COW
SEABASS
LAMB
PIG
CHICKEN
SHEEP

NO [ANIMAL] LEFT BEHIND

RABBIT
TURKEY
TROUT
CALF
MULE
HORSE
GOAT
SALMON
DUCK

The need for a new Kept Animals Regulation

EUROGROUP FOR ANIMALS

Index

Executive summary

Eurogroup for Animals wants to see a Europe where animals live a good life, and where the principle of animal sentience is not merely referenced as a principle in the Treaties[1], but is really honoured in practice throughout relevant Union law.

This requires, however, a shift in how we consider whether animals are able to live a good life, and it is particularly important when reviewing how an animal's quality of life might change over time.

For decades, animal welfare has been defined, and to some extent hobbled, by the notion of the "Five Freedoms"[2] — a framework that has relied on the elimination of negative experiences, albeit within the parameters of legal standards, that free animals "as far as possible" from hunger and thirst, discomfort, pain, injury or disease, fear and distress, or constraints allowing the expression of natural behaviour. Such a model seeks to mitigate, or at best temporarily naturalise, negative experiences, rather than to eliminate them as a whole.

Of course, such mitigation does not in and of itself provide grounds for a positive experience. Animals also experience other negative effects that include anxiety, fear, panic, frustration, anger, helplessness, loneliness, boredom and depression.
In short, such an anthropocentric model only provides such freedom to the degree that the animals continue to suffer to a degree that humans find acceptable — often in conditions that are far removed from the pictures on products that in themselves, partly through their sheer degree of sterility, bear no real connection to the animals from which they are derived.

Our challenge therefore is to move beyond the current paradigm, to ensure that EU law meets the expectations of European citizens[3] and the needs of animals alike. Not merely through the alleviation of the worst practices, but through the promotion

[1] Consolidated version of the Treaty on the Functioning of the European Union, Part One - Principles. Title ii - provisions having general application, Article 13,

[2] Brambell, R. (1965). Report of the Technical Committee to Enquire Into the Welfare of Animals Kept Under Intensive Livestock Husbandry Systems, Cmd. (Great Britain. Parliament), H.M. Stationery Office, pp. 1–84.

[3] Eurobarometer (2016). Attitudes of Europeans towards animal welfare. November–December 2015. Special Eurobarometer 442 Report. Directorate-General for Communication, European Commission, Brussels. Available at: https://data.europa.eu/euodp/en/data/dataset/S2096_84_4_442_ENG. Consulted on 20th of April 2021.

of positive experiences and states that provide opportunities for animals to behave in ways they find rewarding. Such behaviour may include environment-focused exploration, food acquisition activities, as well as animal-to-animal interaction, all of which can generate various forms of comfort, pleasure, interest, confidence and a sense of control.

The European Commission has an opportunity to deliver, in line with its ambitions contained in the Farm to Fork strategy, a future-proofed legal foundation for standards — evidence-based standards that provide the ability for all farmed animals to experience a positively affected mental state, thereby enabling them to lead lives that are truly worth living. Any farming practices that cannot meet such requirements should, in effect, be eliminated.

In doing so, Europe would remain a world leader in animal welfare standards, citizens expectations would be met, and no animal would be left behind.

1 - Existing legislative framework

1.1 - Council Directive 98/58/EC and general provisions

In its present form, the text of Council Directive 98/58/EC, or "the General Farming Directive", presents a number of problems. The first being difficult implementation, and thus unenforceability, of the many of its principles and rules. This unenforceability is due to the lack of measurable and validated indicators that can be used to establish thresholds for non-compliance; hence, the competent authorities are not able to enforce many of the provisions of the Directive. As a consequence, animal welfare in sectors that are not covered by species-specific rules is *de facto* left to industry-led guidance or to the know-how, attitudes and beliefs of individual farmers and/or farm workers. Some Member States do have additional requirements for certain species (note the ban on enriched cages in Member States such as Austria), but such standards are patchy and haphazard across the Union as a whole.

This applies to many animal species (e.g., beef cattle, turkeys, rabbits, quails, sheep, and goats, etc.), that remain in a legislative limbo characterised by serious animal welfare problems due to the lack of clear, implementable and enforceable rules.

A shocking example is the dairy sector where, because of the lack of legally defined indicators of what constitute minimum standards of dairy cows welfare, a number of animal welfare issues have remained unaddressed for over 25 years. As a result, dairy cows across the Union widely suffer from high levels of lameness, mastitis, and lesions resulting from poor housing requirements. These conditions represent "unnecessary" suffering and could be prevented. Member States that fail to address these problems are not complying with Article 3 of the General Farming Directive.

Another example of the need to revise the Directive to fill legislative gaps are farmed fish. In the EU, up to 1.2 billion farmed fish are slaughtered each year. The General Farming Directive, reflecting the scientific knowledge of the late 90s, dismisses fish from Article 4, which points to the detailed description for each stage of farming (e.g. feed, water and other substances, automatic or mechanical equipment, breeding procedures, etc). In 2008 the European Food Safety Authority published a series of species-specific scientific opinions on the welfare aspects of husbandry in aquaculture systems which review many of the important factors and create a scientific framework for standards in this area.

1.2 - Species-specific Council directives- Laying hens, Broiler Chickens, Pigs and Calves

Since the species-specific directives, scientific research has evolved at an astonishing rate. There were over 1,400 papers published that studied the welfare of broilers, laying hens, pigs or calves since their respective directives were published[4]. This clearly demonstrates an urgent need for updating the respective directives.
This evolution in science together with public pressure has led to an industry movement to improve the welfare practices in supply chains, taking initiative to ban cages for laying hens[5] and sows[6], committing to reduce stocking densities in broiler production and change to slow growing breeds[7], or better housing for calves[8].

Some countries or regions have introduced legislation to improve welfare practices beyond the EU minimum legal requirements. For instance, several states in the United States of America have now banned cages for laying hens (e.g. California, Oregon, Washington, Massachusetts, Rhode Island and Michigan[9]).

There are several challenges in the different species-specific directives that have room for improvement. We will cover those in separate briefings. In this section we will briefly highlight some of the main cross species examples, namely: Space and Freedom to move, Environmental enrichment and Breed.

Space and Freedom of movement are very restricted within the different species-specific directives

For a farm animal to be able to move freely and perform natural behaviours they need sufficient space and no restrictions of movement (no cages). Regarding cages, there is a vast evidence of the negative impact on laying hens' as well as

[4] Data obtained through Google scholar's search. The species name and welfare were searched with the "allintitle" function from the date the directive of the species was published until 2021. Consulted on the 14th May 2021.
[5] CIWF (2021). Egg track, Global: https://www.eggtrack.com/. Consulted on the 14th of May 2021.
[6] CIWF (2019). The Power of Partnership – Driving free farrowing in Italy's specialty cured meat products. Available at: https://www.compassioninfoodbusiness.com/media/7433435/fumagalli-free-farrowing-case-study.pdf. Consulted on the 12th May.
[7] Welfare commitments tracker for broilers. Available at: https://welfarecommitments.com/broiler/ . Consulted on the 10th of May 2021.
[8] CIWF (2020). Higher welfare rosé veal and beef. Available at: https://www.compassioninfoodbusiness.com/media/7437421/buitelaar-case-study-higher-welfare-rose-veal-and-beef.pdf. Consulted on the 12th May 2021.
[9] Welfare commitments tracker. Available at: https://welfarecommitments.com/us-cage-free-laws/. Consulted on the 10th May 2021.

sows' welfare[10]. For laying hens it not just impairs the ability to move around or spread their wings, as also restricts farmers' ability to meet hens' basic needs such as providing friable litter to dustbathe.

For sows, the basic need of even turning around is restricted, so at least during lactation and a part of their pregnancy, sows are restricted to the same position, only being able to stand up and lay down (not in a prefered position), and being unable to properly nest or interacted with their piglets.

Stocking density (number of animals per square meter) required in the respective directives is also much higher than what science demonstrates is needed. Space can be divided into basic space needed to rest (lay down externally and laterally) and then space needed to be able to have a life worth living allowing for general activity[11]. Currently the minimum EU legislation in some cases does not even require the minimum space needed for rest externally and in no case provides the minimum space to lay down laterally. A clear example is the Pigs' directive (Council Directive 2008/120/EC of 18 December 2008 laying down minimum standards for the protection of pigs), where, for example, according to the allometric curve a 80kg pig needs at least 0.70 m^2 to be able to lay down externally (minimum requirement to be able to rest)[12] and the directive requires solely a minimum space of 0.55 m^2. The same happens with broiler chickens. A 2.5 kg broiler chicken needs at least 0.08 m^2 to lay down comfortably (laterally)[13]. With the widely used 42 kg/m2 of stocking density derogation of the Broilers' Directive (COUNCIL DIRECTIVE 2007/43/EC of 28 June 2007 laying down minimum rules for the protection of chickens kept for meat production), only 75% of that space is provided to broiler chickens, not allowing them to even rest properly.

[10] CIWF. (2021). Scientific briefing on caged farming Overview of scientific research on caged farming of laying hens, sows, rabbits, ducks, geese, calves and quail. Available at: https://www.europarl.europa.eu/cmsdata/231963/Scientific%20briefing%20on%20caged%20farming,%20February%202021.pdf . Consulted on the 10th of May 2021.

[11] Petherick, J.C. (2007). Spatial requirements of animals: Allometry and beyond. Journal of Veterinary Behaviour. 2007, Nov-Dec.; 2(6):197-204. doi: 10.1016/j.jveb.2007.10.001.

[12] CIWF (2014). Space allowance for sows and meat pigs. Available at: https://www.compassioninfoodbusiness.com/media/7435683/space-allowance-for-sows-and-meat-pigs.pdf. Consulted on the 11th May 2021.

[13] CIWF (2012). Broiler welfare in commercial systems, pp. 6. Available at: https://www.compassioninfoodbusiness.com/media/5819744/broiler-welfare-in-commercial-systems.pdf. Consulted on the 11th of May 2021.

Environmental enrichment

In summarising a number of definitions of environmental enrichment, Leone and Estevez (2008)[14] defined it as "the addition of biologically relevant features to animals' environment that foster and encourage natural behaviours and create a greater number of behavioural opportunities". In the current species-specific directives there are very few references to environmental enrichment. The closest is made on the pigs directive, where the environmental conditions are referred to as important to prevent mutilations, such as tail docking. But no further information or a strong statement is included in the directive. For fish, the Animal Testing Directive 2010/63 requires the provision of environmental enrichment, and the EU's strategic aquaculture guidelines[15] have initiated the mapping of environmental enrichment practices as a priority action for fish health. Plenty of research demonstrates the most effective enrichment materials for each species. For example, straw or similar materials have been demonstrated to be the most effective enrichment to keep pigs occupied for a greater percentage of the day[16]; for broilers, dustbathing pits were one of the environmental enrichments which the frequency of use increased with age[17,18]; laying hens prefer to perch in higher places to rest[19], and for calves, simply housing them with other calves, increases their play behaviour and their positive attitude[20]. To truly incorporate the sentience of animals in the revision of the species-specific directive, species-specific provisions need to be incorporated.

[14] Leone, E.H., Estévez, I. (2008). Economic and welfare benefits of environmental enrichment for broiler breeders. Poultry Science. 2008, Jan.; 87(1):14-21. Doi: 10.3382/ps.2007-00154.

[15] European Commission(2021). Strategic guidelines for a more sustainable and competitive EU aquaculture for the period 2021 to 2030. Available at:https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2021:236:FIN. Consulted on 11th May 2021.

[16] European Commission (2016). 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. Available at https://ec.europa.eu/food/system/files/2016-12/aw_practice_farm_pigs_stfwrkdoc_en.pdf. Consulted on 11th May 2021..

[17] Baxter, M., Bailie, C.L., O'Connell, N.E. (2018). An evaluation of potential dustbathing substrates for commercial broiler chickens. Animal. 2018 Sept.; 12(9):1933-1941. Doi: 10.1017/S1751731117003408.

[18] Baxter, M., Bailie, C.L., O'Connell, N.E. (2018). Evaluation of a dustbathing substrate and straw bales as environmental enrichments in commercial broiler housing. Applied. Animal Behaviour Science. 2018 Mar.; 200:78-85. Doi: 10.1016/j.applanim.2017.11.010.

[19] Rufener, C., Berezowski, J., Maximiano Sousa, F., Abreu, Y., Asher L., Toscano M.J. (2018). Finding hens in a haystack: Consistency of movement patterns within and across individual laying hens maintained in large groups. Scientific Report. 2018 Aug.; 8(1). Doi: 10.1038/s41598-018-29962-x.

[20] Costa, J.H.C., von Keyserlingk, M.A.G., Weary, D.M. (2016). Invited review: Effects of group housing of dairy calves on behavior, cognition, performance, and health. Journal of Dairy Science. 2016 Apr.; 99(4):2453–2467. Doi: 10.3168/jds.2015-10144.

Breed

When a breed is genetically selected to grow faster and produce more muscle, milk or eggs or to be more prolific, their metabolism is pushed to the limit and their health, as well as mental wellbeing and ability to express natural behaviours, is damaged. For sows, a high prolificacy is a known risk factor for high pre-weaning mortality[21], piglet facial lesions and udder/teat lesions[22] as well as early sow mortality due to prolapses[23]. Selective bridging of broilers for fast growth and unnaturally bigger breast muscles, can lead to a higher predisposition to disease (such as acute and chronic heart failure, musculoskeletal deformities and pathologies) and a poorer immune system that leads to higher use of antibiotics[24]. In dairy cows, breeding for increased production traits can lead to a higher incidence of health and fertility issues[25].

Breeding for good welfare is a fundamental piece of providing animals with a life worth living. At the moment there is no reference to breed requirements in the species-specific directives. Without the right breed animals are unable to express there natural behaviours and are incapacitated to benefit from good environment, good nutrition or even good health.

[21] Vasdal, G., Østensen, I., Melišová, M., Bozděchová, B., Illmann, G., Andersen, I. L. (2011). Management routines at the time of farrowing—effects on teat success and postnatal piglet mortality from loose housed sows. Livestock Science. 2011 Apr.; 136(2-3):225-231. Doi: 10.1016/j.livsci.2010.09.012.

[22] Chou, J.Y., Ison, S. H., Marchant-Forde, J., Nalon, E., Huynh T. T. T.,, Harsh, C., van de Weerd, H., Boyle, L.A., Blaszak, K. (2020). 53 Risk factors for facial lesions in piglets and teat injuries in sows–a review." Journal of Animal Science. 2020 Nov; 98(4):37-38. Doi:10.1093/jas/skaa278.067.

[23] Iida, R., Piñeiro, C., Koketsu, Y. (2019). Incidences and risk factors for prolapse removal in Spanish sow herds. Preventive veterinary medicine. 2019, Jan; 163: 79-86.

[24] Eurogroup for Animals (2020). The welfare of broiler chickens in the EU- From science to action. Available at: https://www.eurogroupforanimals.org/sites/eurogroup/files/2020-11/2020_11_19_eurogroup_for_animals_broiler_report.pdf. Consulted on 12th of May 2021.

[25] Miglior, F., Fleming, A., Malchiodi, F., Brito, L.F., Martin, P., Baes, C.F. (2017). A 100-Year Review: Identification and genetic selection of economically important traits in dairy cattle. Journal of Dairy Science. 2017, Dec.; 100(12):10251-10271. Doi: 10.3168/jds.2017-12968.

2 - Eurogroup for Animals' proposal

Towards the end of the Barroso II Commission, the European Parliament and Council of the European Union were sent a draft legislative package containing four proposals, two of which — the Animal Health Law and the Official Controls Regulation — were designed to sit alongside a new, revamped, improved and simplified legislative landscape for animal welfare. These welfare proposals never, in the end materialised, leaving one consolidated, simplified rule book for veterinary public health (the Animal Health Law), one regulation on Official Controls (covering everything from controls in the sanitary and phytosanitary fields, to controls on the welfare of animals on farm, at the time of slaughter and during transport), and several, disparate Directives relating to various aspects of animal welfare.

Taking into consideration that we expect a legislative proposal for a revised Transport Regulation during this term, given the mandate on this contained in the European Commission's Farm to Fork strategy[26], we are left with the remaining acquis relating to animals on farms, and on the protection of animals at the time of killing (Council Regulation (EC) No 1099/2009 — the 'Slaughter Regulation').

How a new Kept Animals Regulation would fit with the OCR

Crucially, the now adopted Official Controls Regulation contains (via Article 95) the power for the Commission to designate new Union reference centres for animal welfare (powers which have already been used), and (under Article 21(8)(e)) for the development of specific animal welfare indicators, which can be used to assess compliance with legal requirements. However, species-specific standards have to be in place for such indicators to work, and for many species (cattle, sheep, goats, species of fish, turkeys and rabbits and so forth), this is simply not possible. As we have seen above, the provisions of the General Farming Directive are so broad as to be inapplicable to many sectors on farms, and with no ability for the Commission to specify species-specific rules based on this through the use of tertiary acts, at present leaving the utility of such indicators vastly diminished.

[26] Eurogroup for Animals (2021). Live animal transport: time to change the rules. Available at: https://www.eurogroupforanimals.org/sites/eurogroup/files/2021-01/2020_01_27_efa_transport_white_paper_0.pdf. Consulted on 22nd of April 2021.

2.1 - Completing the legislative jigsaw

Eurogroup for Animals therefore proposes a new regulation on the protection of animals kept and used for commercial purposes — a 'Kept Animals Regulation'. Such an act would not only replace the five existing acts pertaining to the welfare of animals on farms(General Farming Directive, Broilers Directive, Pigs Directive, Calves Directive and Laying Hens Directive) but would also broaden the scope of any such law to any animal that is used or traded for commercial purposes. Such a regulation should lay down specific measures based on the Five Domains (see below) for all species but also contain delegated and implementing powers to enable the Commission to formulate standards for individual species, thereby providing for detailed standards that will meet the principles contained in the Five Domains.

Such an approach would also link with both the Animal Health Law and the Official Controls Regulation. New indicators, provided for through EU Animal Welfare reference centres, would allow for definitive assessments of compliance with standards on the ground, whilst one of the Five Domains (covered below) is wholly focussed on animal health — a key and missing component in the acquis relating to disease emergence and also a key tool in combating the spread of antimicrobial resistance.

It is worth noting that indeed the Animal Health Law, whilst being a very welcome and impressive act, does not address the health of individual animals. It is instead, under the legal basis of Article 168(4)(b) TFEU, about the prevention and control of transmissible animal diseases. As such, the act does little (beyond some principles on husbandry) to limit the emergence of diseases and to maintain the health of animals in and of themselves.

This is, therefore, where the Five Domains, through a new Kept Animals Regulation, can provide such added value. By ensuring that individual animals' health is maintained through proper husbandry and environmental provisions, the emergence of new viral diseases can be limited and the need for the routine use of antibiotics can be reduced, many of which are used to treat microbial infections that result from the poor conditions in which farmed animals are kept at present.

Such an approach would also leave us with three basic acts that, together with the (OCR), would cover the lives of all farmed animals, if not from 'cradle to grave' then from 'stable to slaughterhouse'.

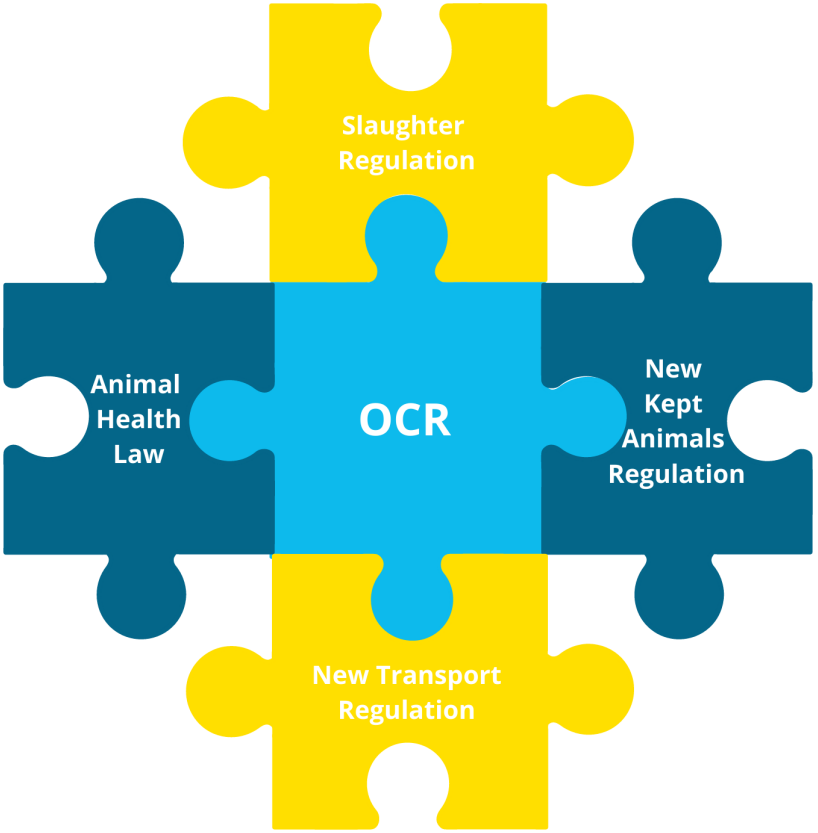

Figure 1 - How the new acquis for animal welfare can fit with the wider legal landscape

2.2 - Why a regulation?

Citizens across the EU are concerned with animal welfare, sustainability, and the environmental impact of farming. People are looking for welfare indicators when buying animal products, because they are indicators of the most important product attributes, quality and sustainability.

Regulations provide for stronger EU harmonisation, directly applicable provisions and a reduced risk of diverging national implementation. A Regulation covering animals that are kept on farms, or are farmed, would demonstrate the Commission's commitment of wanting to protect animals all over the EU to the same degree. A Directive will never be able to achieve this same level of ambition.

Regulations are advantageous in coping with issues that have inherent cross-border effects, so-called externalities, as well as economies of scale and scope. In particular, the Union's internal market should ensure fair competition between producers from different Member States and facilitate their cross-border operations and sales. In markets with a huge potential for economies of scale, this allows firms to

reduce costs and speed up innovation as they can produce for a much larger group of consumers. Thus Union-level regulation is not only beneficial, but desirable, when public policies in an individual Member State have substantial spill-overs to actors in other Member States, as is the case in the agricultural sector. It is no surprise therefore that Article 43 of the Treaty on the Functioning of the European Union seeks to harmonise the organisation of agricultural markets.

Furthermore, given the suggested scope (see below) of any such law, only a regulation could sensibly provide for the tertiary powers that would be needed to enhance the basic act through adjustable provisions including the latest scientific and technological advancements in animal welfare.

Regulations vs Directives

Unlike directives, which are only capable of vertical direct effect, regulations are capable of both horizontal and vertical direct legal effects and as such individuals are able to bring actions against other individuals based on obligations flowing from the regulation. This broader and deeper reach of regulations over directives means they can be more effectively policed by national courts to ensure both that Member States have complied with their obligations in relation to the regulation and that the obligations created by the regulation are enforced against individuals.

2.3 - Legal basis and scope

Whilst animal welfare is not an expressed area of competence that has been conferred by the Member States to the Union level[27], whether under Article 3 of the TFEU (setting out competences exclusively conferred on the Union) or Article 4 TFEU (setting out shared areas of competence between the Union and the Member States) it should nevertheless be noted that animal welfare is plainly an objective of Union-level policy, in the same way that principles of non-discrimination, equal treatment and transparency have all been established as fundamental principles of the EU as they have emerged from (ultimately) the Treaty, and (derivatively) from legislation and case law of the Court of Justice of the European Union (CJEU).

[27] Noted in Decision 78/923/EEC concerning the conclusion of the European Convention for the protection of animals kept for farming purposes, a Decision adopted on the basis of Arts 43 and 100 (CAP and harmonisation) of the TEC, one of the recitals to which notes "whereas the protection of animals is not in itself one of the objectives of the community…"

Article 13 TFEU states that:

"*In formulating and implementing the Union's agriculture, fisheries, transport, internal market, research and technological development and space policies, the Union and the Member States shall, since animals are sentient beings, pay full regard to the welfare requirements of animals, while respecting the legislative or administrative provisions and customs of the Member States relating in particular to religious rites, cultural traditions and regional heritage*"

Despite the fact that Article 13 TFEU does not constitute a Treaty basis on its own, providing the EU institutions with a competence to legislate on matters of animal welfare, it reflects what may increasingly be described as a fundamental EU principle and that is apparent from the recitals in existing legislation and the passages of CJEU case law[28].

While Article 43 TFEU permits harmonised measures to be adopted in pursuit of obviating distortions in competition, such as to pursue an internal market rationale, this Article is ordinarily used when practices and trades are to be subject to minimum requirements, wherein the practices in question will otherwise continue but be subject to higher standards. It also limits the scope of legal requirements to existing agricultural and aquaculture markets and practices.

However, Article 114 allows for a much fuller harmonisation of measures, across the internal market as a whole. There are two ways to approach harmonisation: (i) minimum standards set by the EU institutions, albeit where the Member States are permitted to take more restrictive measures in pursuit of the policy in question; or (ii) full harmonisation, where EU law will fully occupy the field and prevent the Member States from imposing additional obligations by way of domestic measures, such as would create regulatory divergence between the different Member States.

Such an approach in relation to the protection of animals indeed was considered by the CJEU in case 227/82 *Van Bennekom*, concerning Directive 65/65/EEC on the approximation of provisions laid down by law, regulation or administrative action relating to proprietary medicinal products. It is interesting to note that the Court

[28] Eg. recital (2) to Directive 2010/63/EU (the animal experiments Directive)

considered that protection of animal life could justify a fully harmonising measure adopted under what is now Art 114 TFEU[29].

The ban on trade in seal products is a good example of measures designed to advance animal welfare based on Article 114 TFEU[30]. Whilst the General Court (CJEU), in case T-526/10 *Inuit Tapiriit Kanatam, v Commission,* noted that the principal objective of the law was not to safeguard the welfare of animals but to improve the functioning of the internal market, it was, nevertheless, instituted in response to public concerns over the cruel hunting methods employed by seal hunters and the national bans placed on seal products by a number of Member States at the time. Indeed, as soon as the first of these conditions is met (removing obstacles to trade or preventing appreciable distortions of competition from arising), there is nothing to prohibit the colegislators from relying on Article 114 TFEU on the ground that the protection of other public interests such as animal welfare is the decisive factor in the choices made[31].

It is therefore clear that any new 'Kept Animals Regulation' should be based on Article 43 *and* on Article 114 of the Treaty of the Functioning of the EU. Indeed, the existing 'Transport Regulation' (Council Regulation (EC) No 1/2005) makes use of Article 114, and covers any animal that is moved for a commercial purpose. As such dogs and cats, just by way of example, are covered by the scope of the rules on live transport. Yet, at present, there is no degree of harmonisation in terms of the welfare and production standards of the very same animals when they are bred for sale before they are transported. This makes little sense, and needs to be corrected in any new regulation.

Likewise with aquatic animals. It seems bizarre that a fish raised in a farm should be afforded a level of protection that would be entirely absent for fish caught at sea — especially when the success of the aquaculture sector impacts upon the economic value of wild caught fish, and vice versa[32]. To extend this further, we also see no rationale — especially were Article 114 to be used as the legal basis — for limiting the scope to vertebrates. Invertebrate aquatic animals, particularly decapod crustaceans and cephalopods, have been evidenced as experiencing pain, suffering, distress and lasting harm (a fact recognised, as far as cephalopods are

[29] See [35], case 227/82 *Van Bennekom.* See also Case C-1/96 R v MAFF ex parte Compassion in World Farming
[30] Regulation (EC) No 1007/2009 (the Seals Regulation)
[31] see para. 41 of case T-526/10
[32] Dahl, E. & Oglend, A. 2014, Fish Price Volatility, *Marine Resources Economics* 29(4)

concerned, in recital 8 of Directive 2010/63/EU on the protection of animals used for scientific purposes[33], also adopted under Article 114 TFEU). In order to ensure that any new legislation is sufficiently future-proofed, it is vital that such species are included within the scope, in order to remove any distortions of competition, including by uniformly limiting the availability of produce if needed.

Indeed, case law supports the use of Article 114 TFEU for the implementation of EU-wide bans on practices in order to remove market distortions. For instance, Regulation 1523/2007 of the European Parliament and of the Council of 11 December 2007 banned the placement on the market, and the import to and the export from the Union, of cat and dog fur, and products containing such fur[34]. Similarly, Article 114 can also stipulate harmonised standards that are conditional for accessing the European market, as evidenced by the Regulation on veterinary medicinal products (Regulation (EU) 2019/6)[35]. Such conditions should now be employed to limit the availability of products that are derived from practices that would either already be illegal in the EU, or which would violate the 'Five Domains' on which animal welfare standards should be based[36]. One example is the availability of equine chorionic gonadotropin (eCG), a hormone produced by the placenta of pregnant mares and extracted from the blood of these same mares. At present, eCG is available within the European market, yet is harvested from mares in third countries, predominantly in South American countries, notably Argentina and Uruguay. It is impossible to collect this hormone in a way that is compliant with any notion of animal welfare, and its continued availability in Europe must come to an end.

2.4 - Impact on trade and animal welfare

Eurogroup for Animals also suggests expanding the scope of the revised legislation to imported goods. This could be done either explicitly in the revised legislation, or through the adoption of "mirror clauses", as promoted by the French government, which would allow to apply a series of EU legislation, including on animal welfare, to imports.[37]

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[33] See recital (8) of the Directive

[34] Articles 95 and 133 TEC (now Articles 114 (Harmonisation) and 207 (common commercial policy – providing the bases for the import and export ban). Recitals (4) and (6) note some Member States had introduced total or partial bans, with those differences between national measures constituting "barriers to the fur trade in general"

[35] See recital (64) and Article 97(10) of the Regulation

[36] Mellor 2016: "Updating Animal Welfare Thinking: Moving beyond the "Five Freedoms" towards "A Life Worth Living""

[37] Declaration of the French Minister for Foreign Trade and Economic Attractiveness, Mr. Riester Franck, at the National Assembly on October 28th, 2020, on the boycott of French products and on French and

First and foremost, applying a new 'Kept Animals Regulation' to imports would be in line with the wishes of EU citizens. According to the latest Eurobarometer on animal welfare, 93% wanted EU animal welfare standards to apply to imported goods[38]. Such an approach would also be effective in driving progress worldwide. According to a study carried out by DG SANTE on the EU's international activities on animal welfare, the EU's most effective tool to promote animal welfare abroad has been the EU regulation on welfare at the time of slaughter, which applies to imported products. In this study, foreign producers were surveyed and most of them considered they gain more from accessing the EU market than the cost of upgrading their animal welfare standards[39]. It is important to note that trade restrictions based on concerns related to animal welfare could be justified using the exception regarding public morals contained in the General Agreement on Tariffs and Trade, Article XX (a). This was confirmed by the WTO Dispute Settlement Body in the EC - Seal Products case.[40] Finally, implementing the revised legislation to imported goods would also have the positive side effect of improving the level playing field between EU and foreign producers.

EU trade policy. Available at: https://www.vie-publique.fr/discours/277318-franck-riester-28102020-politique-commerciale. Consulted on 14th April 2021.

[38] Eurobarometer (2016). *Op. cit.*

[39] European Commission (2017). Study on the impact of animal welfare international activities.Available at: https://op.europa.eu/en/publication-detail/-/publication/dc039353-ca9c-11e7-8e69-01aa75ed71a1. Consulted on the 13h of April 2021.

[40] Offor, I.H., Walter, J. (2017). GATT Article XX(a) Permits Otherwise Trade-Restrictive Animal Welfare Measures. Global Trade and Customs Journal. 2017; 12(4):158-166.

3 - The Five Domains

A second problematic aspect concerns the inadequacy of the framework that inspired Council Regulation 98/58/EC. Animal welfare science has greatly evolved since the 1990s and – if we exclude communications to the general public – the scientific community no longer refers to the Five Freedoms. Instead, it is now using frameworks, such as the 5 Domains/Provisions model, that truly acknowledge the sentience of farm animals, providing a prominent role to the animals' mental state and giving true meaning to the concept of a good life for the animal. This model, originally designed in 1994[41] is now widely applied to all fields of animal use, including four physical/functional domains, which determine the domain of mental experiences. The four physical domains are:

1. Nutrition/Hydration
2. Environment
3. Health/Functional status
4. Behaviour/Interaction

The model, scientifically updated several times throughout the years and most recently in 2020[42], stresses on the individual contribution to each animal of the environment it is surrounded by. Therefore, an animal's overall welfare status is not just determined by external (by human beings) interventions meant to "free" animals by certain negative experiences, but it is strictly dependent on the animal's interpretation of the reality. The emphasis is thus no longer only placed on humans minimising negative experiences, but also on **offering opportunities for positive experiences for all animals in human care**, of which farmed animals represent by far the biggest number, given that a shift is made to interpreting animal welfare as a result of the "interpretation" an animal gives to what is around (environment/other animals/human beings).

[41] Mellor, D.J., Reid, C.S.W. (1994). Concepts of animal well-being and predicting the impact of procedures on experimental animals. Improving the Well-being of Animals in the Research Environment. 1994. 3-18.

[42] Mellor, D.J., Beausoleil, N.J., Katherine E.L., McLean, A.N., McGreevy, P.D., Jones, B., Wilkins, C. (2020). The 2020 Five Domains Model: Including Human–Animal Interactions in Assessments of Animal Welfare. Animals. 2020, Oct.; 10(10):1870. Doi: 10.3390/ani10101870.

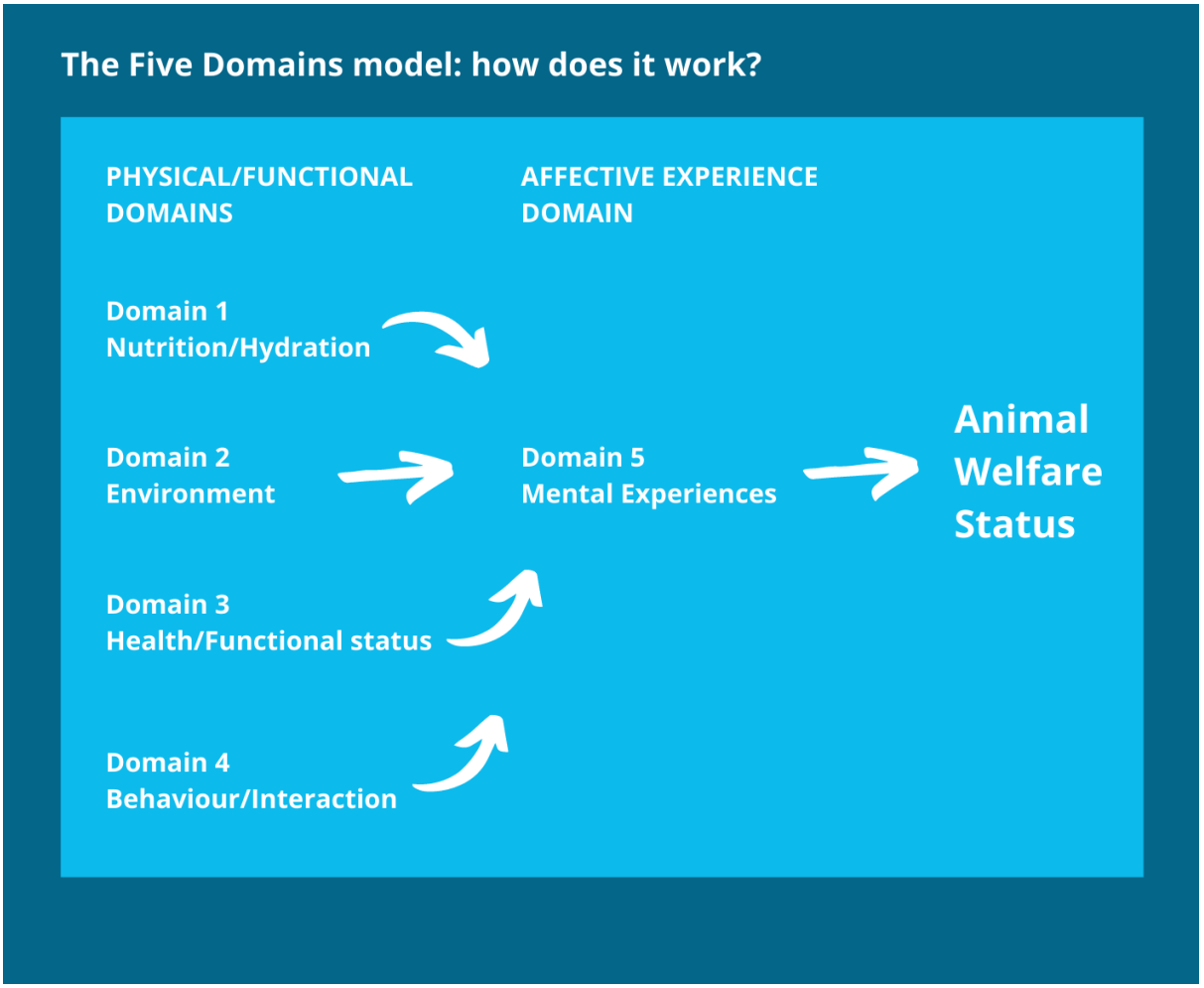

Figure 2 - The Five Domains model

The Five Domains model differs profoundly from the Five Freedoms. Firstly, it is dynamic because new conditions and consequences can be added, and new species can be included. Most importantly, the model provides an opportunity to emphasise positive over negative emotions of the animal. It recognises that both experiences differ in their variety, frequency, duration and intensity and will depend on resources and management on the one hand, and on the animal species on the other. It is the global effect of all the conditions (positive and negative) that animals experience during their lives that determine their mental status, and, ultimately, their general welfare status (see also Figure 2). The science of animal welfare has evolved in the direction of shifting attention away from the mere "care of animals" towards their psychological well being – of which physical well being is one component as well as the ability to express natural behaviours.

3.1 - Towards good lives (by law) for all farmed animals

The successive revisions of the Five Domains model were based on the "scientifically supported understanding that animals may have pleasurable experiences", which, in turn, determine a positive affective/mental state, fundamental for good welfare. Examples of external circumstances that can promote pleasurable experiences are, for instance:

- **(Controlled) variability:** providing optimal balance between predictability/controllability and novelty/unpredictability.
- **Appropriate space:** for species-specific needs for movement and exercise.
- **Choice:** the possibility to choose preferred sites for resting, thermal comfort and elimination behaviours; the possibility to engage in species-specific social behaviours and other affiliative behaviours (e.g. maternal or group care of the young, allogrooming, etc.).
- **Variety:** for instance, the availability of different feeds with attractive smells, tastes and textures.
- **Exploration:** environmental features that encourage exploratory and foraging behaviours for the desired duration.

Based on the latest scientific evidence, the possibility for kept animals (farmed or otherwise) to engage in behaviours with the above-described characteristics promotes good welfare as it stimulates feelings of comfort, pleasure, interest, confidence, control. The list above is not complete and only presents some examples of opportunities for activities that are severely limited for most farmed animal species reared industrially across the EU (except for some niche sectors and, in some respects, in organic farming). **We cannot stress enough the importance of providing good welfare as fundamental means to reduce the use of antimicrobials in livestock farming and aquaculture, as required by the Farm to Fork Strategy**.

3.2 - The Five Domains model: from science to EU law?

From a regulatory perspective, the model and its associated examples can be useful as an updated theoretical framework to **look at what matters and should therefore be provided to the different farmed animal species (without exclusion).** This will, in turn, determine what should be established by law to ensure that the first four domains maximise the positive conditions for the animals, and accordingly what should be measured for enforcement. Looking at Art. 3 of the Directive from the perspective of the Five Domains, the second part should no longer be centred on "avoiding unnecessary suffering" and be revised to stress that all farmed animals

should be provided with the necessary resources and type of management that enable them to fully satisfy their species-specific physical requirements (domains 1-4) in order to maximise positive experiences and to promote a positive mental state, which is the basis for good animal welfare.

We advocate for the use of **science-based robust indicators** to measure the physical domains 1-4 (based on Welfare Quality, AWIN, AssureWel or other available and validated methodologies). In this context, the presence of measurable indicators that are linked to positive (good body condition score, absence of mutilations, no lameness, low morbidity and mortality, appropriate resources, positive behaviours, etc.) and negative conditions (e.g. presence of injuries, routine mutilations, behavioural stereotypies or other problems, diseases) should be used as a means for competent authorities to take corrective actions (under administrative or criminal law). Concerning domain 5, the general principle that animals should have positive mental experiences should certainly be included in the revised legislation. Although more difficult to "enforce" as by definition mental states are not directly quantifiable, both the Welfare Quality and AWIN protocols' developed behavioural indicators and a Qualitative Behaviour Assessment (QBA) that are useful and validated tools to gain an indirect indication of the animals' overall mental experiences at individual and at group level. The latest update of the model (2020) includes guidance on how to evaluate the negative and/or positive impacts of human behaviour on animal welfare, which is extremely relevant for the training of stockpersons.

We are convinced that any revision of the current animal welfare acquis should be based on best available and species-specific practice for the four physical domains, so that the animals are in the best possible position to experience positive affective states. Such a revision should be flexible enough to allow for recent advancements in animal welfare science to be timely incorporated. For instance, the science of crustacean and insect cognition is still evolving, and as these are two increasingly important and constantly growing industries in the EU, legislative tools need to be agile enough to be quickly adapted to best available science.

3.3 - Revising the EU animal welfare acquis on the basis of the Five Domains model

Below are some concrete examples of how a revision of the current animal welfare acquis could incorporate the Five Domains model even without explicitly mentioning them. We took concrete examples based on current lawful practice and suggested

ways in which they could be transformed by revised animal welfare legislation. As farmed animals are completely dependent on human intervention for their basic and enhanced needs, concrete and well-defined rules are needed to prevent negative conditions and promote, as much as possible, positive conditions. This is arguably not the case at the moment.

Domain 1: Nutrition/Hydration

This domain refers to the water and food available to animals. Figure 3 shows an overview of the negative and positive consequences associated with different nutritional opportunities/deficiencies. Food and water intake in farmed animals can be lawfully restricted or, conversely, happen in ways that are detrimental to animal health and welfare. Examples include the severe feed restriction in broiler parent animals (not covered by the Broiler Directive)[43] and breeding sows, which are typically only allowed to eat 40% of the amount of feed they would voluntarily eat[44]. The chronic hunger induced by feed restriction can lead to frustration, aggression, stereotypies and certain health issues. In most monogastric farmed animal species, a lack of feed variety is extremely common. In ruminants in zero-grazing systems and feedlots, the monotonous and high-concentrate rations cause health problems (sub-acute ruminal acidosis, bloating)[45]. Conversely, some species, notably duck and geese used in foie gras production, are fed excessive quantities of calorie-dense feed by force-feeding to induce the liver steatosis that is necessary to obtain the finished product. This procedure has been clearly shown to be detrimental to their health and welfare. These negative health and welfare consequences can and should be prevented by including species-specific provisions in the revised legislation, as they depend entirely on the stock persons in charge of the animals. Such provisions should include (only by way of examples):

- **Ad libitum feeding** of breeding animals by introducing bulk feed with high fibre content to induce satiety; feed should have appropriate nutritional

[43] Eurogroup for Animals, 2020. The welfare of broiler chickens in the EU- From science to action. Available at: https://www.eurogroupforanimals.org/sites/eurogroup/files/2020-11/2020_11_19_eurogroup_for_animals_broiler_report.pdf. Consulted on 12th of April 2021.

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[45] Lorenz, I. (2015). Subacute Ruminal Acidosis (Chronic ruminal acidosis, Subclinical ruminal acidosis). MSD Veterinary Manual. 2015, May. Available at: https://www.msdvetmanual.com/digestive-system/diseases-of-the-ruminant-forestomach/subacute-ruminal-acidosis. Consulted on 13th of April 2021.

characteristics but also, and for all categories of animals, be varied, healthy, and induce satiety.

- Access to good quality, well managed **pasture** in season for grazing animals.
- **Limit to the proportion of concentrates** in the rations of ruminants.
- **Deletion of the minimum liver weight** of livers destined to **foie gras** production so that producers can abandon the practice of forced feeding (necessary to reach the required liver weights under the current poultry marketing standards) or, as an alternative, ban on force-feeding.
- **Minimum provision of water flow**, directives can be quite vague and not very precise on the amount of water provided (not just focusing on the amount of devices to provide water
- Fish and especially carnivorous fish have **complex nutritional needs** that are often not well understood.

Nutritional Conditions and their Associated Affects

Negative conditions		Positive conditions	
Nutritional inadequacies	**Negative affects**	**Nutritional opportunities**	**Positive affects**
Restricted water intake	Thirst	Drink correct quantities of water	Wetting/quenching pleasures of drinking
Excessive water intake	Water intoxication		
Restricted food intake	Hunger (general) Hunger (salt) Weakness of starvation	Eat enough food	Postprandial satiety Pleasure of salt taste
Poor food quality	Malaise of malnutrition	Eat a balanced diet	Pleasures of food tastes/smells/textures Masticatory pleasures
Low food variety	Eating related boredom		
Voluntary overeating	Feeling bloated or overfull	Eat correct quantities of food	Comfort of satiety
Force feeding, excessive energy intake	Gastrointestinal pain, nausea/malaise		Gastrointestinal comfort

Figure 3 - Domain 1, Nutritional conditions and their associated affects.

Domain 2: Physical Environment

This domain, if applied to farmed animals, concerns the impacts of the physical environment in which animals are kept (Figure 4). Examples of inadequate physical environments for farmed animals that are lawful in the EU but lead to a number of health and welfare issues, as well as the need for painful mutilations include: excessively high maximum stocking densities for pigs; excessively high maximum stocking densities for broiler chickens (thanks to derogations in the Broiler Directive); lawful use of "enriched" cages for laying hens; lawful use of gestation and farrowing crates for breeding sows; absence of regulations for rabbits, quails, turkeys, goats, sheep, beef and dairy cattle, which lead to a number of unaddressed animal health and welfare problems (in spite of existing EFSA opinions), such as lameness, mastitis, high mortality, fracture, inadequate catching, excessive use of antimicrobials, etc. We could also mention here the difficulty for competent authorities to properly monitor and enforce air quality parameters, which are fundamental to preserve animal health and welfare when high numbers of animals are reared indoors.

Provisions to promote positive health and welfare, especially under highly human-dependent systems, should include (examples):

- **Ban on the use of extreme confinement systems** (cages and/or enriched cages for laying hens, broiler and laying hen breeders, quail, duck, geese and rabbits; gestation and farrowing crates and individual calf pens).
- Maximum levels of noxious gases in indoors systems or chemicals in water defined by law for all species.
- **Space allowances** that allow species-specific **general activity** (for all animals simultaneously) and comfort in resting simultaneously, plus species-specific maximum (and sometimes minimum) stocking densities.
- Species-specific **lighting regimes** that optimise rest/activity cycles.
- Obligation to provide species-specific **comfortable, clean, dry lying substrates**.
- Shelter (either natural or man made) from the heat, the elements, and predators, to accommodate all animals allowed or kept outdoors.
- For fish there is a need to monitor and maintain the key species-specific water quality parameters.

Physical Environmental Conditions and their Associated Affects

Negative Conditions		Positive Conditions	
Unavoidable Physical Conditions	**Negative affects - Forms of discomfort**	**Enhanced physical conditions**	**Positive affects - Forms of comfort**
Close confinement, overcrowding	Physical: general stiffness, muscle tension	Space for spontaneous locomotion	Physical comfort
Unsuitable substrate, wet/soiled ground	Physical: musculoskeletal pain, skin irritation	Suitable substrate, well drained ground	Physical comfort
Air Pollutants: NH2, CO2, dust, smoke	Respiratory: breathlessness, air passage irritation/pain	Fresh air dissipates contaminants	Respiratory comfort
Aversive odours	Olfactory: revulsion at foul or repellent odours	Foul smells dissipated by fresh air and good hygiene	Olfactory comfort
Thermal extremes	Thermal: chilling, dampness, overheating	Effective shelter and shade available	Thermal comfort
Loud or otherwise unpleasant noise	Auditory: impaired hearing or ear pain	Effective noise control measures are in place	Auditory comfort
Light: inappropriate intensity	Visual: eye strain due to flashing, glare or darkness	Light intensity kept at tolerable levels	Visual comfort
Monotony: ambient, physical, lighting	Malaise from unnatural constancy	Within-day environmental variability maintained	Congenial variety and predictability
Unpredictable events	Anxiety, fear, hypervigilance	Predictability achieved by established routines	Relaxation based ease and calmness
Physical limits on rest and sleep	Exhaustion	Conditions conductive to rest and sleep	Well rested

Figure 4 - Domain 2: Physical Environmental Conditions and their Associated Affects

Domain 3: Health

This domain concerns the effects of injury, disease and physical fitness on animal welfare (figure 5). The notion that farmed animals must be maintained in (reasonably) good health is well ingrained in EU legislation, especially as this aspect influences productivity and rentability as well as food safety (i.e. public health). Hence, most animal welfare indicators scientifically validated so far deal with signs

of disease, injuries, and other conditions, including routine husbandry procedures, that are likely to cause pain (be it acute or chronic). Due to the serious health consequences of extreme overfeeding or underfeeding, these conditions are included under the domain of health. Finally, fitness level (muscle condition, bone depletion) is also included here because these conditions make the animals prone to injuries.

Examples of lawful practices that are detrimental to animal health include the **genetic selection for fast growth in broiler chickens** (which compromises, on the one hand, the welfare of parent stock, and on the other the fitness of broiler chickens)[46]; use of **highly productive strains of laying hens**, which is positively associated with bone depletion (osteoporosis)[47]; **selection for high milk yield in dairy cattle**, which causes a high incidence of mastitis[48]; **painful husbandry procedures** (disbudding/dehorning of dairy calves and dairy goats; castration and tail docking of piglets and lambs; castration of bull calves; caponisation; beak trimming, etc.)[49]; **inadequate cubicle design** and lying substrates for dairy cows, causing hock lesions, lameness, and exacerbating mastitis[50]; **confinement in gestation and farrowing crates** for breeding sows, causing bursitis and shoulder ulcers[51]; **inadequate flooring and cleanliness**, causing or exacerbating lameness, mastitis, and hock lesions in

[46] Eurogroup for Animals (2020). *Op. cit*.

[47] Eurogroup for Animals (2019). Optimising laying hen welfare in cage-free systemS: Working towards a smooth transition in European egg production. Available at: https://www.eurogroupforanimals.org/sites/eurogroup/files/2020-03/E4A-Optimising_Laying_Hens_Welfare.pdf . Consulted on 15th of April 2021.

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[49] Kleinhenz, M.D., Viscardi, A.V., Coetzee, J.F. (2021). Invited Review: On-farm pain management of food production animals. Applied Animal Science. 2021, Feb.; 37(1):77-87. Doi: 10.15232/aas.2020-02106.

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[51] Bonde, M., Rousing, T., Badsberg J.H., Sørensen J.T. (2004). Associations between lying-down behaviour, problems and body condition, limb disorders and skin lesions of lactating sows housed in farrowing crates in commercial sow herds. Livestock Production Science. 2013; 87(2-3):179 - 187.

pigs[52], dairy[53] and beef cattle[54]; **forced feeding** of excessive quantities of calorie-dense feed to induce liver in ducks and geese used in foie gras production; feeding **low quality colostrum and milk replacement[55]** an/or no fibrous feed to dairy calves[56]. It can be noted that the presence of injury or disease can lead to behavioural abnormalities in farmed animals, thus further compromising their welfare.

Achieving or maintaining good health and fitness arguably leads to a wide range of positive affective experiences and can be instrumental to reaching the goal of reducing the sales of antimicrobials for livestock by 50% by 2030, as indicated in the Farm to Fork Strategy. Any revision of the EU animal welfare acquis should include dramatically improved husbandry practices, facilities design and environmental management as well as veterinary attention (and here there is an overlap of several domains) in order to maximise the welfare benefits of keeping animals in good health. Such measures should include (these are only some examples):

- Use of higher welfare, slower growing breeds of broiler chickens.
- Selection of strains of laying hens for bone health and lower incidence of feather pecking.
- Adapted cubicle size and design for dairy cows; no tie stalls.
- Compulsory herd health plan to prevent and, if necessary, address lameness and mastitis in dairy cattle.
- Selective dry cow treatment for dairy cows.
- Total ban on all routine painful husbandry procedures, unless in exceptional cases, for demonstrable health reasons, carried out by a veterinarian under anaesthesia and analgesia.

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[52] Gonyou, H.W., Lemay, S.P., Zhang, Y. (2006). Effects of the environment on productivity and disease. In: Straw, B.E., Zimmerman, J.J., D'Allaire, S., Taylor, D.J. (2006.). Diseases of Swine. 9th Edition. Wiley-Blackwell, 2006. pPag. 1027-1038.

[53] World Organization for Animal Health (OIE) Terrestrial Animal Health Code. Chapter 7.11: Animal Welfare and Dairy Cattle Production Systems. Available at: https://www.oie.int/fileadmin/Home/eng/Health_standards/tahc/current/chapitre_aw_dairy_cattle.pdf . Consulted on the 12th of April 2021

[54] Park, R.M., Foster, M.,Daigle, C.L. (2020). A scoping review: the impact of housing systems and environmental features on beef cattle welfare." Animals. 2020, Apr.; 10(4)):565. Doi: 10.3390/ani10040565.

[55] Yang, M., Zou, Y., Wu, Z.H., Li, S.L., Cao, Z.J. (2015). Colostrum quality affects immune system establishment and intestinal development of neonatal calves. Journal of Dairy Science. 2015, Oct.; 98(10):7153-7163. Doi: 10.3168/jds.2014-9238.

[56] Webb, L.E.,Bokkers, E.A.M., Engel, B., Gerrits, W.J.J., Berends, H., van Reenen, C.G. (2021). Behaviour and welfare of veal calves fed different amounts of solid feed supplemented to a milk replacer ration adjusted for similar growth. Applied Animal Behaviour Science. 2012; 136, (2-4):108-116.

- Adequate flooring to maximise species-specific walking comfort.
- Provision of clean and comfortable lying surfaces.
- Keeping dairy cows with their calves at foot with gradual weaning.
- Ban on forced feeding or at least elimination of minimum liver weights from the poultry marketing standards so that foie gras can be produced without forced feeding.
- The immune systems (and appetites) of fish are especially vulnerable to stress. A short period of stress may bring long lasting effects and especially increased instances of disease. Common aquaculture practices that are inherently stressful should therefore be carried out with the minimum suffering, stress, injury, and time to return to feeding.

Health Conditions and their Associated Affects

Negative conditions		Positive Conditions	
Presence of...	**Negative affects**	**Minimal or no**	**Positive affects**
Injury: acute, chronic, husbandry mutilations Disease: acute, chronic	Pain (many types), breathlessness, debility, weakness, sickness, malaise, nausea, dizziness	Injury Disease	Comfort of good health and functional capacity
Functional impairment: due to limb amputation, other therapies, genetic, lung, hearth, vascular, kidney, gut, neural or other problems		Functional impairment	Comfort of good health and functional capacity
Obesity or leanness: physical and metabolic consequences	Affects of being too fat or thin, and of metabolic and pathophysiological sequelae	Extreme body condition scores	Comfort of good health and functional capacity
Poisons	Many affects due to mode of action	Poisoning	Comfort of good health and functional capacity
Poor physical fitness due to muscle deconditioning	Physical weakness and exhaustion	Poor fitness (fitness level good)	Vitality of fitness and pleasurably vigorous exercise

Figure 5 - Domain 3 - Health Conditions and their Associated Effects.

Domain 4: Behavioural Interactions

Domain 4, recently renamed "Behavioural Interactions" refers to animal behaviours as indicative of how they perceive reality based on the experiences and interactions to which they are exposed. Animals are intrinsically motivated to engage with their environment, by which we mean the physical environment, other animals (figure 6), and humans (figure 7). In the case of farmed animals, these three types of interaction can be hindered and/or enhanced by the circumstances in which the animal is reared.

Examples of behaviours that are lawfully hindered (impeded) under most industrial rearing conditions in the EU are **access to pasture** for dairy cattle and beef cattle in the finishing phase in intensive systems; **foraging** for most foraging species (poultry, pigs) in confined systems; **nest building** for sows; **maternal care** of the young for poultry and dairy cattle, with severe restrictions for sows; **hiding or escaping** from aggressive interactions in pigs; **perching** and **dust-bathing** for chickens; **wallowing** for pigs; **undisturbed resting** for most species; **outdoor access** for most species.

Hindering behaviours for which animals are strongly motivated can induce frustration, redirected behaviours, aggression and other problems that can also affect animal health. Conversely, **providing animals with opportunities to express behaviours for which they are strongly motivated** can promote positive emotions/affective states. These include, but are not limited to, the following:

- Building a nest ahead of farrowing for sows.
- Rooting in the soil, foraging, wallowing (pigs).
- Being able to escape or isolate oneself from unwanted interactions.
- Caring for and bonding with a newborn calf for dairy cows.
- Engaging in social interactions in stable groups (pigs, cattle).
- Perching, foraging, dust-bathing for poultry.
- Playing, investigating, resting, anticipating feeding and changing swimming behaviour for fish.
- Grazing on good quality pasture for cattle.
- Availability of water bath for waterfowl.

Any revision of EU animal welfare legislation should be aimed at specifying measures and provisions that allow animals to express a range of behaviours that can lead to positive experiences within the specific farming system (with the necessary adaptations to the system in place).

Interactions with the Environment

Exercise of "agency" is impeded	Negative affects	Exercise of "agency" is promoted	Positive affects
Invariant, barren, confined environment (ambient, physical, biotic)	Boredom, helplessness Depression, withdrawal	Varied, novel environment	Interested, pleasantly occupied
Inescapable sensory impositions Choices markedly restricted Environment-focussed activity constrained Foraging drive impeded	Various combinations: startled by unexpected events, neophobia, hypervigilance, anger, frustration, negative cognitive bias	Congenial sensory inputs Available engaging choices Free movement Exploration, foraging	Likes novelty, post-inhibitory rebound Calm, in control Engaged by activity Energised, focussed

Interactions with other animals

Exercise of "agency" is impeded	Negative affects	Exercise of "agency" is promoted	Positive affects
Animal-to-animal interactive activity constrained	Loneliness, depression, yearning for company Thwarted desire to play Sexual frustration Thwarted hunting drive	Bonding/reaffirming bonds Rearing young Playing Sexual activity Hunting	Affectionate sociability Maternal, paternal or group rewards Excitation/playfulness Sexually gratified Alert engagement, highly stimulated
Significant threats Limits on threats avoidance, escape or defensive activity Limitations on sleep/rest	Anger, anxiety, fear, panic, insecurity, neophobia Exhaustion	Absence of threats Using refuges, retreat or defensive attack Sleep/rest sufficient	Secure, protected, confident Energised, refreshed, post inhibitory rebound

Figure 6 - Domain 4: Behavioural Interactions. Interactions with the environment and other animals. Effects of hindering and enhancement.

The quality and frequency of human-animal interactions can affect animal welfare and quality of life in several ways; therefore, most animal welfare assessment protocols include measures to assess at least aspects such as fear of humans. In some species, good human-animal interactions can promote productivity, ease of handling, as well as workers' satisfaction and sense of worth (REFS). Good human-animal interaction also improves workers' safety.

Scientifically, it has been demonstrated that "*(1) the attitudes, motivation, understanding and skills training of people influence the nature of their behaviour towards animals, (2) it is the impact of their behaviour on the animals that elicits animals' negative and/or positive affective experiences and (3) the nature of the animals' experiences may be inferred from their behavioural and physiological responses*"[57].

[57] Mellor, D.J., et al. (2020). *Op. cit.*

Interactions with humans

Negative human attributes and behaviour	Animals behaviour and negative affects	Positive human attributes and behaviour	Animals behaviour and positive affects
Attitude: uncertain, fearful, indifferent, insensitive, impatient, oppressive, belligerent, domineering, callous, cruel, vindictive Voice: hesitant, angry, loud, shouting Aptitude: inexperienced, unskilled, untrained, unqualified	Behaviours (e.g.): long flight distance, hypervigilant, attack/fight, hyper-reactive, escape avoidance, freezing, cowering, appeasing, withdrawn, non-compliant	Attitude: confident, caring, sensitive, patient, kind, empathetic Voice: confident, calm, clear, encouraging, pleasantly rhythmic Aptitude: experiences, skilled, trained, qualified	Behaviours: short flight distance, calm alertness, at ease with imposed hands-off or hands-on contact, compliantly responsive, explores novel events, seeks contact, variably bonded with humans
Handling/controlling: erratic, rough (slap, hit, kick, grab, poke, beat, whip); excessively forceful, violent; punishment focussed; more negative pressure than is needed for training objective	Affects: anxiety, fear, panic, terror, neophobia; insecurity, confusion, uncertainty, persistent unease; helplessness; pain from injuries; negative cognitive bias	Handling/controlling: skillful, gentle (stroke, touch, push, guide); firm, tempered, restrained; reward-focussed; mimics allo-grooming by conspecifics; using subtle pressure cues; secondary reinforcers and timely release of aversive stimuli	Affects: calm, confident, at ease, feels in control; enjoys variety; finds being bonded with humans rewarding

Figure 7- Domain 4: Behavioural Interactions. Interactions with humans. Potential effects of negative and positive human attributes and behaviour.

Typically, EU legislation refers to "appropriately trained" or "skilled" staff and in some circumstances stockpersons are required to acquire certificates of competence. However, we argue that all operators working with live animals in all sectors should receive updated training on species-specific positive human-animal interaction, whose contents should be clearly defined by EU law.

Examples of aspects that would require training for livestock handlers include:

- Species-specific foundations in animal behaviour and welfare.

- Understanding and applying animal welfare indicators during daily inspections.
- Correct interventions during parturition/farrowing and other potentially painful/stressful events or procedures.
- Correct techniques to move the animals.
- Correct use of the voice, body language, moving aids.
- Animal friendly loading, unloading and catching techniques (with special training for catching teams for poultry).

Domain 5: Mental experiences

The Five Domains model functions as a blueprint for a "systematic, structured, comprehensive and coherent animal welfare assessment"[58]. The primary role of the model is to identify the most important internal (i.e. relative to the animals' intrinsic motivations) and external (i.e. input-based) factors that generate specific negative and positive mental states in animals. There is correspondence between the four principles of the European Welfare Quality System ("good nutrition", "good environment", "good health" and "appropriate behaviour"), which remain the core of farmed animal welfare management, and the Five Domains model. This means that, with the necessary adaptations and updates, the animal welfare indicators developed within the WQ system remain valid to verify the effects of interventions under Domains 1-4. Domain 5 adds an additional dimension by focussing on "The overall affective experience in the mental domain, [which] equates to the welfare status of the animals."[8] In practice, knowledgeable managerial interventions under Domains 1-4 are what can determine a positive mental state (Domain 5). In itself, the mental state of an animal can only be cautiously inferred, although the Qualitative Behaviour Assessment[59] (QBA developed under the Welfare Quality Project[60]) can possibly be useful as guidance.

The ultimate goal of any managerial intervention or piece of legislation should be to obtain "good lives" for farmed animals. The good news is that we do not need to reinvent the wheel to achieve this. It is only a matter of raising the bar - shifting the mentality from "avoidance of unnecessary pain and distress" to **striving to create the conditions for all farmed animal species to experience positive mental experiences** - and using existing and validated scientific frameworks to guide the legislative work.

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[58] Mellor, D.J. (2017). Operational details of the five domains model and its key applications to the assessment and management of animal welfare. Animals. 2017, Aug.; 7(8):60. Doi: 10.3390/ani7080060.

[59] Wemelsfelder, F. (2007). How animals communicate quality of life: the qualitative assessment of behaviour. Animal Welfare. 2007, May; 16(5):35-31.

[60] Available at: http://www.welfarequality.net/en-us/home/.

Conclusion

The EU has led farm animal welfare standards around the world for decades, and we must ensure that the bloc continues to do so. Ensuring that standards meet, as a minimum, the five domains model, would mark a bold, qualitative step forward in terms of the legal protections afforded to all animal species that are 'farmed' for commercial use, or commonly kept on farms.

Eurogroup for Animals will, in the coming period, elaborate further on many of the individual species-specific standards that we believe would meet the requirements of the five domains model. In doing so, we hope to further contribute to the ongoing policy discussions and choices, and to ensure that the opportunities afforded by the Farm to Fork strategy are fully seized.

Annex: fur farmed animals

I. Fur farmed animals: legislative framework and statistics

Animals farmed for fur fall under the scope of the Council Directive 98/58/EC[61] concerning the protection of animals kept for farming purposes and of Regulation (EC) No 1099/2009 on the protection of animals at the time of killing. The 1999 Council of Europe Recommendation contains species-specific recommendations, relating to foxes, mink and chinchillas, but not raccoon dogs.

Fur farming has been banned in several Member States and neighbouring countries: Austria (2005), Belgium (regions Wallonia and Brussels, 2018, Flanders to be implemented by 2023), Croatia (2017), Czechia (2019), Luxembourg (2018), North Macedonia (2014), the Netherlands (2020) Serbia (2019), Slovenia (2016), and the UK (2000). Fur farming is banned in Bosnia and Herzegovina from 2028, but the last Bosnian farm closed in 2020. In Switzerland and Germany fur farming has phased out due to stricter keeping regulations. A phase-out of fur farming is currently underway in France, Ireland, Norway and Slovakia. Finland, Poland, Lithuania and Greece are the main locations for fur farms. Denmark banned fox farming in 2009 and the last farm closed by January 2021. In Sweden, the last fox farming closed in 2001 after stricter animal welfare rules entered into force.

Up to 2019, around 27 million mink pelts were produced in the EU yearly. Mink (*Neovison vison*) is the main species reared for fur, constituting 94% of the pelt production. Other species that are farmed for fur in the EU, but to a lesser extent, are foxes (*Vulpes vulpes),* chinchilla (*Chinchilla lanigera*) and raccoon dogs (*Nyctereutes procyonoides*). Mainly due to the susceptibility of mink to SARS-CoV-2, the number of mink fur farms decreased in 2020 from 2,900 to 1,294 farms, of which 755 mink farms were reported to be active (December, 2020). Acknowledging that fur farming represents a weighty risk to public health, in November 2020 Denmark decided culling its entire mink population after 290 of its 1,147 fur farms were found to have been affected. In June 2020, The Netherlands decided for an early closure of fur farming to end the practice earlier than the phase-out by 2024. Sweden and Italy decided for a breeding ban for 2021 in January.

[61] Council Directive 98/58/EC of 20 July 1998 concerning the protection of animals kept for farming purposes. Official Journal, L221/23, 08.08.98. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31998L0058&from=EN. Consulted on the 21th of April 2021.

II. Fur farmed animals

II.1 Current problems

As reported over the years by animal advocacy organisations, the needs of animals kept for fur purposes are not met and can't be met on fur farms, which contravene the general rules laid out by the EU animal welfare regulatory framework.

The Directive 98/58/EC, in Annex 21, states that "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".

The European Convention on the Protection of Animals kept for Farming Purposes[62], in Article 1.b., provides that: "No animal shall be kept for its fur if [….] b. the animal belongs to a species whose members, despite these conditions being met, cannot adapt to captivity without welfare problems." The Scientific Committee on Animal Health and Animal Welfare (SCAHAW) highlights[63] that, from a welfare point of view, the crucial aim is a well-adapted individual, regardless of the extent to which this is due to genetic or ontogenetic events[64]. Important characteristics of domesticated animals include a capacity to live under anthropogenic constraints without problems such as reduced reproductive success or substantial fearfulness towards humans. Carnivores that roam over a large territory in the wild are more likely to display evidence of stress and psychological dysfunction in captivity, including high rates of stereotypical pacing and infant mortality.[65] Generally, in comparison with other farm animals, species farmed for their fur have been subjected to relatively little active selection except with respect to fur characteristics[66].

Numerous scientific studies have extensively pointed out that the behavioral needs of mink and foxes, the main species reared for fur, cannot be met in fur farms. It is not possible to significantly improve welfare as long as these active carnivores are

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[62] Recommendation Concerning Fur Animals, adopted by the Standing Committee of the European Convention for the Protection of Animals kept for Farming Purposes on 22 June 1999. Available at: https://www.coe.int/t/e/legal_affairs/legal_co-operation/biological_safety_and_use_of_animals/farming/Rec%20fur%20animals%20E%201999.asp. . Consulted on 21st April 2021.

[63] SCAHAW (2001). The Welfare of Animals Kept for Fur Production. Report of the Scientific Committee on Animal Health and Animal Welfare. p. 176.Available at: https://ec.europa.eu/food/sites/food/files/safety/docs/sci-com_scah_out67_en.pdf. Consulted on the 21st of AprilArpil 2021.

[64] Pickett, H., Harris, S. (2015). The case against fur farming: A scientific review of animal welfare standards and 'WelFur'. Respect for Animals,Nottingham, 2015..

[65] Pickett, H. & Harris, S. (2015). *Op. cit.*

[66] SCAHAW (2001). *Op. cit.*.

kept in wire mesh battery cages without the possibility to express many of their species-specific behavior. Stereotypies, repetitive movements such as circling or pacing in the cage, indicate that animal welfare is compromised. Cage enrichment has shown not being sufficient to eliminate stereotypic behaviour[67].

Since the most important aspect of domestication from a welfare perspective is the unique ability of domesticated species to interact with humans in a positive way[68], it is evident that the above mentioned provisions alone give sufficient grounds to illegitimate fur farming in the EU. However, this practice is still current in several Member States.

II. 2 Previous attempts to improve welfare of fur farmed animals in Europe have consistently failed

The animal welfare program WelFur was developed by the European Fur Breeders' Association (EFBA) in 2009 with the purpose of improving animal welfare for minks and foxes on fur farms. WelFur aims to serve as scientific reference for regulation and control of European fur farms, and as support to the European Commission's work on the development of a pan-European animal welfare framework law[69].

According to EFBA, the WelFur program is based on scientific knowledge and the Five Freedoms. WelFur attempts to mimic the European Commission's established Welfare Quality scheme for pigs, poultry and dairy cattle, which four principles (good feeding, good housing, good health and appropriate behavior) are inspired by the five freedoms.

Welfare Quality can be used to assess animal welfare in a range of farming systems, with varying potential to provide high standards of welfare. An important use of the Welfare Quality assessment system is as a research tool to evaluate different farming systems and practices. The WelFur protocols, on the other hand, have been developed for use in small wire cages, the only housing system currently used for fur farming purposes.

The cage system severely limits opportunities to perform highly-motivated behaviours and can therefore be considered to have low welfare potential. The WelFur

[67] Pickett, H., et al. (2015). *Op. cit.*,
[68] *Ibidem*.
[69] WelFur Science-based Animal Welfare Assessment. Available at: http://www.fureurope.eu/wp-content/uploads/2015/06/WelfurBrochure_June2016_light.pdf . Consulted on the 21st of April 2021.

protocols do not offer alternative systems or new, more animal welfare-friendly ways of fur farming. The inherent animal welfare problems of cage based fur factory farming have not been addressed and so will continue to affect animals on fur farms, regardless of whether the farm is certified or not.[70]

Another relevant aspect to be raised is how WelFur and Welfare Quality apply their categories and measurements. While the best category in Welfare Quality is "Excellent = very high animal welfare", in WelFur it is "Best current practice = best possible fur farm". This clearly shows that these are not systems to measure welfare, but a system to compare practices. Welfare Quality includes all possible practices in keeping animals and therefore are more reliable to measure animal welfare. It is not possible to get an "Excellent" by Welfare Quality if the animals aren't treated excellent, when WelFur can give farms the label "Best current practice" every time (low) criteria are met[71].

Since 'best current practice' involves the use of a farming system with low welfare potential, even the farms that score highest on the WelFur protocols will be providing a standard of welfare that most people would not consider to be acceptable.

Moreover, in contrast to the animals which over thousands of generations have been kept for farming purposes and for which the Welfare Quality was addressed, animals kept for the production of fur belong to species which have only been farmed more recently and which have had less opportunity to adapt to farm conditions[72].

Since the use of diverse production systems, as suggested by the Welfare Quality protocol, is not possible for fur farming, using this scale when it comes to animals kept for fur purposes is considered a misleading practice that does not represent a genuine attempt to equal high animal welfare.

A recent scientific review[73] of animal welfare standards has concluded that WelFur:

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[70] Fur Free Alliance (2019). Certified Cruel: Why WelFur fails to stop the suffering of animals on fur farms. Available at: https://www.furfreealliance.com/wp-content/uploads/2020/01/CertifiedCruel_FFA-Research-Report.pdf. Consulted on 21st April 2021.

[71] Harenius, A. (2018). WelFur and Minkhälsan in Sweden - The control programs on minks. Stockholm 2018.

[72] Recommendation Concerning Fur Animals, adopted by the Standing Committee of the European Convention for the Protection of Animals kept for Farming Purposes, Preamble. *Op. cit.*

[73] Pickett, H. et al. (2015). *Op. cit*..

- Have been ***specifically designed around the very serious limitations of current housing systems*** and generally reward the *status quo,* even where this is known to compromise welfare, rather than encouraging the development of alternative systems with the potential to provide a higher level of welfare.
- Do not adequately penalise practices that **fail to meet essential existing minimum standards** set out in the Council of Europe Recommendations.
- Do not address **inhumane handling and killing methods** and the lack of training for all personnel carrying out killing of fur animals.
- Downplay the importance of **serious injuries** that are associated with extreme suffering.
- Underestimate the true levels of **mortality and stereotypies**.
- Use **inadequate measures** of hunger, human-animal relationships and positive mental states.
- **Will not achieve its stated aims** of ensuring "a high level of animal welfare" on fur farms and functioning as "the new scientific reference" for fur-farmed species.
- Use complex scoring systems to combine different welfare measures into a single category indicating the overall welfare level - this approach allows high positive scores on some elements to mask **serious failings** on others.
- Do not take account of societal concerns and **score welfare only up to a ceiling of "best current practice"**.
- Would be **misleading** if used as the basis for a labelling system.

It is important to emphasize that the WelFur protocol was developed by researchers in collaboration with the fur industry to allow for an assessment of animal welfare on farms, without the involvement of other stakeholders. The WelFur protocol is not an assessment of animal welfare in relation to an "absolute" animal welfare level, nor is it assessing animal welfare on an individual animal level. It should be noted that a WelFur assessment does not guarantee that individual animals do not suffer from poor welfare[74].

[74] Fur Free Alliance (2019). *Op. cit.*

Considering the aforementioned facts, it becomes clear that WelFur should not be considered a reasonable standard protocol for animal welfare within the EU nor recommended or promoted to any extent.

II. 3 The Five Domains Model applied to fur farmed animals

The Five Domains Model has been largely adopted and it is well recognised as highly influential in the animal welfare arena, respecting the most contemporary scientific knowledge in this field.

Following the Five Domains approach, it is impossible for fur farming to fulfil the requirements of all those domains, no matter how far the improvement of the current fur farming system occurs.

When applying the Five Domains to assess fur farming, Veterinary Ireland has concluded that **fur farming fails on all domains except the provision of appropriate nutrition.** Farmed mink do not live in an environment that provides choice, appropriate shelter or a species appropriate comfortable resting area. The conditions experienced by farmed mink do not promote an environment that enhances fitness, but rather serves to protect the value of the animals' fur. Further, given the barren battery cages that farmed mink are confined to, there is little opportunity to provide any meaningful environmental enrichment. The behavioural restrictions inflicted on farmed mink can only lead to negative experiences (e.g. pain, fear, frustration) and therefore fail to maximise positive experiences[75].

Mentioning the WelFur programme, Veterinary Ireland asserts that it cannot prevent the welfare problems regularly encountered on fur farms, such as stereotypies and serious injuries. It has additionally concluded, given the nature of the animals concerned and the environment in which they are held, that there are simply no welfare standards or inspection regimes that would prevent such problems arising on a regular basis[76].

Since the above-mentioned species are wild animals, they are not domesticated in the same way as other farmed animals, such as cattle, pigs, sheep and poultry species, which are all herd or flock species that were domesticated thousands of years ago. By contrast, the animals used in the fur industry are wide-roaming

[75] Veterinary Ireland's Policy on Fur Farming, 2018, Available at: http://www.veterinaryireland.ie/images/Veterinary_Ireland_Policy_on_Fur_Farming_22.11.2018.pdf. Consulted on the 21st of April 2021.

[76] *Ibidem*

predators, which have undergone a very limited selective breeding process only addressing the characteristics of their fur. While it is possible to breed mink and silver foxes with many of the features typical of domesticated animals, this cannot occur on fur farms. The traits associated with selectively breeding for domestic phenotypes have negative impacts on fur quality. In contrast to domestication, the emphasis on fur farms has been to select for traits associated with pelt colour and quality, body size and litter size, with little attention paid to behavioural traits[77].

III. Conclusions

- As a welfare assessment protocol, **WelFur is considered inadequate to meet high animal welfare standards for animals kept for fur purposes**. Hence, these standards can not be used as a basis for improved welfare of fur farmed animals.
- The enrichment of existing housing systems is not sufficient to address the serious welfare problems inherent in cage systems. The use of undomesticated animals by the fur industry means that fear of humans and difficulties in handling and management would present insurmountable obstacles to the adoption of more extensive systems. It is therefore impossible for the needs of mink, foxes and other fur animals to be met by the fur industry[78].
- **Following the 5 Domains approach, a ban is the only viable solution to the serious welfare concerns when keeping wild animals for fur production.**

[77] SCAHAW (2001). *Op.cit.*
[78] Pickett, H. et al. (2015). *Op. cit.*

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