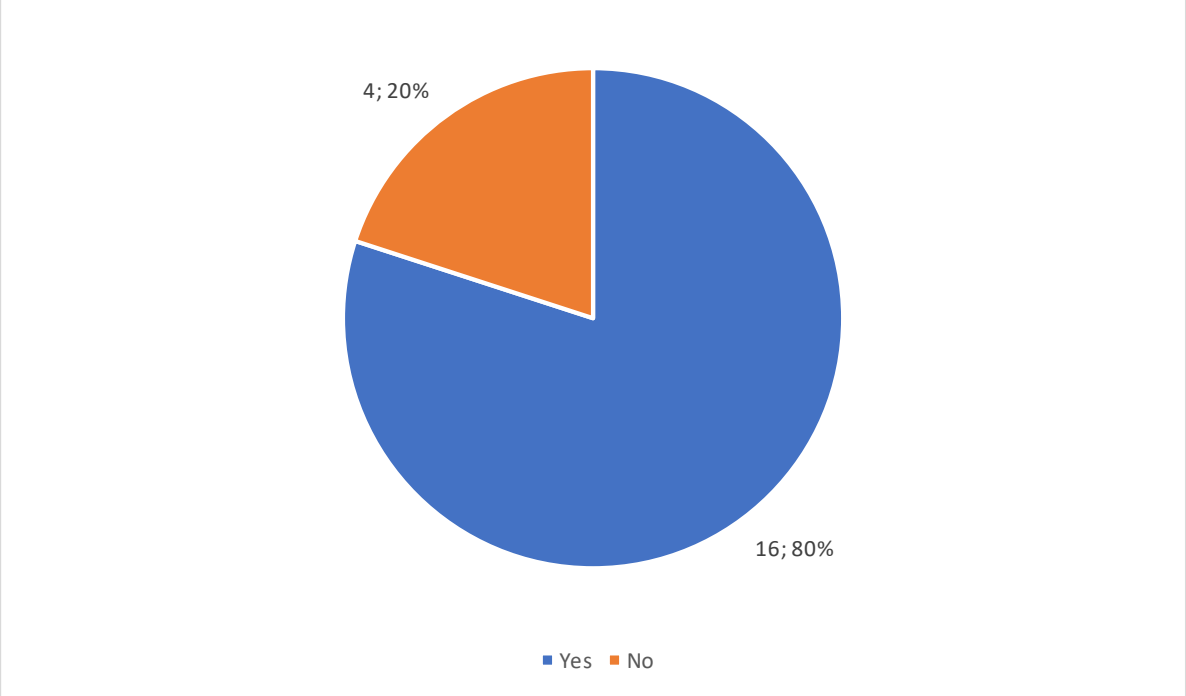


Figure A.16 shows whether audits carried out to verify compliance with AW requirements in the standards of the labelling systems surveyed are announced or not. As shown, 15 respondents, corresponding to 62% of the labelling systems that replied to this question, indicated that food businesses were informed in advance about upcoming audits as a rule, while 6 respondents (i.e. 25%) referred that there was no prior announcement. The systems where the audits are **not** announced are: Tierschutzlabel "Für Mehr Tierschutz", Label Rouge, Beter Leven keurmerk, Bedre dyrevelfærd, Initiative Tierwohl and the German national AW label.

Regarding the systems where audits are announced, most respondents indicated that the food business was generally informed a few days in advance. For instance, in the case of the audits performed by IKB Ei, concerned food businesses are informed a week in advance, while in the case of the Austrian label Tierschutz-kontrolliert they are informed up to three weeks in advance. Other respondents, including Compromiso Bienestar Animal PAWS, EKO-keurmerk and Animal Welfare Interovic Spain, indicated that the timing of the prior warning depended on the auditing body.

Q: Does the label distinguish between different levels of non-compliances with the standard (e.g. minor and major)?

Figure A.17. QD11. Does the label distinguish between different levels of non-compliances with the standard (e.g. minor and major)? (n=20)



The large majority of respondents who replied to this question (n=16; i.e. 80%) indicated that their labelling system distinguished between different levels of non-compliances with the standard, whilst 4 (i.e. 20%) indicated that there was no such distinction at present. The systems that **do not** make any distinction between levels of non-compliance include Welfair, Bienestar Animal avalado por ANDA, Label Rouge and the national AW label in Germany.

Several respondents provided more details on how their system distinguishes between different levels of non-compliance. For instance, few labelling systems currently foresee two levels of non-compliance. Taking the Danish label Anbefalet af Dyrenes Beskyttelse as an example, this considers minor errors (i.e. which not affect directly the animals) alongside major ones (which affect the animals). On the other hand, few other labelling systems contemplate three levels of non-compliance (e.g. the Spanish labels Compromiso Bienestar Animal PAWS and Animal Welfare Interovic Spain, which categorise non-compliances as "critical", "serious" or "mild"). Finally, other labelling systems consider up to 4 levels of non-compliance: this is the case of the Swedish label KRAV that classifies non-compliances as "minor", "major", "suspension" and "justifying label removal".

In addition, two respondents (Interporc Animal Welfare Spain and Etiquette Bien-Être Animal) indicated that their system distinguished the level of non-compliances using a score system. In case of the system Interporc Animal Welfare Spain, farmers and slaughterhouses participating in the labelling system are attributed a score depending on their level of compliance. Regarding the Etiquette Bien-Être Animal, in the event of a non-compliance the AW score of the product is downgraded, which is then made visible through the label attached to the product.

Q: How are non-compliances responded to? Please explain

Of the 20 responses obtained to this question, different actions are applied by each system depending on the severity/level of non-compliances detected.

Regarding minor non-compliances, the most recurrent practice is to apply ad hoc corrective actions (11 labelling systems, i.e. 55%). For the serious non-compliances, 11 respondents (i.e. 55%) indicated that the food business may lose the certification.

By way of an example, the German label Tierschutzlabel "Für Mehr Tierschutz" envisages three different possible responses based on the level of non-compliances: if "minor" a risk assessment is performed; if "major" a risk assessment and another audit may have to take place; and if "extremely serious" products may be prohibited to be sold with the label. On the contrary, regarding Etiquette Bien-Être Animal there is no formal obligation for the food business operator to correct non-compliances identified. However, in case of repeated non-compliances, this may affect the overall AW score of the product, which will be subject to downgrading as appropriate.

Q: Do audit frequencies vary as a result of the level of compliance (e.g. high or low) with the standard? Please explain

15 of 21 respondents (i.e. 71%) of the respondents stated that non-compliances may lead to additional audits. By way of an example, in case of repeated non-compliance or in case of a certain non-compliance with the standard of the Austrian labelling system Tierschutz-kontrolliert, an additional audit is performed in addition to the one carried out on an annual basis. On the contrary, Label Rouge does not foresee variations in the frequency of auditing depending on the level of compliance as, according to the respondent, it is important to maintain the frequency of controls regular.

Section E – Market penetration and impacts of the labelling system

Q: Please indicate how many farmers, processors, manufacturers, retailers and food businesses (in total) are currently affiliated to your labelling system and how many products are currently certified against the AW standard underpinning the label

Table A.2 shows the number of affiliates/members and products certified per labelling system based on the replies provided to the online survey. It should be noted that some labelling systems were not considered for this analysis as, by the time at which the survey was closed, they were still under development. This is the case of the following systems: the government-owned labelling systems in Germany and Italy; Animal Welfare Interovic Spain; and QM-Milch.

Table A.2. Number of farmers, processors, manufacturers, retailers and food businesses (in total) are affiliated to the labelling systems and products currently certified (n=24)

Labelling system	Farmers	Processors	Manufacturers	Retailers	Products certified
AMA GUTESIEGEL	N/P	N/P	N/P	N/P	N/P
ANBEFALET AF DYRENES BESKYTTELSE	380	12	N/P	18	500
Bedre Dyrevelfærd	1,594	57	6	2,600	N/P
	1	0	0	0	N/P
Beter Leven	1,800	434 processors, 33 logistics, 4 food services, 22 egg packing stations, 56 chain managers, 51 slaughterhouses		23	5,500
ANDA	30	0	0	0	N/P
	0	2	2	0	
una italia	3,643	19	19	0	N/P
	500	200	100	25	N/P
NIVEAU BIEN-ÊTRE ANIMAL	1,100	0	2	5	N/A 30 millions of products sold in 2020
IKB Ei	90% of the Dutch farmers	All the large processors	All the large manufacturers	All the large retailers	N/P
TIERWOHL	6,500	100	50	All leading retailers in Germany	N/P
	48	11	27	0	N/P
KRAV	4,000	2,800 (including processors, retailers, restaurants etc.)			7,000

Labelling system	Farmers	Processors	Manufacturers	Retailers	Products certified
	6,000	250 companies (including hatcheries, feed manufacturers, slaughterhouses etc.)		N/P	>220
	N/P	N/P	N/P	N/P	N/P
	144	3	3	5	25
	425	63	25	Almost all retailers in Germany	200
	17	170	170	25	10
	500	50	50	10	25

N/P = Not provided N/A= Not available

Q: What have been the impacts of the label on food businesses using it?

The range of answers provided to this question (14 respondents) is very diversified and include, among others, the following perceived impacts:

- Added value for the food products displaying the label;
- Contribution towards local and rural development;
- Quality image and better positioning in the market of labelled products;
- Possibility to communicate to the consumer good practices by the relevant production chain.

In the case of Etiquette Bien-Être Animal, while there is a general global satisfaction vis-à-vis the labelling system on the French market, for the time being no major impact on sales has been noted. Consumers studies reveal that the label is well understood, but possibly not yet actively sought for when consumers shop.

In the case of the label Welfair the impact of the label on food businesses can be measured considering the different animal species: for instance, in the case of pigs only 7% of all Spanish farms are certified under the system, while for dairy cows this percentage is over 50%. In the case of the Dutch system Beter Leven keurmerk, for pig meat the label has become a new standard having market share over 90%.

6 respondents, among which feature the labelling systems that have been established over the last few years, indicated that it was too early to assess the impacts of the label on food businesses and on the market.

Q: What have been the impacts of the label on consumer confidence towards food businesses using it?

Amongst the most main/recurrent impacts mentioned (11 respondents), the following can be singled out:

- The label is perceived as a synonym of high AW standard and consumers care about it;

- The label attests the quality of the product;
- The label improves the perception of the product and the production system; and
- The label has very high credibility and consumers trust it.

Some respondents indicated consumer studies that demonstrate confidence in their labelling systems. For instance, a survey conducted in Denmark showed that 71% of Danish consumers trust the public national label Bedre dyrevelfærd. Also, Beter Leven keurmerk measures consumer confidence one or two times a year: the most recent research shows that more than 90% of Dutch consumers recognise the label. In the case of Label Rouge, more than 97% of the French consumers can recognise the logo of the system to which they associate quality, taste and AW.

13 respondents mentioned that the impact of the label on consumer confidence towards food businesses using it was not measured by them.

Q: What have been the impacts of the label on consumers' understanding of the relevant production systems?

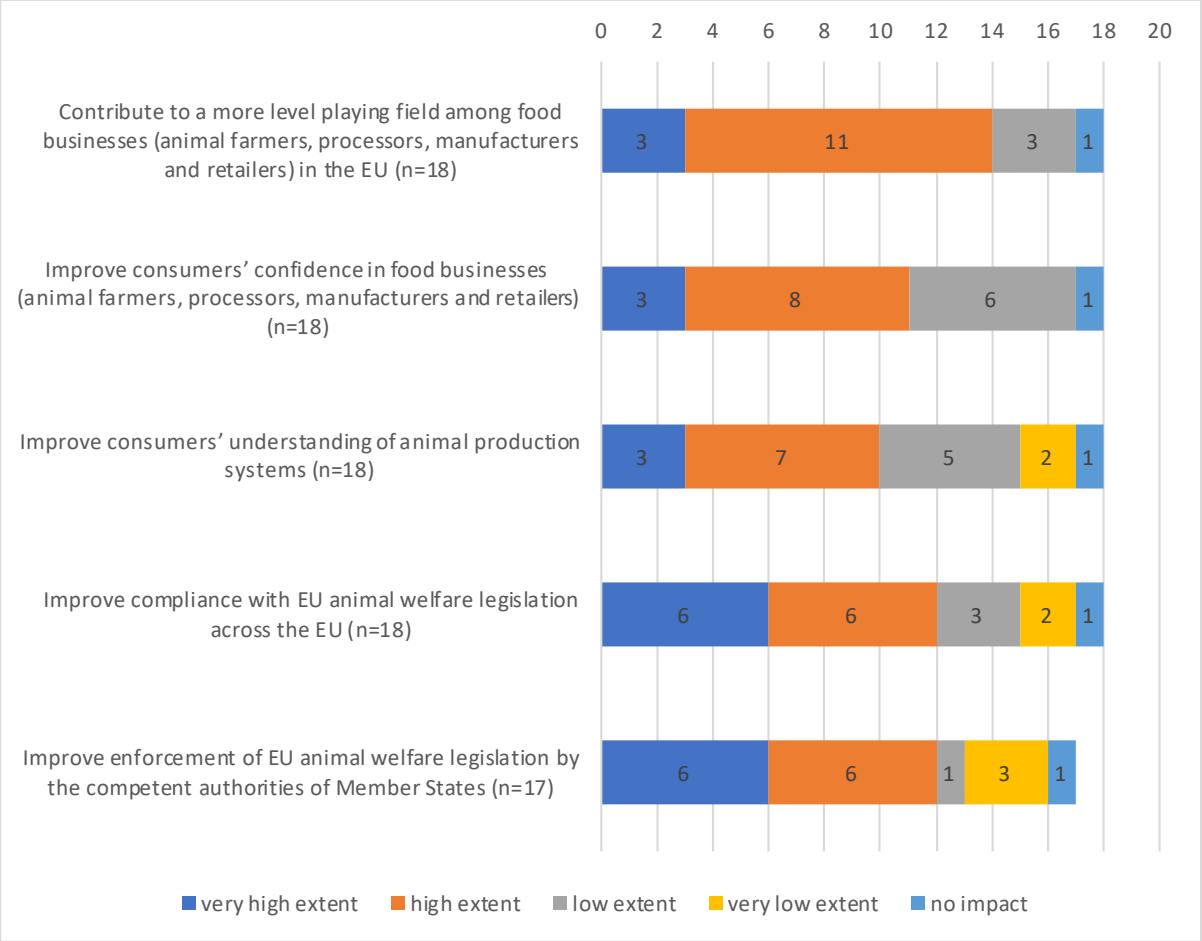
Only few respondents answered this question. 6 respondents (i.e. 25%) did not provide an answer and 11 (i.e. 46%) indicated that they had never measured consumers' understanding of the relevant production systems.

Among the systems who responded, Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk and Disciplinare di etichettatura volontaria delle carni di pollame mentioned that the impact had been positive and very positive, respectively, although none of them indicated the reasons supporting this conclusion.

Section F – Potential impact of an EU animal welfare label

Q: Should the EU create a mandatory AW label that would apply across species in the EU, to which extent would it have the following impacts?

Figure A.18. QF1a. Should the EU create a mandatory AW label that would apply across species in the EU, to which extent would it have the following impacts?



As shown in Figure A.18, the respondents' opinions on the possible impacts deriving from the introduction of an EU-wide mandatory label that would apply across species are quite diversified. Respectively 67% and 71% of the respondents consider that this policy scenario might contribute to improving the enforcement of EU AW legislation by MS as well as compliance with EU AW legislation across the EU to a very high and high extent. Conversely, for 24% and 17% of the respondents, respectively, these impacts are likely to occur to a very low extent or not at all.

According to 78% of the respondents, an EU-wide mandatory label would contribute to ensuring a greater level playing field among food businesses either to a very high extent or to a high extent. Moreover, 61% of the respondents consider that an EU mandatory label would also help improve consumers' confidence in food businesses either to a very high extent or to a high extent. However, 33% of the respondents consider the likelihood of this specific impact as low. Finally, 56% of the respondents indicated that a mandatory label would improve consumers' understanding of animal production systems as opposed to a 44% who indicated that this was likely to happen to a low extent, very low extent or not at all.

Some respondents indicated other possible impacts. According to the Spanish labelling system Bienestar Animal avalado por Anda, the impact of an EU-wide label could be negative in case the differences across the existing systems of production were not taken into account. However, the impact might be positive as long as the label foresees progressive levels of AW and is adapted to each production system. Conversely, according to two other Spanish systems (Compromiso Bienestar Animal PAWS, Animal Welfare Interovic Spain), the EU should refrain from introducing a mandatory label in this area as labelling systems must be adapted to the specific characteristics and realities of each MS. Finally, Sigill Kvalitetssystem AB mentioned that in some MS national legislation is higher than EU legislation and, for that reason, an EU mandatory label would only be beneficial to some national markets.

Q: Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact owners of existing AW labels?

Figure A.19. QF2a. Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact owners of existing AW labels?

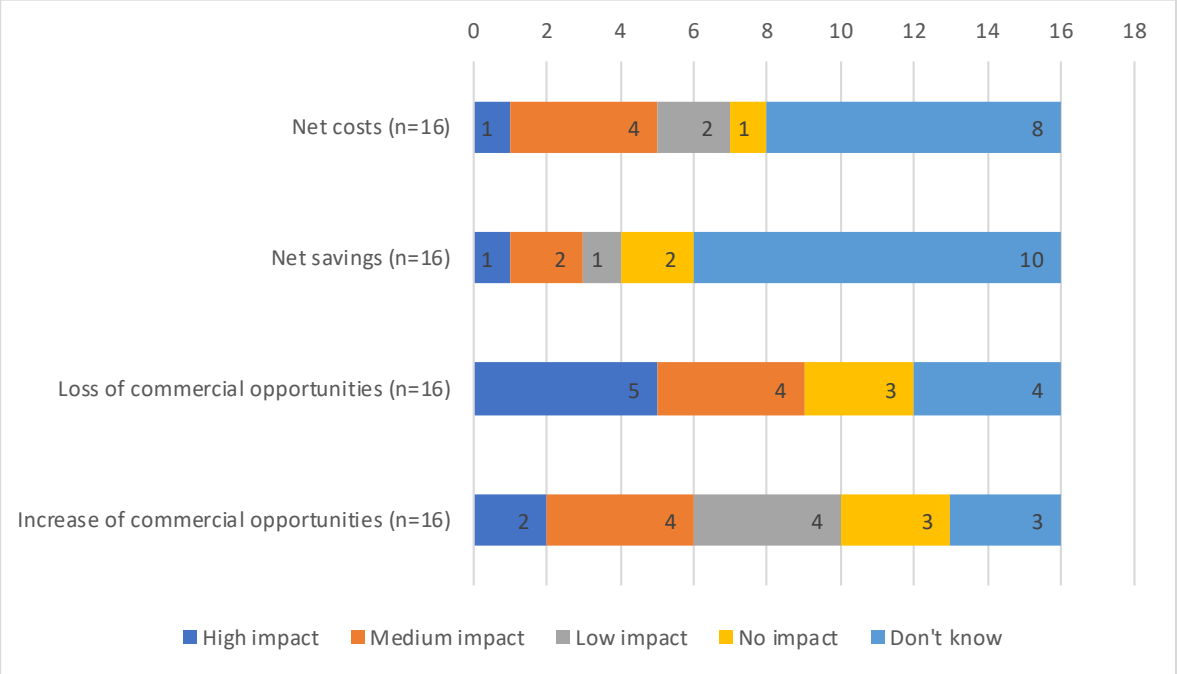


Figure A.19 shows to what extent a mandatory EU AW label that would apply across species would have specific impacts on existing owners/managers of AW labels. For a majority of respondents (31%) this scenario would generate a loss of commercial opportunities. Conversely, for 19% of the respondents it would have no impact on that front. Moreover, for two respondents (i.e. 13%) there might be even an increase in terms of commercial opportunities.

Fewer respondents expressed their opinion on the impact in terms of net costs and net savings. Overall, in this regard opinions differ. 5 out of the 8 respondents (i.e. 62%) consider that an EU AW label applied across species would have a high (n=1) or a medium impact (n=4) on net costs, whereas 3 of 6 respondents (i.e. 50%) consider that would have a high (n=1) or a medium impact (n=2) on net savings. Conversely, 1 and 2 respondents, respectively, indicated that an EU label would have no impact on the net costs and net savings of existing AW labels.

Q: Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact food businesses (farmers, processors, manufacturers and retailers) using existing AW labels?

Figure A.20. QF2b.Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact food businesses (farmers, processors, manufacturers and retailers) using existing AW labels?

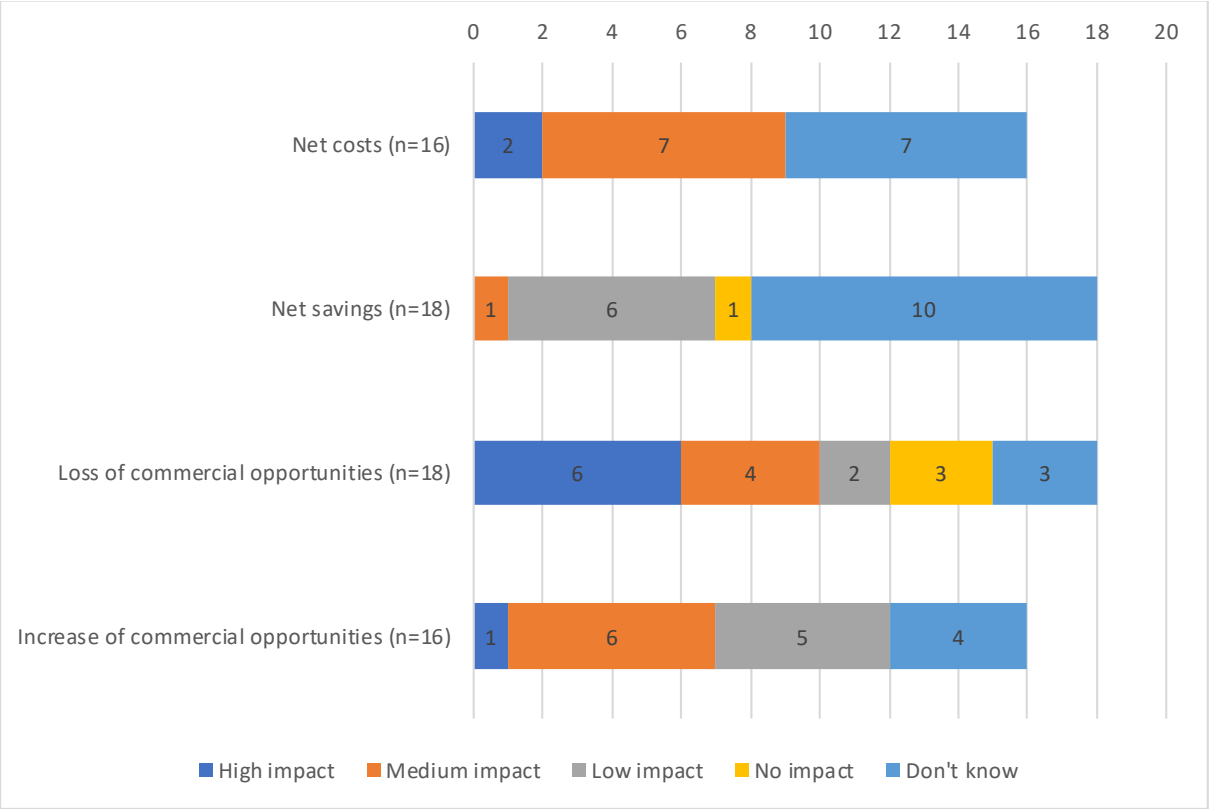


Figure A.20 shows to what extent, in the opinion of the respondents, the introduction of a mandatory EU AW label would impact food businesses using the existing AW labels. For 33% of the respondents this scenario would have a high impact in terms of loss of commercial opportunities for food businesses using existing AW labels. Only one respondent (i.e. 6%) considers that such a label might increase commercial opportunities for food businesses.

Fewer respondents expressed their views on the impact of an EU AW label in terms of net costs and net savings. 2 of the 9 respondents (i.e. 22%) consider that such a label would have a high impact on net costs for food businesses. Conversely, 6 of 8 (i.e. 75%) respondents consider that the impact on net savings for food businesses would be low.

Q: Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact owners of existing mixed labels (i.e. labels incorporating AW and other dimensions such as sustainability, authenticity, quality, traceability, etc.)?

Figure A.21. QF2c.Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact owners of existing mixed labels (i.e. labels incorporating AW and other dimensions such as sustainability, authenticity, quality, traceability, etc.)?

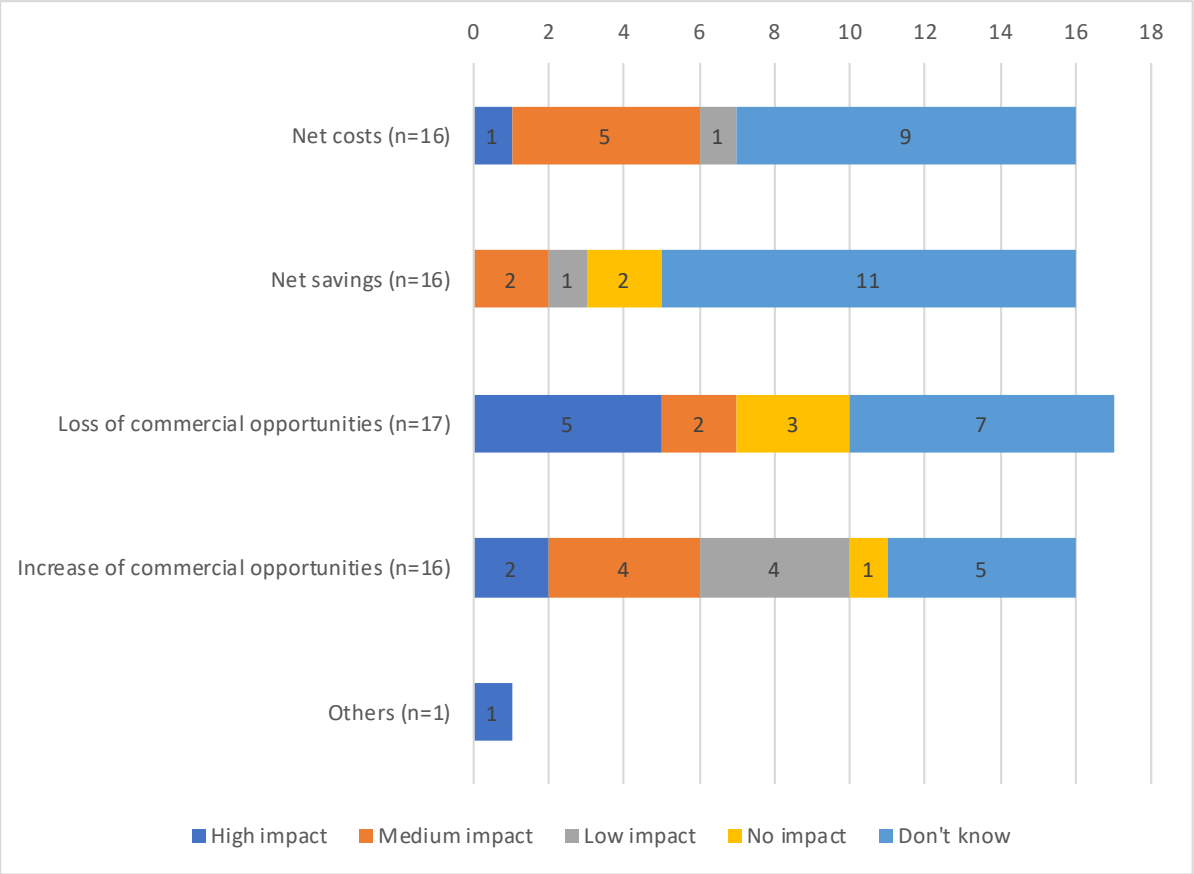


Figure A.21 shows to what extent, according to the views expressed by the respondents, a mandatory EU AW label would impact owners/managers of existing mixed labels. For 29% of the respondents this scenario would result in a considerable loss of commercial opportunities for the owners/managers of existing mixed labels. However, according to 3 respondents (i.e. 18%), an EU label would have no impact in terms of loss of business opportunities. 2 respondents (i.e. 13%) indicated that an EU label applying across species might even generate more commercial opportunities.

Fewer respondents expressed their views on the impact to be expected in terms of net costs and net savings. Among those who responded, only one respondent considers that an EU AW label would produce a high impact in terms of net costs for the owners/managers of existing mixed labels, while a majority consider that the impact is likely to be medium (31%). Conversely, in terms of impact on net savings, respondents are equally divided (40% vs. 40%) between those who consider that there would be no impact for the owners/managers of existing mixed labels or those who think that the impact would be medium.

Q: Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact food businesses (farmers, processors, manufacturers and retailers) using existing mixed labels?

Figure A.22. QF2d. Should the EU create a mandatory AW label that would apply across species in the EU, how would it impact food businesses (farmers, processors, manufacturers and retailers) using existing mixed labels?

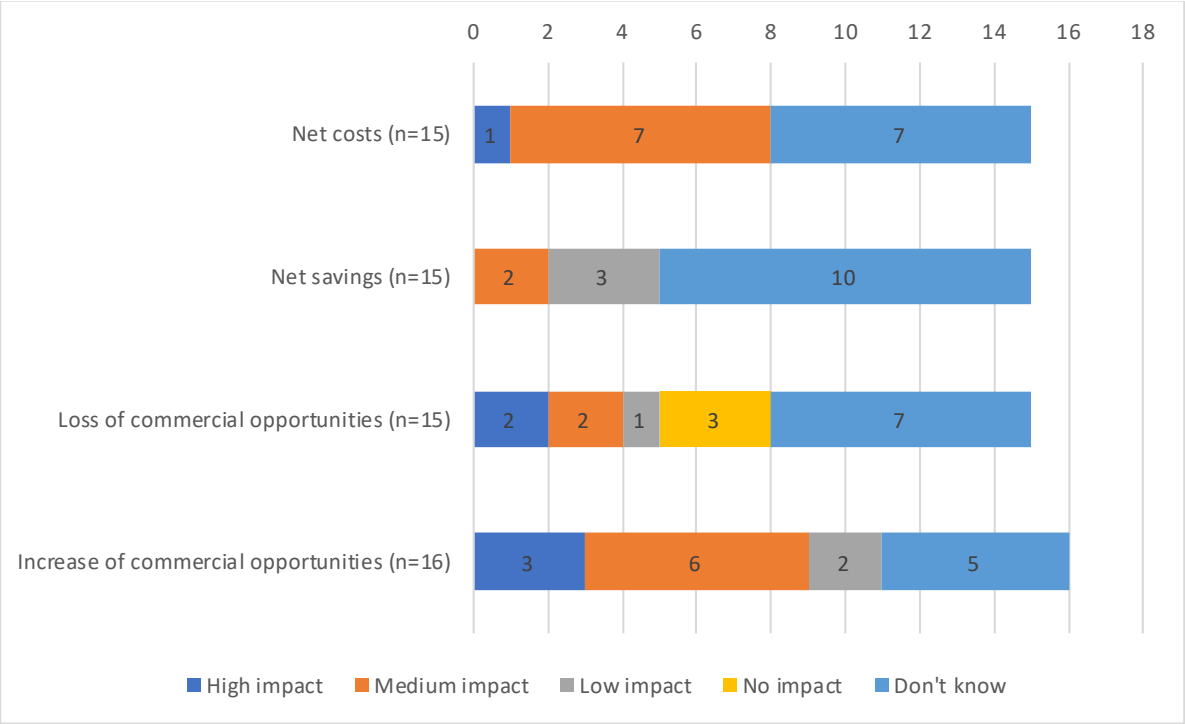


Figure A.22 shows to what extent, based on the answers provided by the respondents, a mandatory EU AW label would impact food businesses using existing mixed labels. 3 respondents (i.e. 19%) consider that a mandatory EU AW label might have a high impact in terms of increased commercial opportunities for food businesses using existing mixed labels. Conversely, 2 respondents (i.e. 13%) consider that an EU label might have a high impact in terms of loss of commercial opportunities for the food businesses considered here as opposed to 3 respondents (i.e. 20%) who predict no impact in that respect.

Finally, based on the responses provided, 8 respondents (53%) consider that an EU label would have either a high or a medium impact in terms of net costs for food businesses using existing mixed labels. Conversely, 5 respondents (33%) consider that an EU label would have either a medium or a high impact in terms of net savings.

A.8 AW labelling interview guide

General note to interviewers

Interviews with owners/managers of AW labelling systems consist of two sets of questions.

The first set of questions **(Section 1)** is of general nature and relevant for **all** labelling systems. However, before performing the interview, please **read carefully** the reply to the online survey of the labelling system(s): it has been provided to you in order to avoid repeating questions that the interviewee may have already answered.

The second set of questions **(Section 2)** is relevant for specific AW labelling systems whose replies in the survey are incomplete or need some clarification.

Section 1. Questions for all AW labelling systems (to be translated by interviewers, if need be) (based on and adapted from the critical evaluation framework by More et al. 2017)

A. General questions about your labelling system

1. What have been the primary drivers for the development/establishment of your labelling system (e.g. societal concerns, consumer demand, market differentiation etc.)?
2. What are the current primary goals of your labelling system? *(Only for well-established systems*) Have these goals evolved over time? Why?
3. What is the broader context (e.g. commercial, cultural) in which your labelling system operates today?
4. What are the **primary beneficiaries** of your labelling system (e.g. consumers, farmers, other food operators, animals) and which are the benefits they receive from the implementation of the system? Are those benefits and the costs for the implementation of the labelling system **equitably shared** across concerned stakeholders? (*see also questions 10 and 11 on costs*)

Effectiveness

5. Can you please elaborate more on the source(s) of the scientific evidence that underpins your labelling system? Are they national or international?
6. Does your system evaluate actual improvements in AW (*outputs-based measures*) in addition to what is being done to guarantee AW (*inputs-based measures*)? If so, how?
7. Is the functioning and/or the performance of your labelling system subject to **regular review?** How is this done?

Note to interviewers: *Please note that this question refers to the overall governance of the labelling system and not to the review of the standard for which most systems have provided an answer in the survey.*

8. Are there strategies, procedures or facilities in place to support **participation in the labelling system** by food operators? If so, which ones?
9. Are there strategies, procedures or facilities in place to support **continuous improvements** by food operators participating in the labelling system? If so, which ones?

Efficiency

10. How are the implementation costs of the labelling system allocated?
11. Would you be able to provide an indication of the **additional average costs** incurred by farmers, other food operators and consumers whenever compliance with the standard underpinning the system is ensured?

Note to interviewers: *for this question please consider incremental costs in case of multi-tier labels.*

12. Is your labelling system linked to **existing auditing requirements** to minimise duplication of efforts by food operators participating in the system?

13. Does your labelling system work in synergy with **existing efforts to improve AW** at national, regional or sectoral level? If so, how?
14. Does your labelling system have linkages with **ongoing research efforts** in the field of AW at national and/or international level? If so, please provide some examples.

Transparency

15. Is there a **regular reporting** about e.g. activities, performance, statistics etc. of your labelling system? If so, who has access to those reports (e.g. only the governing bodies of the system, food operators participating in the system, the general public etc.)?
16. How are food operators kept informed about the planned/ongoing review of existing standards or the development of a new one (e.g. for a new species)?
17. Are there strategies or procedures to address potential **conflicts of interest** in the context of the key activities of your labelling system (e.g. standard-setting process, auditing etc.)?
18. Can decisions taken by your organisation and that affect food operators (e.g. infliction of sanctions, label withdrawal/refusal) be appealed?

Section 2. Questions for specific AW labelling systems

(*only Tierschutzlabel*)

1. How many food businesses, in total, are currently affiliated to your labelling system?
2. According to your survey response, there are 200 products currently certified against the animal welfare standard underpinning the label. What have been the impacts of the label on food businesses using it? And on consumer confidence towards food businesses using it? And on consumers understanding of the relevant production systems?

(*only Tierschutz-kontrolliert*)

1. What is the year of establishment of the labelling system?
2. In your reply to the survey, you indicated that almost all retailers in Germany are currently affiliated to your labelling system. Can you give an estimated number of how many they are?

(*only Weidemelk)*

1. To what extent does the standard underpinning your labelling system take into account the evolution of scientific knowledge on AW? Are there procedures in place so that such evolution is promptly reflected in the design or application of the standard?
2. In your reply to the survey, you indicated that the audits are announced. How long in advance of the visit is the food business usually informed?
3. Also, can you please explain how are the non-compliances responded to?

(*only Label Rouge)*

1. To what extent does the standard underpinning your labelling system take into account the evolution of scientific knowledge on AW? Are there procedures in place so that such evolution is promptly reflected in the design or application of the standard?

(only *Dyrenes Beskyttelse*)

1. How many manufacturers are currently affiliated to your labelling system? Can you please provide an estimated number?

(*only Initiative Tierwohl)*

1. In your reply to the survey, you indicated that your label is "single tier/one level" and mentioned that this approach "seemed most reasonable". Can you please explain why?
2. In your reply to the survey, you have indicated that almost all leading retailers in Germany are currently affiliated to your labelling system. Can you give an estimated number of how many they are?

(*only Welfair*)

1. Can you please confirm that the geographical coverage of your label is currently European (Portugal & Spain) and this year it will become international?

(only Bienestar Animal avalado por Anda)

1. Do you have any processors, manufacturers and retailers affiliated to your labelling system?
2. How many food businesses are currently affiliated to your labelling system?
3. How many products are currently certified against the AW standard underpinning the label?
4. In your opinion, what have been the impacts of the label on consumer confidence towards food businesses using it and on consumers understanding of the relevant production systems?

(*only Beter Leven keurmerk*)

1. Can you please explain briefly how your multi-tier/level label work?
2. Do you have manufacturers currently affiliated to your labelling system? How many?
3. How many food businesses, in total, are currently affiliated to your labelling system?

(*only Etiquette Bien-Être Animal*)

1. How many food businesses, in total, are currently affiliated to your labelling system?
2. Can you please indicate an estimated number of products currently certified against the animal welfare standard underpinning the label?

A.9 List of AW labelling interviews performed

Labelling system	MS of establishment	Website
Anbefalet af Dyrenes Beskyttelse	DK	https://www.dyrenesbeskyttelse.dk/en
Bedre dyrevelfærd	DK	https://www.foedevarestyrelsen.dk/Leksikon/Sider/Fakta-om-dyrevelfaerdsmaerket.aspx
Beter Leven keurmerk	NL	https://beterleven.dierenbescherming.nl/
Bienestar Animal avalado por ANDA	ES	http://www.avialter.com/1/bienestar_avalado_por_anda_197465.html
Etiquette Bien-Être Animal	FR	http://www.etiquettebienetreanimal.fr/
Initiative Tierwohl	DE	https://initiative-tierwohl.de/
KRAV	SE	https://www.krav.se/en/
Label Rouge	FR	https://www.labelrouge.fr/
Tierschutzlabel "Für Mehr Tierschutz"	DE	https://www.tierschutzlabel.info/home/
Weidemelk/Weidemilch/Lait de Paturage/Meadow Milk	NL	https://www.weidemelk.nl/nl/voorwaarden.html
Welfair	ES	http://www.animalwelfair.com/en/

A.10 Evolution of on-farm animal welfare practices for the studied species

This Annex provides for a historical overview of the evolution of on-farm AW practices in the EU for the species studied during the research, namely laying hens, broilers, pigs, calves and, in the context of Directive 98/58/EC, cattle (for all farming purposes), sheep and rabbits. Besides providing a general characterisation of the relevant production system, for each animal species the overview discusses the following topics:

- Main AW concerns for the species studied;
- Implementation of AW practices through EU legislation; and
- Promotion of AW practices through self-regulation.

It should be noted that the level of quantitative and qualitative information for the various species analysed varies significantly from one case to another, being more limited in particular for the species covered by Directive 98/58/EC (i.e. cattle, sheep and rabbits).

1. Laying hens

AW concerns for the species studied

The conditions in which laying hens are housed can significantly affect their welfare. It is common knowledge that conventional cages (i.e. non-enriched) cause several welfare problems to those animals (e.g. physical problems as low bone strength; inability to perform some natural behaviours including nesting, perching, foraging and dust bathing, among others).[221] On the other hand, enriched cages systems constitute a threat to bird welfare insofar as they impose restrictions on some high priority behaviours (e.g. foraging, dust bathing). In non-cage systems (e.g. barns, free range) the threats to welfare of birds are bone fractures, feather pecking and cannibalism, whereas in free-range systems, there are additionally health and predation risks.[222]

Implementation of AW practices through EU legislation

In 1970s, most laying hens were housed in conventional cages, also known as battery cages. The approval by the then European Economic Community of the European Convention for the Protection of Animals Kept for Farming Purposes in 1978[223] was the main driver for the development of specific legislation on the welfare of laying hens.[224] As a result, Council Directive 88/166/EEC[225] was adopted in 1988, laying down minimum standards for the protection of hens in battery cages. This directive specified that from January 1988 all newly built cages and all cages brought into use for the first time had to provide at least 450 cm^2 per hen and other requirements, while these standards were to apply to all cages by January 1995. All MS of the then European Economic Community had to transpose the directive into national regulations. However, some countries such as Denmark and Sweden, which already had stricter requirements in place, maintained them.[226]

Subsequently, in 1999 the EU adopted Council Directive 1999/74/EC, currently in force, which repealed Council Directive 88/166/EEC as of 1 January 2003.[227] The former directive laid down minimum standards for the protection of laying hens (except breeding laying hens and systems with less than 350 laying hens, which fell under the scope of Directive 98/58/EC). In particular, the directive set out provisions for three different farming systems, namely:

- Non-enriched cages (subject to an EU ban as of 2012);
- Enriched cages; and
- Alternative systems.

In enriched cages hens have at least 750 cm^2 of cage area and 15 cm perch per hen. In alternative systems, such as barn systems and free range, stocking density must not exceed 9 laying hens per

m^2, with at least one nest for every 7 hens and adequate perches. In all systems, hens must have a nest, perching space, litter to allow pecking and scratching and unrestricted access to a feed trough.

Besides that, the directive also established that all egg production units had to be registered with the competent authorities of EU MS and bear a unique identification number that could be used to trace eggs back to their farm of origin. To prevent feather pecking and cannibalism, MS could allow beak trimmings under specific conditions. However, some countries have banned this practice (Finland, Sweden, Denmark, Germany, and the Netherlands).[228]

As EU legislation concerning the welfare of laying hens lays down minimum standards, MS may adopt more stringent rules provided they are compatible with the provisions of EU Treaties. In this context, some MS went beyond EU requirements and adopted more stringent provisions: for instance, in Luxembourg and Austria enriched cages are prohibited.[229] In Germany, a general ban on enriched cages will come into force in 2025 (in exceptional cases the use of these cages will be allowed until 2028). In Wallonia (Belgium), a ban on cages for laying hens will come into effect in 2028. Also, in Slovakia, the government and industry signed a memorandum to end the use of cages for hens by 2030, while the lower house of the Parliament of Czechia voted to ban cages from 2027.[230] The ban of beak trimming, as mentioned before, is already a reality in some MS.[231]

Promotion of AW practices through self-regulation

In some MS, farm assurance schemes or private standards also contribute to AW requirements being met. While some of them reflect EU legislation, others have more stringent requirements for AW than EU provisions.[232] This is the case of private labelling systems such as Label Rouge in France[233] and Beter Leven keurmerk in the Netherlands.[234]

Farming systems of laying hens in the EU

In 2020, more than 371 million laying hens were farmed in the EU (excluding the UK).[235] They were raised in four different systems: enriched cages, barns, free-range and organic systems (under Regulation (EU) 2018/848).[236] Approximately 51.9% of the laying hens were housed in alternative housing systems (34% in barns, 11.9% in free-range and 6.1% in organic systems), while the remaining 48.1% in enriched cages (as shown in Table A.3).[237]

Table A.3. Number of laying hens by farming method (maximum capacity) according to notifications under Commission Implementing Regulation (EU) 2017/1185, Art. 12(b) – Annex III.10, in 2020.

2020			% by farming method in respective country			
MS	Total laying hens in MS	% MS/EU	% enriched cages	% barn	% free range	% organic
DE	56 260 281	15.1%	5.6%	60.1%	21.3%	13.0%
PL	50 150 219	13.5%	81.0%	13.7%	4.4%	0.8%
FR **	48 255 709	13.0%	54.1%	11.7%	23.0%	11.2%
ES	47 129 970	12.7%	77.6%	13.0%	8.0%	1.4%
IT	41 047 911	11.0%	42.0%	49.5%	3.7%	4.9%
NL	33 126 050	8.9%	15.2%	60.6%	17.8%	6.4%
BE	10 735 941	2.9%	37.2%	43.3%	13.6%	5.9%
RO	8 741 379	2.4%	58.8%	33.0%	6.6%	1.7%

2020			% by farming method in respective country			
MS	Total laying hens in MS	% MS/EU	% enriched cages	% barn	% free range	% organic
PT	8 732 646	2.3%	86.2%	10.7%	2.8%	0.4%
SE	8 725 649	2.3%	5.5%	76.1%	3.7%	14.7%
HU	7 501 107	2.0%	71.0%	28.0%	0.7%	0.3%
AT	7 119 691	1.9%	0.0%	61.0%	26.5%	21.5%
CZ	7 111 571	1.9%	67.6%	30.9%	1.0%	0.4%
BG	5 505 594	1.5%	71.0%	25.3%	3.6%	0.0%
EL**	4 616 611	1.2%	77.3%	12.2%	5.1%	5.4%
FI	4 504 894	1.2%	50.5%	39.3%	3.2%	7.1%
DK	3 767 997	1.0%	14.6%	58.3%	9.6%	17.4%
IE **	3 651 519	1.0%	51.5%	1.1%	43.8%	3.7%
LV	3 255 160	0.9%	75.2%	21.5%	3.0%	0.2%
SK	3 154 986	0.8%	76.7%	21.0%	2.1%	0.2%
LT	2 837 711	0.8%	83.2%	15.9%	0.3%	0.6%
HR	2 316 358	0.6%	61.9%	34.1%	3.6%	0.4%
S I	1 450 580	0.4%	24.3%	55.1%	18.1%	2.6%
EE	1 122 167	0.3%	81.7%	9.5%	4.0%	4.7%
CY	535 865	0.1%	71.4%	17.2%	9.6%	1.8%
MT	360 585	0.1%	99.4%	0.6%	0.0%	0.0%
LU	103 720	0.0%	0.0%	75.6%	0.0%	24.4%
TOTAL	371 821 871	100%	48.1%	34.0%	11.9%	6.1%

** 2019 Data | Source: EC, Eggs, Market Situation Dashboard, 2021

According to the latest information available, 74.2% of laying hens are concentrated in only six MS: Germany, Poland, France, Spain, Italy and Netherlands. In Germany, the Netherlands and Italy alternative housing systems are the main systems used. Conversely in Poland, Spain and France the main housing systems used are enriched cages.[238] Overall, there is a wide variability of housing systems used across the EU, ranging from 99.4% of enriched cages in Malta to 5.6% in Germany or none in Luxembourg and Austria. The use of enriched cages varies significantly by MS: some countries/national sectors have invested heavily in these systems, while others have chosen to invest in the transition to cage-free systems. Enriched cages are still dominant in most Eastern and Southern MS, whereas non-cages systems are more used in Northern and Western MS.[239] [240]

Other than that, there is no information available singling out differences in AW practices across MS that still practice cage-rearing. A new cycle of EC audits with a focus on rearing of laying hens commenced in 2021 and may contribute to shed some lights in that respect.[241]

Conclusion

While systematic evidence on the welfare of laying hens in Europe is not available to assess how that has improved over time, the notable changes to housing conditions for hens (i.e. the ban on battery

cages and growing proportion of loose housing solutions, in particular organic and free-range production) can be assumed to have contributed to better AW.

2. Broilers

Characterisation of the EU production system

The broiler chicken is one of the commonest farmed animals in the EU.[242] Broilers are reared mainly in intensive farming systems. These systems are characterised by high stocking densities, very large holdings, indoor rearing and the use of fast-growing breeds.[243]

AW concerns for the species studied

Intensive farming methods often negatively affect bird welfare. The broilers welfare problems are related to genetic factors and to environmental/management factors.[244] Genetic selection has modified a variety of metabolic and behavioural characteristics in broilers that have negative impacts on their welfare; common problems are contact dermatitis, leg problems, ascites, and sudden death syndrome.[245] Environmental/management factors such as stocking density and litter quality, poor lighting and barren environment also affect AW, causing problems such as heat stress, foot pad burn, hock burn and breast blisters, leg disorders and respiratory problems.[246]

Implementation of AW practices through EU legislation

In 1995, the Standing Committee of the European Convention for the Protection of Animals kept for Farming Purposes adopted a specific Recommendation concerning domestic fowl (*Gallus gallus*), which includes additional provisions for poultry kept for meat production [247]

Later on, in 1998 the EU adopted Council Directive 98/58/EC on the protection of animals kept for farming purposes. The directive laid down minimum standards for the protection of animals bred or kept for farming purposes including provisions on housing, food, water, and care appropriate to the physiological and ethological needs of the animals. These rules are based on the European Convention for the Protection of Animals kept for Farming Purposes.

In 2000, the Scientific Committee on Animal Health and Animal Welfare (SCAHAW) published a Report on the Welfare of Chickens Kept for Meat Production concluding that «*the fast growth rate of current broiler strains is not accompanied by a satisfactory level of welfare including health*», and «*the problems of high stocking rates are less in buildings where good indoor climatic conditions can be sustained*».[248]

In 2007, the EU adopted Council Directive 2007/43/EC. This directive laid down minimum rules for the protection of chickens kept for meat production, and addresses welfare problems related to environmental and management factors.[249] It applies to holdings with more than 500 chickens, setting out requirements for:

- Keeping of chickens, including maximum stocking density, housing facilities; and
- Monitoring and follow-up at slaughterhouse of welfare indicators to help identify poor welfare in farm holdings and take appropriate actions.

The directive specifies a maximum stocking density of 33 kg/m^2, although MS can derogate from it allowing higher density up to 39 kg/m^2, if the producer complies with the additional measures set in Annex II of the directive. In addition, if the producer complies with the additional requirements set in Annex IV of the same directive, MS may allow a stocking density up to 42 kg/m^2. The requirements applicable to holdings cover drinkers, feeding, lighting, litter, noise, ventilation and heating, inspection, cleaning, record keeping and surgical interventions. The directive foresees compulsory training for chicken keepers and specific requirements for that training. It also

encourages MS to promote the development and distribution of guides on good management practices on broiler farms.

In most MS national legislation is the result of the direct transposition of the directive. However, Austria, Denmark, Finland, Germany, the Netherlands, and Sweden have introduced stricter requirements than those set out by the directive. Germany is the only MS where housing requirements go beyond those set out by the directive. In Austria the maximum stocking density is below 33 kg/m^2 and stocking density derogations are not applied. In Sweden the maximum stocking density is 20 kg/m^2 with a derogation up to 36 kg/m^2. Inspections and monitoring requirements go beyond the provisions of the directive in Denmark, Finland and Germany.[250]

Promotion of AW practices through self-regulation

Farm assurance schemes or private standards covering broilers' welfare are also used in some MS. They also contribute, in some way, to ensuring that the overall welfare of those animals is guaranteed. While some of such schemes/standards mirror EU rules or additional national legislation, in other cases stricter requirements are applied.[251] This is the case of private AW labelling systems such as Etiquette Bien-Être Animal and Label Rouge in France, Tierschutzlabel "Für mehr Tierschutz"' in Germany, and Beter Leven keurmerk in the Netherlands.[252]

Conclusion

While systematic evidence on the welfare of broilers in Europe is not available to assess how that has improved over time, the reductions in densities, improvements in litter quality and overall modernisation of housing facilities can be said to have contributed some improvements to the welfare of those animals. Nonetheless, significant welfare issues (high densities, poor air quality, problems associated with rapid growth breeds) remain unaddressed.

3. Pigs

Characterisation of the EU production system

Pigs represent the largest livestock category in the EU.[253] In 2020, approximately 146 million pigs were farmed across the EU market.[254] Production systems vary widely in and between MS, both in terms of farming methods and size of farms: from conventional intensive production to extensive organic farming, and from industrial installations with thousands of animals to small holdings with only one or two pigs.[255]

AW concerns for the species studied

The welfare of pigs is compromised by periods of confinement in cages, barren environments and mutilations. The lack of environmental stimulation deprives pigs of the possibility to express their natural behaviour (rooting), which causes frustration leading to harmful behaviour.[256] In case of sows kept in pens that do not allow turning around, normal social interaction, lack of or no appropriate foraging or nest-building material, induce welfare problems like stress, frustration and leg pain, among other problems. Boars are generally housed individually and their welfare problems are related to reduced space, lack of stimulation, poor floor conditions, leading to stress, frustration, and leg pain.[257]

Implementation of AW practices through EU legislation

The first EU pig welfare legislation to be introduced was Council Directive 91/630/EEC.[258] This legislation was passed primarily because of the industrialisation of the livestock sector and evidence of poor welfare in some farms.[259] The directive laid down minimum standards for the protection of pigs confined for rearing and fattening and included general and specific provisions for various categories of pigs. It required pigs to be given straw or other suitable materials or objects in addition to banning routinely tail docking and tooth clipping, unless for cases where there was evidence of injuries in other pigs resulting from not carrying out those procedures.

In 1997, the Standing Veterinary Committee (SVC) published a report on the welfare of intensively kept pigs. This report contained information on the biology and behaviour of pigs, on production systems and on health and welfare of those animals.[260] It also listed 88 recommendations on how pig welfare could be improved taking in account relevant socio-economic implications.[261]

Later on, in 1998 Council Directive 98/58/EC concerning the protection of animals kept for farming purposes was adopted establishing harmonised provisions applying to all farmed animals in relation to construction requirements for housing, insulation, heating and ventilation conditions, equipment inspection and inspection of livestock.

In 2001, Council Directive 91/630/EEC was amended twice by:

- Council Directive 2001/88/EC,[262] which banned the use of tethers for sows and guilts as of 1 January 2006 and introduced group-housing of sows and guilts, amongst other aspects; and
- Commission Directive 2001/93/EC,[263] which aimed at ensuring full alignment of the legislation with scientific progress.

In 2007, EFSA released a scientific report on animal health and welfare in fattening pigs, in relation to housing and husbandry, which contained an update of the scientific information presented in the previous SVC Report, in addition to a risk assessment. This report was one of the five reports that the EU risk assessor issued on the welfare of pigs during the period 2004-2007.[264]

In 2008 Council Directive 91/630/EEC underwent a major revision, which resulted in the adoption of Council Directive 2008/120/EC (the "pig directive"). The directive applies to all categories of pigs laying down minimum standards for their protection. It set out requirements for accommodation, feed and environmental conditions, including the living space available per animal, the quality of the floorings, the permanent access to fresh water and to materials for rooting and playing as well as levels of light and noise.

The directive requires that all pigs are to be raised in groups, except farrowing sows and boars. Since 1 January 2013, pregnant sows and gilts must be kept in groups within four weeks after the service until one week before expected farrowing.

The directive also laid down rules concerning painful operations such as castration, tail docking and the elimination of corner teeth. In doing so, it reiterated that routine tail docking and the elimination of corner teeth were prohibited, unless when there is evidence of injuries in other pigs. The directive also foresees training and competence on welfare issues for farm staff.

The surgical castration of male piglets – a practice aimed at removing an unpleasant odour known as "boar taint" and preventing undesirable sexual and aggressive behaviour in pigs – has become a significant AW concern.[265] This practice was common in many EU countries, although some MS already applied different alternatives to surgical castration, such as rearing of entire males or vaccination to reduce boar taint.[266] In 2010, upon the invitation of the EC and of the Belgian Presidency of the EU, representatives of European farmers, meat industry, retailers, scientists,

veterinarians and AW NGOs met in Brussels to discuss the issue of pig castration and its possible alternatives, including putting an end to this practice. In December 2010, those stakeholders signed the European Declaration on alternatives to surgical castration of pigs. The declaration foresees that «*[a]s a first step, from 1 January 2012, surgical castration of pigs, if carried out, shall be performed with prolonged analgesia and/or anaesthesia with methods mutually recognised. As a second step and in the long term, surgical castration of pigs should be abandoned by 1 January 2018*».[267]

Since 1994, routine tail docking has been banned in the EU. However, since then there have been several problems with the implementation and enforcement of this ban in most MS together with the provision of enrichment materials. On the other hand, in 2003 Finland banned tail docking, while Sweden had introduced a total ban already in 1988.[268]

In 2016, the EC issued Recommendation (EU) 2016/336 on the application of Council Directive 2008/120/EC as regards measures to reduce the need for tail-docking.[269] This recommendation encourages MS to make sure that farmers carry out a risk assessment of factors that may potentially lead to tail-biting and take the necessary corrective measures. It also specifies the characteristics of the enrichment materials. The accompanying Staff Working Document provides detailed indications on the types of materials that can be used for enrichment purposes as well as on other factors involved in the prevention of tail-biting (e.g. thermal comfort, air quality, diet, etc.). The document also suggests indicators that can be used to assess on-farm situation.[270]

In most MS national legislation reflects the provisions of EU law, although, in some countries, it goes beyond that. In particular, the Netherlands have reduced the period allowed for individual housing around insemination from four weeks to four days.[271] In Sweden, sows and gilts should always be housed in groups, except farrowing sows and sows one week before farrowing. Also, Sweden has provisions in place regulating minimum eating space per pig, depending on the weight and size of the animals in addition to stricter requirements concerning light and noise, among others.[272]

Promotion of AW practices through self-regulation

There are some farm assurance schemes or private standards in place in several MS that contribute to the overall welfare of pigs in synergy with EU legislation. Some of these schemes/standards are in line with EU legislation whilst others go beyond it.[273] This is the case of several AW labels such as Tierschutzlabel "Für Mehr Tierschutz" and Initiative Tierwohl in Germany, Beter Leven keurmerk in the Netherlands and Dyrevelfærdshjertet in Denmark.[274]

Conclusion

While systematic evidence on the welfare of pigs in Europe is not available to assess how that has improved over time, some changes can be associated to improvements in welfare, in particular the grouping of sows and a number of initiatives to do away with castration or tail-docking. Nevertheless, the condition of pigs in their overwhelming majority remains characterised by confined housing, high densities, and routine mutilations.

4. Calves

Characterisation of the EU production system

The ways of keeping calves vary considerably from country to country and between breeds. Most dairy calves are separated from their dam at birth and artificially fed whereas calves from beef breeds generally suckle their dam.[275]

AW concerns for the species studied

Since 1960 there were public concerns on the poor welfare of calves reared for veal production, due to an inadequate diet and the restricted confinement of these animals. During the 1970s and 1980s several studies provided evidence of severe health and welfare problems (e.g. anaemia, rumen disorders, abnormal behaviour, discomfort and disturbed resting behaviour) in closely confined calves.[276]

Implementation of AW practices through EU legislation

In 1991, the EU adopted Council Directive 91/629/EEC.[277] This directive laid down minimum standards for the protection of calves, namely by setting requirements on management, feeding, housing but still allowed the use of crates of a minimum size.

In 1993, the Standing Committee of the European Convention for the Protection of Animals kept for Farming Purposes adopted Appendix C to the Recommendation concerning cattle, which includes special provisions for calves.[278] This recommendation stated, among others, that husbandry systems should minimise the risk of injuries and disease while allowing all biological needs of the animals to be met, including through the provision of adequate feeding and by avoiding too restricted areas and lack of social contact.

In 1995, the SVC adopted a report on the welfare of calves, which was followed in 1997 by the adoption of Directive 97/2/EC[279] amending Directive 91/629/EEC. This directive established that from 1 January 1998 no calves could be confined in individual pens after the age of eight weeks while defining minimum dimensions for individual housing till 8 weeks of age and for group housing of older calves.

In 2006, EFSA published a scientific opinion on the risks of poor welfare in intensive calf farming systems, which represented an update of the previous 1995 SVC Report and provided an additional risk assessment perspective. Overall, while the conclusions of the previous SVC report remained valid, EFSA opinion indicated that new research and studies had singled out additional elements to consider in the context of the welfare of calves, including in relation to: [280]

- Housing (e.g. space and pen design, floor and bed materials);
- Dehorning; and
- Castration (e.g. details of anaesthesia and analgesia for these procedures).

Council Directive 2008/119/EC laying down minimum standards for the protection of calves was adopted in 2008. The directive, amongst others, gave more prominence to the provisions on accommodation standards, namely:

- The ban of confined individual pens after the age of eight weeks; and
- The minimum dimensions for individual pens and for calves kept in group.

The directive also required that calves were not to be kept in permanent darkness, tethered (except under specific conditions), and had to be fed with an appropriate diet in accordance with their physiological needs.

As EU legislation concerning the welfare of calves lays down minimum standards, MS may adopt more stringent rules provided that these are compatible with EU law. Indeed, some national legislation on welfare of calves goes beyond EU law, as it is the case in Germany (e.g. additional requirements on accommodations)[281] and Sweden (e.g. additional requirements for suitable bedding).[282]

Promotion of AW practices through self-regulation

There are some farm assurance schemes or private standards in place in several MS which contribute to promoting the welfare of calves. Some of these schemes/standards are in line with EU legislation while others go beyond the minimum standards set by it.[283] Examples of private AW labels that cover calves include the public labelling system Bedre dyrevelfærd in Denmark and Beter Leven keurmerk in the Netherlands.[284]

Conclusion

While systematic evidence on the welfare of calves in Europe is not available to assess how that has improved over time, important changes to housing conditions (i.e. requirements for group housing beyond 8 weeks and conditions set for individual housing in cages) can be said to have improved the welfare of calves over time.

5. Cattle

5.1. Beef Cattle

Characterisation of EU production system

There is a wide variety of beef farming systems in the EU as production systems developed to suit the varied geographical, climatic, economic and societal needs of different regions.[285] Thus, the production systems vary significantly by MS, ranging from intensive indoor fattening systems to extensive outdoor productions.[286]

AW concerns for the species studied

In 2001, the SCAHAW adopted an opinion on the welfare of cattle kept for beef production upon request of the EC. According to that opinion, each production system presents specific welfare problems, however, there are some general measures that can be adopted to ensure the welfare of these animals, namely in relation to housing, feeding, management, training, breeding, mutilations and weaning.[287]

In 2012, EFSA published a scientific opinion about the welfare of cattle kept in farming systems for beef production, again upon request by the EC, to provide an update of the scientific evidence available in this area. In this opinion, the EU risk assessor identified as «*major welfare problems in cattle kept for beef production, the respiratory diseases linked to overstocking, inadequate ventilation, mixing of animals and failure of early diagnosis and treatment, digestive disorders linked to intensive concentrate feeding, lack of physically effective fibre in the diet, and behavioural disorders linked to inadequate floor space, and co-mingling in the feedlot*».[288] Therefore beef cattle may suffer from poor welfare mainly because of their intensive rearing systems, which are adopted in several MS.[289]

Implementation of AW practices through EU legislation

In the EU there is no specific legislation regulating the welfare of beef cattle older than six months. Protection of these animals falls under the provisions of Council Directive 98/58/EC. In addition, the Recommendation concerning cattle adopted by the Standing Committee of the European Convention for the Protection of Animals Kept for Farming Purposes in 1988 need to be observed.[290] Also in Sweden there are specific requirements for flooring, stocking density, daylight, access to pasture and other welfare-related aspects.

In most MS, there is no specific legislation for beef cattle older than six months of age either. Austria is one of the few countries with specific requirements for this species: Austrian law establishes minimum standards of welfare, particularly in relation to floor conditions and locomotion.[291]

Promotion of AW practices through self-regulation

There are some farm assurance schemes or private standards in place in few MS which currently contribute to the overall welfare of beef cattle. This is the case of AW private labels such as the public labelling system Bedre dyrevelfærd in Denmark and Beter Leven keurmerk in the Netherlands.[292]

Conclusion

Systematic evidence on the welfare of cattle in Europe is not available to assess how that has improved over time. Some initiatives have contributed to improving certain handling practices (e.g. tail-docking, dehorning), however important AW issues (housing conditions, feeding) remain unaddressed.

5.2. Dairy cows

Characterisation of the EU production system

There is a wide variety of dairy farms in the EU. This diversity in dairy farms is related to the differences in natural potential that exist across holdings as well as to the socioeconomic and regulatory context. Thus, farm and herd size, yields and types of farming vary significantly by country, ranging from outdoor farming in alpine areas to large specialised dairy farms in European North-western and Central MS.[293]

AW concerns for the species studied

Recent reports stress that welfare problems of dairy cows are still a serious issue today.[294] The most frequent problems include lameness, mastitis, reproductive problems, metabolic diseases, infectious disease, and longevity.[295] There are currently some practices in dairy farming – e.g. "zero-grazing" systems and high milk yields – that contribute to poor welfare of these animals. In zero-grazing systems animals have very limited or no access to pasture, which increases the risk of lameness, mastitis, hoof problems and ketosis, among others. Animals with high milk yield are subject to increased risk of suffering health disorders, liver abscess, laminitis and digestive problems.[296]

Implementation of AW practices through EU legislation

In the EU there is no specific legislation on the welfare of dairy cows older than six months other than Council Directive 98/58/EC concerning the protection of animals kept for farming purposes. In addition, the Recommendation concerning cattle adopted by Standing Committee of the European Convention for the Protection of Animals Kept for Farming Purposes in 1988 should be observed. This recommendation contains provisions on housing, management, stockmanship and inspection, among others, that could improve the welfare of the animals under exam.[297]

In 2015, the World Organisation for Animal Health (OIE) adopted specific standards for the welfare of dairy cows. These standards contain provisions on system design, environmental management and animal management practices.[298] While such standards are not binding, farmers are expected to "*take all reasonable steps*" to ensure cows' welfare. Also, as all EU MS are members of the OIE, they agreed with the standards for the welfare of dairy cows and should act accordingly.[299]

In the absence of species-specific requirements at EU level, some MS have passed specific legislation regulating husbandry of dairy cows (e.g. Sweden) or have regulated some aspects of it within their national AW legislation (e.g. Germany).[300]

Promotion of AW practices through self-regulation

Recently, in the EU several initiatives have been undertaken by different actors (e.g. farmers, dairies, official services, etc.) that impact, directly or indirectly, on the welfare of dairy cows. By way of an

example, in Austria rural development funds have been used for restructuring dairy farms promoting AW.[301] Also, there are some farm assurance schemes or private standards in some MS that contribute toward the welfare of these animals,[302] such as the private AW labels Tierschutzlabel "Für mehr Tierschutz" and Initiative Tierwohl in Germany or Beter Leven keurmerk in the Netherlands.[303]

Conclusion

Systematic evidence on the welfare of dairy cows in Europe is not available to assess how that has improved over time. Some initiatives have contributed to improving certain handling practices (e.g. tail-docking, dehorning), however important AW issues (lameness, mastitis, tethering, space allowance in confinement, diseases and wounds, lack of access to pasture, low longevity of dairy cows) remain unaddressed.

6. Sheep

Characterisation of the EU production system

Sheep farming systems vary greatly across the EU according to the production purpose as well as taking into account the local, climatic, topographic and socio-economic circumstances.[304]

AW concerns for the species studied

According to 2014 EFSA scientific opinion on the welfare risks related to the farming of sheep for wool, meat and milk production, the consequences for the welfare of sheep vary according to the different management systems. In all management systems, the most important welfare problems reported in the case of ewes were heat stress, lameness and mastitis. Prolonged hunger and lack of inspection, detection and action in case of disease or injury were more important in extensive and very extensive management systems while mastitis was more prominent in dairy systems. As regards lambs, there were few differences between management systems with the main welfare consequences reported being thermal stress, pain due to management procedures, gastroenteric disorders and neonatal disorders.[305]

Implementation of AW practices through EU legislation

In the EU there is no specific legislation on the welfare of sheep and their protection falls under the general provisions of Council Directive 98/58/EC. In addition, the Recommendation concerning sheep adopted by Standing Committee of the European Convention for the Protection of Animals Kept for Farming Purposes in 1992 should be observed.[306]

In the absence of species-specific provisions, some MS have taken steps to improve sheep welfare. In Ireland, for instance, *The Sheep Welfare Scheme* was introduced precisely to enhance AW in the national sheep sector. This scheme requires farmers to go beyond basic mandatory standards and undertake targeted actions in areas such as lameness control, mineral supplementation ewes post mating, meal feeding lambs post weaning, among others.[307]

Promotion of AW practices through self-regulation.

There are a few farm assurance schemes or private standards in place in some MS that contribute towards sheep welfare. These include the private AW labels Welfair in Spain and Initiative Tierwohl in Germany, which cover other species too. In 2020, a new AW label covering only sheep was created in Spain upon initiative of the interbranch organisation Interovic.[308]

Conclusion

Systematic evidence on the welfare of sheep in Europe is not available to assess how that has improved over time.

7. Rabbits

Characterisation of the EU production system

In the EU rabbit farming takes place mainly in Spain, France and Italy. These countries represent 83% of the total EU production. There is a second group of five MS that represents 14% of production, and a third group of 10 MS that represents the remaining 3%.[309]

Farming practices for rabbits vary widely across EU countries[310] and they are essentially influenced by the market of destination of the end products.[311] Overall, if one considers the specific housing system, production systems in the EU can be classified into "conventional production" and "niche production".[312] Conventional production is the most used in commercial environments and includes:[313]

- Conventional cages (which represent about 85% of the total EU production);
- Enriched cages (9%); and
- Elevated pens (park) (6%).

Niche production systems include:[314]

- Floor pens (indoor parks);
- External and partially external systems; and
- Organic systems.

Niche production systems above are used on a residual basis or in non-commercial environments.[315]

AW concerns for the species studied

All the different housing systems impact on the level of welfare of the specific animals' categories (reproducing does, kits and growing rabbits).[316] According to 2020 EFSA scientific opinion, it is likely (certainty 66–90% from probabilistic analysis based on expert opinion) that the welfare of reproducing does is lower in conventional cages compared to the other housing systems. Also, it is likely to extremely likely (certainty 66–99%) that the welfare of kits is lower in outdoor systems compared to the other systems and that the welfare is higher in elevated pens than in the other systems. In addition, it is likely to extremely likely (certainty 66–99%) that the welfare of growing rabbits is lower in conventional cages compared to the other systems and that the welfare is higher in elevated pens than in the other systems. The opinion concluded that for reproducing does as well as for growing rabbits welfare consequences related to behavioural restrictions were more prominent in conventional cages, elevated pens and enriched cages, whereas those related to health problems were more important in floor pens, outdoor and organic systems. Finally, the overall welfare impact scores suggest that welfare in organic systems is generally good.[317]

Implementation of AW practices through EU legislation

Council Directive 98/58/EC lays down the minimum standards for the protection of farm animals, including rabbits. Besides that, there is no specific legislation for protecting the welfare of rabbits used for farming purposes at EU level.[318] In addition, the EP adopted a resolution calling on the EC to draw up a roadmap for the development of minimum standards for the protection of farmed rabbits.[319]

Some MS have therefore developed national legislation or recommendations covering the protection of farmed rabbits during production.

For instance, since 2012 in Austria national legislation has banned the use of cages requiring, among others, the rearing on the floor and the availability of bedding material. Hungary and to a lesser extent Poland have developed national legislation laying down minimum requirements for the standard type of production, which includes maximum stocking densities and cage sizes. The national legislation of Belgium and Germany aim ensuring the transition of all farms towards an elevated pens system with a progressive approach. These national legislations were implemented during the last decade and subject to transitional periods so that conventional systems could gradually adapt to the new requirements.[320]

In addition, in Italy in 2014 the NCAs have produced ad hoc guidance which has been distributed to farmers. The guidance describes good management practices, the expected level of competence of farmers, alongside the minimum size of cages, the availability of space and the supply of enriching materials. In Spain, the NCA in cooperation with the national rabbit farming associations has also developed a good practice guidance. The latter describes good husbandry practices and biosecurity measures to ensure good rabbit health while it addresses the animal's capability to express natural behaviour to a lesser extent.[321]

Promotion of AW practices through self-regulation

There are few farm assurance schemes or private standards in place in few MSs that contribute towards the welfare of rabbits. These include, for instance, private AW labels such as Beter Leven in the Netherlands or Welfair in Spain.[322]

Conclusion

Systematic evidence on the welfare of rabbits in Europe is not available to assess how that has improved over time.

Notes/Sources

1 This can include notably forthcoming EU funded research on improving data on AW as part of the research funding package under the Horizon Europe programme, aiming at achieving the objectives of the Farm to Fork Strategy.

2 EFSA's definition, available at https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2012.2767.

3 Van de Weerd H. and Ison S., 'Providing Effective Environmental Enrichment to Pigs: How Far Have We Come?', *Animals*, 2019, 9, 254.

4 European Environment Agency's definition, available at https://www.eea.europa.eu/help/glossary/eea-glossary/extensive-farming.

5 EFSA's definition, available at https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2012.2767.

6 Council Directive 98/58/EC concerning the protection of animals kept for farming purposes, OJ L 221, 8.8.1998, p. 23-27.

7 Council Directive 1999/74/EC of 19 July 1999 laying down minimum standards for the protection of laying hens, OJ L 203, 3.8.1999, p. 53-57.

8 Council Directive 2007/43/EC of 28 June 2007 laying down minimum rules for the protection of chickens kept for meat production, OJ L 182, 12.7.2007, p. 19-28.

9 Council Directive 2008/119/EC of 18 December 2008 laying down minimum standards for the protection of calves, OJ L 10, 15.1.2009, p. 7-13.

10 Council Directive 2008/120/EC of 18 December 2008 laying down minimum standards for the protection of pigs, OJ L 47, 18.2.2009, p. 5-13.

11 Neither the EPRS nor the authors of the research paper are vested with official auditing powers.

12 In a limited number of cases, the targeted interviewees were not available to sit an interview.

13 See, for instance, Heise H. et al., 'Improved Process Quality through Certification Systems: An Assessment of Selected Animal Welfare Labels', *Int. J. Food Systems Dynamics*, 5 (1), 2014, pp. 23-33; Lundmark F. et al.., 'Intentions and Values in Animal Welfare Legislation and Standards', *J Agric Environ Ethics*, 31 July 2014, DOI 10.1007/s1086-014-9512-0 and Eurogroup for Animals, 'Animal welfare and food labelling: Initiating the transition through high quality consumer information', Report, 28 October 2020.

14 More S. J. et al., 'Private animal health and welfare standards in quality assurance programmes: a review and proposed framework for critical evaluation', *Veterinary Record*, 24 June 2017.

15 Simonin D. and Gavinelli A., 'The European Union legislation on animal welfare: state of play, enforcement and future activities', *Animal Welfare from Science to Law*, 2019, pp. 59-70.

16 On egg marking see also section 5.2 of the research paper.

17 EC, Report from the Commission to the European Parliament and the Council on the impact of genetic selection on the welfare of chickens kept for meat production, COM(2016)0182 final.

18 Study on the application of the broiler directive DIR 2007/43/EC and development of welfare indicators, available on https://op.europa.eu/en/publication-detail/-/publication/f4ccd35e-d004-11e7-a7df-01aa75ed71a1.

19 EC, Report from the Commission to the European Parliament and the Council on the application of directive 2007/43/EC and its influence on the welfare of chickens kept for meat production, as well as the development of welfare indicators, COM(2018)0181 final.

20 Council Directive 97/2/EC of 20 January 1997 amending Directive 91/629/EEC laying down minimum standards for the protection of calves, OJ L 25, 28.1.1997, p. 24-25.

21 Council Directive 91/630/EEC of 19 November 1991 laying down minimum standards for the protection of pigs. OJ L 340 de 11.12.1991, p. 33-38.

22 Commission Recommendation (EU) 2016/336 laying down minimum standards for the protection of pigs as regards measures to reduce the need for tail-docking, OJ L 62, 9.3. 2016, p. 20-22.

23 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.

24 Council Regulation (EC) No 1099/2009 of 24 September 2009 on the protection of animals at the time of killing, OJ L 303, 18.11.2009, p. 1–30.

25 Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on the European Union Strategy for the Protection and Welfare of Animals 2012-2015, 15.2.2012, COM(2012)6 final.

[26] Communication from the Commission to the European Parliament and the Council on a Community Action Plan on the Protection and Welfare of Animals 2006-2010, 23.1.2006, COM (2006)13 final.

[27] ECA, Special report No 31/2018: Animal welfare in the EU: closing the gap between ambitious goals and practical implementation.

[28] EC, Commission staff working document: Evaluation of the European Strategy for the Protection and Welfare of Animals 2012-2015, SWD(2021) 77 final, 2021.

[29] Rodenburg B. et al.,'End the cage age: Looking for alternatives. Overview of alternatives to cage housing and the impact on animal welfare and other aspects of sustainability'. European Parliament, Directorate General for Internal Policies, Policy Department C: Citizens' rights and constitutional affairs, 2020.

[30] EC, Eggs, Market Situation Dashboard, 05.05.2021.

[31] EC, Eggs, Market Situation Dashboard, cited above.

[32] EC, Eggs, Market Situation Dashboard, cited above.

[33] ECA, Background paper: Animal welfare in EU, 2018 and Veissier I. et al., 'European Approaches to Ensure Good Animal Welfare', *Applied Animal Behaviour Science*, 113, 2008, pp. 279-297.

[34] Veissier I. et al., cited above.

[35] ECA, cited above.

[36] FCEC, Study on the application of the broiler directive DIR 2007/43/EC and development of welfare indicators. Publication Office of the European Union, 2017.

[37] FCEC, cited above.

[38] ECA, cited above, and Veissier I. et al., cited above.

[39] Vogeler C. S., 'Market-Based Governance in Farm Animal Welfare—A Comparative Analysis of Public and Private Policies in Germany and France', *Animals*, Vol. 9, 2019, pp. 267-285, and ECA, cited above.

[40] Commission Recommendation (EU) 2016/336 laying down minimum standards for the protection of pigs as regards measures to reduce the need for tail-docking, OJ L 62, 9.3. 2016, p. 20-22.

[41] Kollenda E. et al., 'Transitioning towards cage-free farming in the EU: Assessment of environmental and socio-economic impacts of increased animal welfare standards'. Policy report by the Institute for European Environmental Policy, Brussels & London, 2020.

[42] ECA, cited above, and Veissier I. et al., cited above.

[43] See section 5.3.1.3 of the research paper and Sørensen J.T. and Schrader L., 'Labelling as a Tool for Improving Animal Welfare -The Pig Case', *Agriculture*, 2019; 9(6):123.

[44] Vogeler C.S., cited above.

[45] Swedish Ministry of Enterprise and Innovation, Legal Secretariat, Animal Welfare Act 2018:1192 and its Ordinance (2019:66), 2019.

[46] ECA, cited above, and Veissier I. et al., cited above.

[47] See section 5.3.1.3 of the research paper as well as ECA, cited above, and Vogeler C.S., cited above.

[48] Council of Europe, Recommendation Concerning Cattle adopted by the Standing Committee on 21 October 1988.

[49] See section 5.3.1.3 of the research paper as well as ECA, cited above, and Vogeler C.S., cited above.

[50] Council of Europe, Recommendation Concerning Cattle, cited above, and Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, Publication Office of the European Union, 2017.

[51] World Organisation for Animal Health (OIE), Terrestrial Animal Health Code. Chapter 7.11: Animal Welfare and Dairy Cattle Production Systems, 2019.

[52] FVE Position on the Welfare of Dairy Cows: Lameness, 2019 and Nalon E. and Stevenson P., cited above.

[53] EC, Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, cited above.

[54] EC, Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, cited above.

[55] See section 5.3.1.3 of the research paper as well as ECA, cited above, and Veissier I. et al., cited above.

[56] Council of Europe. Recommendation Concerning Sheep adopted by the Standing Committee at its 25th meeting on 6 November 1992.

[57] See section 5.3.1.3 of the research paper as well as ECA, cited above, and Veissier I. et al., cited above.

[58] Report on minimum standards for the protection of farm rabbits (A8-0011/2017). 2016/2077(INI)) Committee on Agriculture and Rural Development, Rapporteur: Stefan Eck.

[59] EC, Overview report: Commercial Rabbit Farming in the European Union, cited above.

[60] See section 5.3.1.3 as well as ECA, cited above, and Veissier I. et al., cited above.

[61] 'Scientific evidence' in this report refers to peer-reviewed publications in scientific journals as well as scientific opinions produced by national (e.g. ANSES from France) or EU scientific agencies (EFSA).

[62] At page 25 of Commission staff working document: Evaluation of the European Strategy for the Protection and Welfare of Animals 2012-2015, SWD(2021) 77 final, 2021.

[63] Green T. C. and Mellor D. J., 'Extending ideas about animal welfare assessment to include 'quality of life' and related concepts', *N. Z. Vet. J.*, 59, 2011, pp. 263–271.

[64] Djurskyddslag (Animal Welfare Act) 2018:1192, in Chapter 2 Section 2.

[65] Overstreet K. and Anneberg I., 'Farmers, inspectors and animal welfare: possibilities for change. A Review.', EURCAW Pigs, accessed 5 May 2021. Veissier I. et al., 'Animal welfare official inspections: farmers and inspectors shared concerns', *Animal*, vol 15, 1, 2021.

[66] E.g. on the feasibility of providing more space allowance to pigs: Nannoni E et al., 'Effects of increased space allowance on animal welfare, meat and ham quality of heavy pigs slaughtered at 160kg', *PLoSONE* 14(2):e0212417, 2019.

[67] E.g. Wallgren T et al., 'Impact of amount of straw on pig and pen hygiene in parly slatted flooring systems', *BMC Veterinary Research* 16:337, 2020.

[68] E.g. Popescu S., Borda C., Diugan E.A., Spinu M., Groza I.S., Sandru C.D., 'Dairy cows welfare quality in tie-stall housing system with or without access to exercise', *Acta Vet. Scand,* 2013; 55:43. doi: 10.1186/1751-0147-55-43.

[69] E.g. Goumon S., Leszkowová I., Šimecková M., Illmann G., 'Sow stress levels and behavior and piglet performances in farrowing crates and farrowing pens with temporary crating', *J Anim Sci*., 2018;96(11):4571-4578. doi:10.1093/jas/sky324; Yin G., Liu H., Li X., Quan D. and Bao J., 'Effect of farrowing environment on behaviour and physiology of primiparous sows with 35-day lactation', *Intern. J. Appl. Res. Vet. Med*., 2016 14:159–169.

[70] E.g. Costa J.H.C. et al., 'Invited review: Effects of group housing of dairy calves on behavior, cognition, performance, and health', *Journal of Dairy Science* 99(4), 2016, pp. 2453-2467.

[71] Spigarelli Ch. et al., 'Welfare Assessment on Pasture: A Review on Animal-Based Measures for Ruminants', 10(4), 2020, p. 609.

[72] Garreta A. and Orain M.N., 'Les enjeux relatifs aux conditions d'élevage, de transport et d'abattage en matière de bien-être animal', Avis du Conseil Economique, Social et Environmental (CESE), 2019.

[73] Broom D. M., 'Animal welfare in the European Union', European Parliament, Directorate General for Internal Policies, Policy Department C: Citizens' rights and constitutional affairs, 2017.

[74] European Commission Staff Working Document on Best Practices with a View to the Prevention of Routine Tail-Docking and the Provision of Enrichment Materials to Pigs. SWD(2016)49 final. 2016.

[75] EFSA Panel on Animal Health and Welfare, Health and welfare of rabbits farmed in different production systems. EFSA, 2020. Work on guidance for rabbit welfare is under way in Portugal and France.

[76] http://www.fawac.ie/publications/animalwelfareguidelines/

[77] ICF et al., 'Study to support the evaluation of the European Union Strategy for the Protection and Welfare of Animals 2012-2015', Publication Office of the European Union, 2021, in particular Annex 9, case study 1.

[78] European Council, Animal welfare – an integral part of sustainable animal production – Outcome of the Presidency questionnaire, 2020.

[79] See, for instance, ICF et al., cited above, and D'Eath R.B. et al., 'Why are most EU pigs tail docked? Economic and ethical analysis of four pig housing and management scenarios in the light of EU legislation and animal welfare outcomes', *Animals*,10(4), 2016, pp. 687-699.

[80] See, for instance, FCEC, Study on the application of the broiler directive DIR 2007/43/EC and development of welfare indicators. Publication Office of the European Union, 2017 as well as Report from the Commission to the European Parliament and the Council on the application of Directive 2007/43/EC and its influence on the welfare of chickens kept for meat production, as well as the development of welfare indicators, C(2018)0181.

[81] Some of these points have been made by more than one contributor, while others have been made by a single interviewee. It was not possible in the course of this assignment to verify to which extent stakeholders agreed or not with the comments made by others, which other studies might achieve through a survey tool.

[82] D'Eath R.B. et al., cited above.

[83] EC, Report from the Commission COM(2018)0181, cited above.

[84] For instance, in the pigs directive: «No piglets shall be weaned from the sow at less than 28 days of age unless the welfare or health of the dam or the piglet would otherwise be adversely affected. However, piglets may be weaned up to seven days earlier if they are moved into specialised housings which are emptied and thoroughly cleaned and

disinfected before the introduction of a new group and which are separated from housings where sows are kept, in order to minimise the transmission of diseases to the piglets» (Annex I chapter II art. 3 of Directive 2008/120/EC).

85 As noted in de Jong I., Berg Ch., Butterworth A. and Estevez I., 'Scientific report updating the EFSA opinions on the welfare of broilers and broiler breeders', EFSA Supporting publications 9(6), 2012, 295E.

86 Ingenbleek P. et al., 'The European Market for Animal-Friendly Products in a Societal Context', *Animals*, 3, 2013, pp. 808-829.

87 De Briyne N. et al., 'Phasing out pig tail docking in the EU – present state, challenges and possibilities', Porcine Health Management, 2018, 4:27.

88 Report from the Commission COM(2018)0181, cited above.

89 The evidence underpinning the findings presented in this table is outlined in the previous and following sections and has not been repeated here.

90 EC, Report from the Commission COM(2018)0181, cited above.

91 As per Annex 1 article 21 of directive 98/58: "No animal shall be kept for farming purposes unless it can reasonably be expected, on the basis of its genotype or phenotype, that it can be kept without detrimental effect on its health or welfare."

92 EC, Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, DG(SANTE) 2017-6241, Publication Office of the European Union, 2017.

93 Dixon L.M., 'Slow and steady wins the race: the behaviour and welfare of commercial faster growing broiler breeds compared to a commercial slower growing breed', 2020, *PLoS ONE* 15(4): e0231006.

94 For instance, FCEC, cited above.

95 FCEC, cited above.

96 Kulikowska J., 'Dobrostan kur w różnych systemach utrzymania – obserwacje własne', *Polskie Drobiarstwo*, nr 3/2019, s. 68-69.; Sobczak J. and Waligóra T., 'Badania naukowe podstawą postępu i doskonalenia technologii chowu drobiu', cz. II, *Polskie Drobiarstwo*, nr 11/2016, s.30.

97 van de Weerd H. and Ison S., 'Providing Effective Environmental Enrichment to Pigs: How Far Have We Come?' *Animals*, 2019, 9, 254.

98 Neither the EPRS nor the authors of the research paper are vested with official auditing powers.

99 See, for instance, ECA, Special report No 31/2018: Animal welfare in the EU: closing the gap between ambitious goals and practical implementation; EC, Report from the Commission to the European Parliament and the Council on the implementation of Council Directive 98/58/EC concerning the protection of animals kept for farming purposes, COM(2016)0558 final; EC, Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, DG(SANTE) 2017-6241, Publication Office of the European Union, 2017; Dullaghan N., 'Do countries comply with EU animal welfare law?', Rethink Priorities Think Tank blog post, 2020; and ICF et al., cited above.

100 EC, Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, DG(SANTE) 2017-6241, Publication Office of the European Union, 2017.

101 Dullaghan N., cited above.

102 See also Berg C., Lundmark Hedman F., 'Compliance with animal welfare regulations; drivers and consequences', *CAB Reviews* 15. No. 025, 2020.

103 EC, Overview report: use of slaughterhouse data to monitor welfare of broilers on farm, DG (SANTE) 2016-8999, Publication Office of the European Union, 2017.

104 https://ec.europa.eu/food/audits_analysis/annual_reports_en

105 For example, the manner compliance with mortality targets in broiler farms has been assessed by the French NCA has been criticised by the EC in an audit report: EC, Final report of an audit carried out in France from 12 to 22 November 2012 in order to evaluate the implementation of controls for animal welfare on farms and during transport. DG SANCO 2012-6446, Publication Office of the European Union, 2013.

106 Hutter B., 'Compliance: Regulation and Environment'. Oxford: Oxford University Press, 1997; Hawkins K. 'Environment and Enforcement: Regulation and the Social Definition of Pollution'. Oxford: Clarendon Press, 1984; Etienne J., 'The politics of detection in business regulation', *Journal of Public Administration Research and Theory*, 2015, 25(1), pp. 257-284.

107 https://www.ciwf.fr/ressources/nos-enquetes/enquete-sur-la-solitude-des-veaux-en-europe/ accessed on 8 March 2021.

108 Vanhersel S.A.J., 'Le bien-être des veaux laitiers : demandes dites sociétales, réglementation, connaissances scientifiques, perception par les éleveurs et leurs pratiques', Thèse pour obtenir le grade de Docteur Vétérinaire. Ecole national vétérinaire d'Alfort, 2019.

[109] E.g. EC, Final report of an audit carried out in Spain from 18 September 2017 to 22 September 2017 in order to evaluate member state activities to prevent tail-biting and avoid routine tail-docking of pigs, DG(SANTE) 2017-6126.

[110] De Briyne N. et al. and D'Eath R.B. et al., cited above.

[111] EC, Final report of an audit carried out in Portugal from 13 May 2019 to 17 May 2019 in order to evaluate Member State activities to prevent tail biting and avoid routine tail docking of pigs, DG(SANTE) 2019-6750.

[112] EC, 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, 24.11.2020, COM(2020)756 final.

[113] Weary D.M., Ventura B.A. and von Keiserlingk M.A.G., 'Societal views on animal welfare science: understanding why the modified cage may fail and other stories', *Animal*,10(2), pp. 309-317, 2016.

[114] See synthesis in Overstreet K. and Anneberg I., 'Farmers, inspectors and animal welfare: possibilities for change. A Review', *EURCAW Pigs*, https://edepot.wur.nl/514920 accessed 5 May 2021.

[115] ICF et al., cited above, in particular Annex 8, case studies 7 and 8.

[116] However, turning into a food exporter has meant improvements in the standard of production in Ireland, according to one interviewee.

[117] See, for instance, ICF et al., and ECA, cited above.

[118] See synthesis in Overstreet K. and Anneberg I., 'Farmers, inspectors and animal welfare: possibilities for change. A Review', *EURCAW Pigs*, https://edepot.wur.nl/514920 accessed 5 May 2021.

[119] Veissier I., Miele M., Mounier L., 'Animal welfare official inspections: farmers and inspectors shared concerns', *Animal*, vol 15, 1, 2021.

[120] As documented for example in FCEC, cited above.

[121] Lomellini-Dereclenne A.C., et al, 'Implementation of the European legislation to protect farm animals: A case study on French inspections to find solutions to improve compliance', *Anim. Welf* 26:311-321, 2017; "the presence of farm records had the largest impact on inspectors' assessment of overall compliance, as farms that do not keep records have approximately four times more chance of being declared severely non-compliant overall" (p. 319).

[122] Overstreet K. and Anneberg I., cited above.

[123] Ingenbleek P. et al., cited above.

[124] https://www.tierschutzbuero.de/tierqual-im-tierwohlstall/

[125] EC, Overview report on education activities for farm, transport and slaughterhouse staff on animal welfare, DG (SANTE) 2016-6001, Publication Office of the European Union, 2016. This is also echoed by the broder literature on farmers' views and compliance with AW legislation, see Overstreet K. and Anneberg I., cited above.

[126] As advocated by Weary et al., cited above.

[127] Mul M. et al., 'EU-welfare legislation on pigs', Research report 273, Wageningen UR Livestock Research, 2010.

[128] FCEC et al., cited above.

[129] Dullaghan N., cited above.

[130] Stamp Dawkins M. et al., 'Chicken welfare is influenced more by housing conditions than by stocking density', *Nature*, vol 427, 22 January 2004.

[131] ICF et al., cited above.

[132] EC, 2021, cited above.

[133] https://www.politico.eu/article/brussels-confronts-eu-countries-over-pesticides-and-animal-welfare/

[134] Regulation (EC) No 854/2004 of the European Parliament and of the Council of 29 April 2004 laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption, OJ L 139, 30.4.2004, p. 206–320.

[135] Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules, OJ L 165, 30.4.2004, p. 1–141.

[136] 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. 1–142.

[137] Council Directive 2002/99/EC of 16 December 2002 laying down the animal health rules governing the production, processing, distribution and introduction of products of animal origin for human consumption, OJ L 18, 23.1.2003, p. 11–20.

[138] https://www.europarl.europa.eu/news/en/press-room/20191121IPR67127/parliament-closes-legal-loophole-to-stop-excessive-ukrainian-chicken-imports

[139] As reported in FCEC, cited above.

[140] FCEC, cited above; Eurogroup for Animals, 'The welfare of broiler chickens in the EU: from science to action', Report, November 2020; EC, Report from the Commission to the European Parliament and the Council on the application of Directive 2007/43/EC and its influence on the welfare of chickens kept for meat production, as well as the development of welfare indicators, COM(2018)0181 final.

[141] This echoes comments made before the implementation of the directive by scholars investigating the impact of the changes in stocking densities on costs and revenue, e.g. in Poland; Utnik-Banas K. et al., 'Economic aspects of reducing stocking density in broiler chicken production using the example of farms in Southern Poland', *Ann. Anim. Sci.*, 14(3): 663-671, 2014.

[142] Utnik-Banas K. et al. 'Changes in technical efficiency of the broiler production in Poland, 1994-2013', *British Poultry Science*, 2018 April, 59(2): 245-249.

[143] Saafkamp H.W. et al. 'Transition from conventional broiler meat to meat from production concepts with higher animal welfare: Experiences from the Netherlands', *Animals,* 9:483, 2019.

[144] EC, Overview report: use of slaughterhouse data to monitor welfare of broilers on farm, DG (SANTE) 2016-8999, Publication Office of the European Union, 2017.

[145] EPRS, 'The EU pig meat sector', Briefing, September 2020.

[146] Mounaix B., Martineau C., Bertrand G., 'Bilan de la mise en œuvre de la directive européenne « bien-être » de 1997 au niveau de la filière veau de boucherie', *Renc. Rech. Ruminants,* 2007,14.

[147] Molnar S. and Szollosi L., 'Sustainability and quality aspects of different table egg production systems: a literature review', *Sustainability,* 12(19), 2020, p. 7884.

[148] Guillet M. and Riou Y., 'Appui à la structuration de la filière « œufs »', rapport du CGAAER no13112; Chenut R., 'Caractéristiques et avenir du parc bâtiment pondeuses en cages', *TEMA*, 2017, no42.

[149] European Council, Animal welfare – an integral part of sustainable animal production – Outcome of the Presidency questionnaire, 2020.

[150] Cozzi G. et al., 'Dehorning of cattle in the EU Member States: A quantitative survey of the current practices', *Livestock Science*, Elsevier, 179, 2015 pp. 4-11.

[151] EC, Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, cited above.

[152] Nalon E. and Stevenson P., 'Protection of dairy cattle in the EU: state of play and directions for policymaking from a legal and animal advocacy perspective', *Animals*, 9(12), 2019, p. 1066.

[153] Cozzi G. et al., 'Main critical factors affecting the welfare of beef cattle and veal calves raised under intensive rearing systems in Italy: a review', *Italian Journal of Animal Science*, 8:sup1, 67-80, 2009.

[154] For instance, De Jong I.C. and Guémené D., 'Major welfare issues in broiler breeders', *World's Poultry Science Journal*, March 2011, 67(1) and Eurogroup for Animals, 'The welfare of broiler chickens in the EU: from science to action', cited above.

[155] EFSA, Health and welfare of rabbits farmed in different production systems. Panel on Animal Health and Welfare, EFSA Journal 18(1), e05944, 2020.

[156] EC, Overview report: Commercial Rabbit Farming in the European Union, DG(SANTE) 2017-6303, cited above,

[157] Alonso M.E. et al., 'Consumers' Concerns and Perceptions of Farm Animal Welfare', *Animals*, 10(3), 2020, p. 385 and Clark B. et al., 'Consumer attitude towards production diseases in intensive production systems', *PLoS ONE* 2019, 14, e0210432.

[158] Among others, Clark B. et al., 'A Systematic Review of Public Attitudes, Perceptions and Behaviours Towards Production Diseases Associated with Farm Animal Welfare', *J. Agric. Environ. Ethics*, 2016:1–24; Thorslund C.A. et al., 'Perceived importance and responsibility for market-driven pig welfare: Literature review', *Meat Sci.*, 2017 Mar;125:37-45. doi: 10.1016/j.meatsci.2016.11.008; and Alonso M.E. et al., cited above.

[159] For instance, Alonso M.E. et al., cited above; Boogaard B.K. et al., 'Social acceptance of dairy farming: The ambivalence between the two Faces of modernity', *J. Agric. Environ. Ethics*, 2011, 24, pp. 259–282; Te Velde H. et al., 'Dealing with Ambivalence: Farmers' and Consumers' Perceptions of Animal Welfare in Livestock Breeding', *J. Agric. Env. Ethics*, 2002, 15, pp. 203–219; Brscic M. et al., 'Citizens' Views on Veal Calves' Fattening System in Italy and Animal Welfare', *Agriculturae Conspectus Scientificus,* 78(3): 249-253, 2013.

[160] Saatkamp H.W. et al., cited above.

[161] Alonso M.E. et al., cited above.

[162] Although new legislation coming into force in 2022 will introduce new restrictions to antibiotics use in animal farming. See e.g. More S.J., 'European perspectives on efforts to reduce antimicrobial usage in food animal production', *Irish Veterinary Journal*, 73(2), 2020.

[163] Alonso M.E. et al. and Clark B. et al. (2019), cited above.

[164] FCEC, cited above.

[165] https://www.thepoultrysite.com/articles/abolition-of-battery-cages-in-eu25-cost-estimated-at-euro354-million.

[166] https://publications.parliament.uk/pa/cm201011/cmselect/cmenvfru/writev/egg/egg.pdf.

[167] Chenut R., cited above.

[168] Mounaix B., Martineau C., Bertrand G., cited above.

[169] There is also quantitative evidence of funding provided to pig farms in 2 Länder in Germany to improve buildings and equipment (about € 15 million and € 8.4 million respectively between 2015 and 2017) as well as funding support (about € 3.3 million in 2016 and € 5 million in 2017-2018) to incentivise farmers not to taildock in EC, Final report of an audit carried out in Germany from 12 February 2018 to 21 February 2018 in order to evaluate Member State activities to prevent tail-biting and avoid routine tail-docking of pigs. DG(SANTE) 2018-6445.

[170] ICF et al., cited above.

[171] Molnar and Szollosi, cited above.

[172] Schuck-Paim C. et al., 'Laying hen mortality in different indoor housing systems: a meta-analysis of data from commercial farming in 16 countries', *Nature Scientific Reports,* 11, 2021, p. 3052.

[173] https://www.hen-welfare.org/time-series.html accessed 22 February 2021.

[174] http://midwestpoultry.com/wp-content/uploads/2018/03/Rubinoff-Ian.pdf accessed 22 February 2021.

[175] E.g. https://www.featherwel.org/featherwel/.

[176] EC, Commission staff working document: Evaluation of the European Strategy for the Protection and Welfare of Animals 2012-2015, SWD(2021) 77 final, 2021.

[177] European Platform on Animal Welfare Own Initiative Group on Fish, Guidelines on Water Quality and Handling for the Welfare of Farmed Vertebrate Fish, 2020, accessible at https://ec.europa.eu/food/sites/food/files/animals/docs/aw_platform_plat-conc_guide_farmed-fish.pdf

[178] https://www.eureporter.co/environment/2020/06/24/fishwelfareguidelines-promise-higher-welfare-for-millions-of-fish/

[179] EC, 2021, cited above.

[180] Similar concerns are voiced in the literature, e.g. Lipińska I., 'Z prawnej problematyki dobrostanu zwierząt gospodarskich', *Przegląd Prawa Rolnego*, nr 1/2015, s. 63-77.

[181] This is supported by some literature. For instance, Xin, H. et al., 'Environmental impacts and sustainability of egg production systems', *Poultry Science*, 90(1), 2011, pp. 263-277.

[182] Chiavegato M.B. et al., 'Pasture-derived greenhouse gas emissions in cow-calf production systems', *J. Anim. Sci*., 2015 Mar, 93(3):1350-64; Hyde B.P. et al., 'A new inventory of ammonia emissions from Irish agriculture', *Atmospheric Environment*, 2003 Jan, 37(1):55-62.

[183] The Dutch NCA recommends pasture access to animals in order to reduce ammonia emissions (https://www.government.nl/topics/livestock-farming/ammonia-emissions-from-farms).

[184] Pykälä J., 'Mitigating human effects on European biodiversity through traditional animal husbandry', *Conservation Biology*, 2000 Jun, 14(3):705-712.

[185] See https://ec.europa.eu/growth/sectors/food/competitiveness/supply-chain-forum_en, accessed on 10 May 2021.

[186] The evidence collected is not specific enough to qualify which periods of the CAP the impacts documented in the various Member States relate to.

[187] See, for instance, ECA, ICF et al. and Dullaghan N., cited above, Heinrich Böll Stiftung (ed), Agriculture Atlas, 2019.

[188] As documented e.g. for France, in Heinrich Böll Stiftung (ed), Agriculture Atlas, 2019, page 24.

[189] For example, in Greece, non-compliances with the general directive in inspected sheep holdings observed in 2019 have led to reductions of relevant direct payments equivalent to between 3 and 9% of those payments' value (source: NCA).

[190] McAllister L., 'Dimensions of Enforcement Style: Factoring in Regulatory Autonomy and Capacity', *Law and Policy*, 2009, 32(1) DOI: 10.1111/j.1467-9930.2009.00308.x.

[191] ECA, Heinrich Böll Stiftung, cited above.

[192] ICF et al., cited above, notably Annex 9, case studies 7 and 8.

[193] Milieu, IEEP and ICF, Evaluation Study to support the Fitness Check of the Birds and Habitats Directives, March 2016.

[194] For instance, losses to sheep farmers due to wolf attacks in Spain have been estimated at €4.6M in 2016 (Source: Spanish Ministry of Agriculture).

[195] Nunny L. et al., cited above.

[196] Eklund A. et al., 'Limited evidence on the effectiveness of interventions to reduce livestock predation in large carnivores', *Nature Scientific Reports*, 7(1): 2097, 2017 and van Eeden et al., cited above.

[197] Predation is a normal occurrence in open range poultry farming (either broilers or laying hens) although industry representatives did not see this as a major issue, nor as a reason for going back to confining birds indoors. Besides, such predation appeared to be largely done by foxes and buzzards, which are not protected under the Habitats Directive.

[198] van Eeden L.M. et al., 'Carnivore conservation needs evidence based livestock protection', *PLoS Biology*, 16(9): e2005577, 2018.

[199] Bestman M. and Bikker-Ouwejan J., 'Predation in organic and free-range egg production', *Animals*, 10(2), 2020, p. 177.

[200] Nunny L. et al., 'A review of seal killing practice in Europe: Implications for animal welfare', *Marine Policy*, 98, 2018, pp. 121-132.

[201] Special Eurobarometer 442. Report – Attitudes of Europeans towards animal welfare, 2016.

[202] Special Eurobarometer (2019) Food safety in the EU, April 2019, available at https://www.efsa.europa.eu/sites/default/files/corporate_publications/files/Eurobarometer2019_Food-safety-in-the-EU_Full-report.pdf

[203] Lundmark F. et al., 'Private Animal Welfare Standards – Opportunities and Risks', *Animals*, 8, 2018, pp. 1-16 and Vogeler C. S., 'Market-Based Governance in Farm Animal Welfare- A Comparative Analysis of Public and Private Policies in Germany and France', *Animals*, Vol. 9, 2019, pp. 267-285.

[204] Commission Regulation (EC) No 589/2008 of 23 June 2008 laying down detailed rules for implementing Council Regulation (EC) No 1234/2007 as regards marketing standards for eggs, OJ L 163, 24.6.2008, p. 6–23.

[205] Commission Regulation (EC) No 543/2008 of 16 June 2008 laying down detailed rules for the application of Council Regulation (EC) No 1234/2007 as regards the marketing standards for poultrymeat, OJ L 157, 17.6.2008, p. 46–87.

[206] Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, OJ L 304 22.11.2011, p. 18-63.

[207] Commission Communication — EU best practice guidelines for voluntary certification schemes for agricultural products and foodstuffs, OJ C 341 du 16.12.2010, p. 5.

[208] See also BETER LEVEN LABEL/"BETTER LIFE LABEL", Powerpoint presentation shared with the study team during the follow-up interview to the survey.

[209] See the following link of the Danish NCA: https://www.foedevarestyrelsen.dk/english/Animal/AnimalWelfare/Pages/New_animal_welfare_label_will_win_the_hearts_of_Danes.aspx

[210] See, among the various references, the study by Kantar Worldpanel quoted in 'Les labels font-ils vendre?', 12 July 2018, available at https://www.lsa-conso.fr/les-labelsfont-ils-vendre,292761.

[211] For the definition of input-based measures, output-based measures and animal-based measures please see the glossary at the beginning of the research paper.

[212] German Presidency priorities regarding animal welfare, presentation delivered at the EU AW Platform meeting of 3 November 2020.

[213] Council Conclusions on an EU-wide animal welfare label, 7 December 2020 (OR. en) 13691/20.

[214] Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods, OJ L 404, 30.12.2006, p.9-25.

[215] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the the Committee of Regions – A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system, cited above.

[216] This can include notably forthcoming EU funded research on improving data on animal welfare as part of the research funding package under the Horizon Europe programme, aiming at achieving the objectives of the Farm to Fork Strategy.

[217] 2 interviews performed.

[218] 2 interviews performed.

[219] Within multi-tier labelling systems each tier/level attests compliance with a progressively higher set of requirements.

[220] Facts and figures: https://initiative-tierwohl.de/initiative/zahlen-und-fakten/.

[221] Appleby M.C., 'The European Union Ban on Conventional Cages for Laying Hens: History and Prospects', *Journal of Applied Animal Welfare Science*, 6:2, 2003, 103-121; Baxter M. R., 'The welfare problems of laying hens in battery cages', *Veterinary Record*, 1994;134(24):614-619 and EFSA, Opinion of the Scientific Panel on Animal Health and Welfare (AHAW) on a request from the Commission related to the welfare aspects of various systems of keeping laying hens, *EFSA Journal* 2005; 3(3):197, 174 pp.

[222] Rodenburg B. et al., 'End the cage age: Looking for alternatives. Overview of alternatives to cage housing and the impact on animal welfare and other aspects of sustainability'. European Parliament, Directorate General for Internal Policies, Policy Department C: Citizens' rights and constitutional affairs, 2020.

[223] Council Decision 78/923/EEC of 19 June 1978 concerning the conclusion of the European Convention for the protection of animals kept for farming purposes. OJ L 323, 17.11.1978, p. 12–13.

[224] Appleby M.C., cited above.

[225] Council Directive 88/166/EEC of 7 March 1988 complying with the judgment of the Court of Justice in Case 131/86 (annulment of Council Directive 86/113/EEC of 25 March 1986 laying down minimum standards for the protection of laying hens kept in battery cages), OJ L 074 of 19.03.1988.

[226] Appleby M.C., cited above.

[227] Council Directive 1999/74/EC of 19 July 1999 laying down minimum standards for the protection of laying hens, OJ L 203, 3.8.1999, p. 53-57.

[228] Rodenburg B. et al., cited above.

[229] Rodenburg B. et al., cited above.

[230] Kollenda E. et al., 'Transitioning towards cage-free farming in the EU: Assessment of environmental and socio-economic impacts of increased animal welfare standards'. Policy report by the Institute for European Environmental Policy, Brussels & London, 2020.

[231] Rodenburg B. et al., cited above.

[232] ECA, Background paper: Animal welfare in EU, 2018 and Veissier I. et al., 'European Approaches to Ensure Good Animal Welfare', *Applied Animal Behaviour Science*, 113, 2008, pp. 279–297.

[233] Veissier I. et al., cited above.

[234] ECA, cited above.

[235] EC, Eggs, Market Situation Dashboard, 05.05.2021.

[236] Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007, OJ L 150 de 14.6.2018, p. 1-92.

[237] EC, Eggs, Market Situation Dashboard cited above.

[238] EC, Eggs, Market Situation Dashboard, cited above.

[239] EC, Eggs, Market Situation Dashboard, cited above.

[240] Rodenburg B. et al., cited above.

[241] EC, Health and food audits and analysis programme 2021, 2020

[242] Broom D. M., 'Animal Welfare in the European Union', European Parliament, Directorate General for Internal Policies, Policy Department C: Citizens' rights and constitutional affairs, 2017.

[243] EPRS, 'The EU poultry meat and egg sector-Main features, challenges and prospects', In-depth analysis, November 2019.

[244] SCAHAW, 'The welfare of chickens kept for meat production (broilers)', Scientific Committee in Animal Health and Animal Welfare. EC, Health and Consumer Protection Directorate General, 2000. SANCO.B.3/AH/R15/2000, and EC Report from the Commission to the European Parliament and the Council on the impact of genetic selection on the welfare of chickens kept for meat production, COM(2016) 0182, 7.4.2016.

[245] Report from the Commission to the European Parliament and the Council on the application of Directive 2007/43/EC and its influence on the welfare of chickens kept for meat production, as well as the development of welfare indicators COM(2018)0181 final and European Parliament Research Service, "The EU poultry meat and egg sector-Main features, challenges and prospects", cited above.

[246] SCAHAW 2000, cited above.

[247] Council of Europe, Recommendation Concerning Domestic Fowl (Gallus gallus), Adopted by the Standing Commitee on 28 November 1995 at its 30th meeting.

[248] SCAHAW 2000, cited above.

[249] FCEC, 'Study on the application of the broiler directive DIR 2007/43/EC and development of welfare indicators'. Publication Office of the European Union, 2017.

[250] FCEC, cited above.

[251] ECA, cited above, and Veissier I. et al., cited above.

[252] Vogeler C. S., 'Market-Based Governance in Farm Animal Welfare—A Comparative Analysis of Public and Private Policies in Germany and France', *Animals*, Vol. 9, 2019, pp. 267-285, and ECA, cited above.

[253] EPRS, 'The EU pig meat sector', Briefing, September 2020.

[254] Eurostat: Pig Population annual data. 04.05.2021 https://ec.europa.eu/eurostat/data-browser/view/apro_mt_lspig/default/table?lang=en.

[255] EPRS, 'The EU pig meat sector', cited above.

[256] EPRS, 'The EU pig meat sector', cited above, and EFSA – Scientific Opinion of the Panel on Animal Health and Welfare on a request from the Commission on Animal health and welfare in fattening pigs in relation to housing and husbandry. The EFSA Journal (2007) 564, 1-14.

[257] EFSA, Scientific Opinion of the Panel on Animal Health and Welfare on a request from the Commission on Animal health and welfare aspects of different housing and husbandry systems for adult breeding boars, pregnant, farrowing sows and unweaned piglets, EFSA Journal (2007) 572, 1-13.

[258] Council Directive 91/630/EEC of 19 November 1991 laying down minimum standards for the protection of pigs. OJ L 340 de 11.12.1991, p. 33-38.

[259] Broom D. M., 'Animal Welfare in the European Union', cited above and EPRS, 'The EU pig meat sector', cited above.

[260] EFSA, Scientific Opinion of the Panel on Animal Health and Welfare on a request from the Commission on Animal health and welfare in fattening pigs in relation to housing and husbandry. EFSA Journal (2007) 564, 1-14.

[261] Nalon E. and De Briyne N., 'Efforts to Ban the Routine Tail Docking of Pigs and to Give Pigs Enrichment Materials via EU Law: Where Do We Stand a Quarter of a Century on?', *Animals*, 2019; 9(4):132.

[262] Council Directive 2001/88/EC of 23 October 2001 amending Directive 91/630/EEC laying down minimum standards for the protection of pigs, OJ L 316, 1.12.2001, p. 1-4.

[263] Commission Directive 2001/93/EC of 9 November 2001 amending Directive 91/630/EEC laying down minimum standards for the protection of pigs, OJ L 316, 1.12.2001, p. 36-38.

[264] EFSA, Animal health and welfare in fattening pigs in relation to housing and husbandry, cited above.

[265] EPRS, 'The EU pig meat sector', cited above.

[266] Aluw M. et al., 'Exploratory Survey on European Consumer and Stakeholder Attitudes towards Alternatives for Surgical Castration of Piglets', *Animals*. 2020; 10(10):1758.

[267] EC, First progress report from the European declaration on alternatives to surgical castration of pigs, 2014.

[268] Nalon E. and De Briyne N., cited above, and EPRS, 'The EU pig meat sector', cited above.

[269] Commission Recommendation (EU) 2016/336 laying down minimum standards for the protection of pigs as regards measures to reduce the need for tail-docking, OJ L 62, 9.3. 2016, p. 20-22.

[270] EC, Commission Staff Working Document on Best Practices with a View to the Prevention of Routine Tail-Docking and the Provision of Enrichment Materials to Pigs, 2016.

[271] Kollenda E. et al., cited above.

[272] Mul M. et al., 'EU-welfare legislation on pigs', Research report 273, Wageningen UR Livestock Research, 2010.

[273] ECA, cited above, and Veissier I. et al., cited above.

[274] Sørensen J.T. and Schrader L., 'Labelling as a Tool for Improving Animal Welfare – The Pig Case', *Agriculture*, 2019; 9(6):123.

[275] EFSA, Opinion of the Scientific Panel on Animal Health and Welfare (AHAW) on a request from the Commission related with the risks of poor welfare in intensive calf farming systems. EFSA Journal (2006), 4(6):366, 1–180.

[276] Broom D.M., 'Animal Welfare and Legislation'. In *Welfare of Production Animals: Assessment and Management of Risks*, ed. Smulders F. and Algers B.O., 2009, p. 339-352. Wageningen: Wageningen Pers.

[277] Council Directive 91/629/EEC of 19 November 1991 laying down minimum standards for the protection of calves, OJ L 340, 11.12.1991, p. 28-32.

[278] Council of Europe, Recommendation Concerning Cattle. APPENDIX C: Special Provisions for Calves. Adopted by the Standing Committee at its 26th meeting on 8 June 1993.

[279] Council Directive 97/2/EC of 20 January 1997 amending Directive 91/629/EEC laying down minimum standards for the protection of calves, OJ L 25, 28.1.1997, p. 24-25.

[280] EFSA, Opinion on risks of poor welfare in intensive calf farming systems, cited above.

[281] Vogeler C. S., cited above.

[282] Swedish Ministry of Enterprise and Innovation, Legal Secretariat, Animal Welfare Act 2018:1192 and its Ordinance (2019:66), 2019.

[283] ECA, cited above, and Veissier I. et al., cited above.

[284] ECA, cited above, and Vogeler C. S., cited above.

[285] Ihle R., Dries L., Jongeneel R., Venus T., Wesseler J., 'Research for agri-committee – The EU cattle sector: challenges and opportunities – milk and meat'. European Parliament, Directorate-general for internal policies. Policy department B: structural and cohesion policies agricultural and rural development, 2017.

[286] SCAHAW, 'The welfare of cattle kept for beef production', 2001. SANCO.C.2/AH/R22/2000.

[287] SCAHAW, 'The welfare of cattle kept for beef production', 2001, cited above.

[288] EFSA, Scientific Opinion on the welfare of cattle kept for beef production and the welfare in intensive calf farming systems, EFSA Journal 2012;10(5):2669. 166 pp.

[289] Tarantola M. et al., 'Beef cattle welfare assessment: use of resource and animal-based indicators, blood parameters and hair 20b-dihydrocortisol', *Italian Journal of Animal Science,* 2020, Vol. 19, No. 1, p. 341-350.

[290] Council of Europe. Recommendation Concerning Cattle adopted by the Standing Committee on 21 October 1988.

[291] Annen D. N. et al., 'Animal Welfare in Public and Private Standards and On-Farm Compliance', *German Journal of Agricultural Economics*, Humboldt-Universitaet zu Berlin, Department for Agricultural Economics, 2013, vol. 62(03), p. 1-16.

[292] ECA, cited above, and Vogeler C. S., cited above.

[293] EPRS, 'The EU dairy sector Main features, challenges and prospects', Briefing, December 2018.

[294] Eurogroup for Animals and Compassion in World Farming, Report on the Welfare of Dairy Cows, 2015; Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, Publication Office of the European Union, 2017; and Broom D. M., 'Animal Welfare in the European Union', cited above.

[295] EFSA, Scientific report of EFSA prepared by the Animal Health and Animal Welfare Unit on the effects of farming systems on dairy cow welfare and disease. Annex to the EFSA Journal (2009) 1143, 1-38; Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, cited above, and FVE Position on the Welfare of Dairy Cows: Lameness, 2019.

[296] Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, cited above and Nalon E. and Stevenson P., 'Protection of dairy cattle in the EU: state of play and directions for policymaking from a legal and animal advocacy perspective', *Animals*, 9(12), 2019, p. 1066.

[297] Council of Europe, Recommendation Concerning Cattle cited above and Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, cited above.

[298] World Organisation for Animal Health (OIE), Terrestrial Animal Health Code. Chapter 7.11: Animal Welfare and Dairy Cattle Production Systems, 2019.

[299] FVE Position on the Welfare of Dairy Cows, cited above, and Nalon E. and Stevenson P., cited above.

[300] Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, cited above.

[301] Overview report of the Directorate-General for Health and Food Safety on a series of audits carried out in 2016 in order to evaluate Member State controls and use of indicators to ensure the welfare of cattle on dairy farms, cited above.

[302] ECA, cited above, and Veissier I. et al., cited above.

[303] ECA, cited above, and Vogeler C. S., cited above.

[304] EFSA, Scientific Opinion on the welfare risks related to the farming of sheep for wool, meat and milk production. EFSA Journal 2014;12(12):3933, 128 pp.

[305] EFSA, Scientific Opinion on the welfare risks related to the farming of sheep for wool, meat and milk production, cited above.

[306] Council of Europe. Recommendation Concerning Sheep adopted by the Standing Committee at its 25th meeting on 6 November 1992.

[307] Government of Ireland, Sheep Welfare Scheme. Department of Agriculture, Food and the Marine. Ireland, 2020.

[308] See section 5.3.1.3 of the research paper.

[309] Overview report: Commercial Rabbit Farming in the European Union. Publication Office of the European Union, 2017.

[310] EFSA, Health and welfare of rabbits farmed in different production systems. Panel on Animal Health and Welfare, EFSA Journal 18(1), e05944, 2020.

[311] Overview report: Commercial Rabbit Farming in the European Union, cited above and European Parliament, Report on minimum standards for the protection of farm rabbit, 2017.

[312] EFSA, Health and welfare of rabbits farmed in different production systems cited above.

[313] Overview report: Commercial Rabbit Farming in the European Union, cited above.

[314] EFSA, Health and welfare of rabbits farmed in different production systems cited above.

[315] Overview report: Commercial Rabbit Farming in the European Union, cited above.

[316] EFSA, Health and welfare of rabbits farmed in different production systems cited above.

[317] EFSA, Health and welfare of rabbits farmed in different production systems cited above.

[318] Overview report: Commercial Rabbit Farming in the European Union, cited above.

[319] EP, Report on minimum standards for the protection of farm rabbits (A8-0011/2017). 2016/2077(INI)) Committee on Agriculture and Rural Development, Rapporteur: Stefan Eck.

[320] Overview report: Commercial Rabbit Farming in the European Union, cited above.

[321] Overview report: Commercial Rabbit Farming in the European Union, cited above.

[322] See section 5.3.1.3 of the research paper.

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The European Union (EU) has a long history of regulating the welfare of farmed animals. Currently, the 'on-farm' aspects of animal welfare (AW) are regulated by five directives adopted by the Council of the EU. The European Parliament is scrutinising the implementation of the EU legislation through a dedicated report (with the Agriculture and Rural Development Committee (AGRI) taking the lead and the Environment, Public Health and Food Safety Committee (ENVI) giving its opinion). This European Implementation Assessment (EIA), aimed at providing evidence in support of the committees' work on the report, shows that the implementation of the EU *acquis* has been challenging. Based on a large data collection programme, it presents findings on the implementation of the EU legislation against the standard criteria for ex-post evaluation, namely relevance, effectiveness, efficiency, coherence and EU added value. The EIA also maps and assesses AW labelling systems operating across the EU in terms of their design (including their scientific substantiation), regulatory status and functioning (including their effectiveness, efficiency and transparency). Furthermore, the paper analyses the prospects for a possible introduction of AW labelling at EU level.

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