

# BVA and PVS position on farrowing crates for pigs

## Introduction

When examining the use of farrowing crates for pigs, the BVA and PVS consider the overarching principle that animals used by humans should have a life worth living and preferably a good life<sup>1</sup>.

In assessing the life lived by food-producing animals, we support the Five Domains model for welfare assessment which includes considerations on:

1. Nutrition
2. Physical Environment
3. Health
4. Behavioural Interactions (including interactions with the environment, interactions with other animals, and interactions with humans)
5. Mental state

The model differs from that of the 'Five Freedoms' and 'Five Needs' by distinguishing between the physical and functional factors that influence an animal's welfare and the overall mental or 'affective' state of the animal arising from these factors.

Production systems should offer living environments that allow for the performance of highly motivated behaviours; opportunities for positive welfare outcomes, such as comfort, pleasure, interest, and confidence; and excellent health outcomes.

## Farrowing crates

Pig farrowing crates confine sows before, during and after the birthing process (farrowing in the sow). Farrowing crates were introduced in the 1960s with the primary aim of reducing piglet mortality by restricting the movement over the sow and thus reducing instances of sows laying on her piglets. This largely came about due to increased breeding for bigger litters, reducing the size of the piglet compared to the sow making them more vulnerable to crushing combined with reduced breeding focus on sows' instincts to not crush her piglets<sup>2</sup>. Consumer demands, particularly in an economic downturn, mean that producing more pork meat efficiently has led to pork remaining one of the most popular meat sources for UK consumers<sup>3</sup>.

Crates do not allow the sow to move from side to side, perform any comfort behaviours, turn around or walk more than one pace forward and one pace backwards. They do allow a sow to stand up and lie down. They are designed to encompass a 'creep area' where piglets can maintain thermal comfort and sleep away from the sow.

Producers have valid concerns about piglet survival. Modern sows range in weight with some breeds reaching 300+kg. They give birth to multiple piglets weighing, on average 1-2kg each. Piglets are vulnerable when they are first born. They can suffer easily from chilling if they do not get to the udder and drink colostrum quickly. If the sow does not control her posture changes carefully, she is at risk of crushing her piglets. Although the crate does not prevent this entirely, the confining of the sow in place does offset some of that risk.

Farrowing crates are used widely throughout the UK and the EU. The Agriculture and Horticulture Development Board (AHDB) estimates that about 60% of the UK breeding herd is kept indoors and the vast majority of these will farrow in crates. According to Defra figures for 2024 the total pig breeding herd is 251,398 which continues a year-on-year reduction in the breeding herd size.<sup>4</sup>

## Legislative context

The four UK administrations have separate legislation and codes of practice.

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<sup>1</sup> British Veterinary Association. (2021). *BVA position on animal welfare*. <https://www.bva.co.uk/media/4273/full-bva-position-on-animal-welfare.pdf>

<sup>2</sup> Liu, T., Kong, N., Liu, Z., Xi, L., Hui, X., Ma, W., Li, X., Cheng, P., Ji, Z., Yang, Z., & Yang, X. (2022). *New insights into factors affecting piglet crushing and anti-crushing techniques*. *Livestock Science*, 265, 105080. <https://doi.org/10.1016/j.livsci.2022.105080>

<sup>3</sup> Agriculture and Horticulture Development Board (AHDB). (2023). *Primary pork prices remain favourable despite being knocked off top red meat spot*. <https://mainsitelive.azurewebsites.net/news/primary-pork-prices-remain-favourable-despite-being-knocked-off-top-red-meat-spot>

<sup>4</sup> Department for Environment, Food & Rural Affairs. (2024). *Livestock populations in England at 1 June 2024*. GOV.UK. <https://www.gov.uk/government/statistics/livestock-populations-in-england/livestock-populations-in-england-at-1-june-2023>

The Welfare of Farmed Animals (England) Regulations 2007 Schedule 8<sup>5</sup>, The Welfare of Farmed Animals (Wales) Regulations 2007 Schedule 8<sup>6</sup>, and The Welfare of Farmed Animals (Scotland) Regulations 2010 Schedule 6<sup>7</sup> require that:

*The dimensions of any stall or pen used for holding individual pigs must be such that the internal area is not less than the square of the length of the pig, and no internal side is less than 75% of the length of the pig, the length of the pig in each case being measured from the tip of its snout to the base of its tail while it is standing with its back straight.*

However, this does not apply to a female pig for the period beginning seven days before the predicted day of her farrowing and ending when the weaning of her piglets (including any piglets fostered by her) is complete. The maximum length of time for confinement for the Red Tractor assurance scheme is 5 weeks.<sup>8</sup>

The Welfare of Farmed Animals Regulations (Northern Ireland) 2012 specify general conditions under which farm animals shall be kept, requiring that freedom of movement shall not be restricted in such a way as to cause them unnecessary suffering or injury. The regulations also require that animals that are kept continuously confined should be given the space appropriate to their physiological and ethological needs in accordance with good practice and scientific knowledge.<sup>9</sup>

Part 4 of all four Schedules requires pregnant sows and gilts to be thoroughly cleaned before being placed in farrowing crates and given suitable nesting material in sufficient quantity unless it is not technically feasible for the slurry system used, in the week before the expected farrowing time.

Regulations are supplemented by statutory welfare codes:

- Code of practice for the welfare of pigs (England)<sup>10</sup>
- Pig welfare: code of practice (Wales)<sup>11</sup>
- Pig welfare guidance (Scotland)<sup>12</sup>
- Farmed animal welfare: pigs code of practice (Northern Ireland)<sup>13</sup>

## Advantages and disadvantages of farrowing crates

There are a number of advantages and disadvantages associated with the use of farrowing crates which we have set out in the diagram below using the Five Domains model for welfare assessment. A more detailed description can be found in the table at Annex A.

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<sup>5</sup> *The Welfare of Farmed Animals (England) Regulations 2007, Schedule 8.* (2007). Legislation.gov.uk. <https://www.legislation.gov.uk/ukSI/2007/2078/schedule/8>

<sup>6</sup> *The Welfare of Farmed Animals (Wales) Regulations 2007, Schedule 8.* (2007). Legislation.gov.uk. <https://www.legislation.gov.uk/wsi/2007/3070/schedule/8/made>

<sup>7</sup> *The Welfare of Farmed Animals (Scotland) Regulations 2010, Schedule 6.* (2010). Legislation.gov.uk. <https://www.legislation.gov.uk/ssi/2010/388/schedule/6/made>

<sup>8</sup> Red Tractor Assurance. (2025). *Housing, shelter, and handling facilities.* <https://redtractorassurance.org.uk/standards/housing-shelter-and-handling-facilities-11/>

<sup>9</sup> *The Welfare of Farmed Animals Regulations (Northern Ireland) 2012.* (2012). Legislation.gov.uk. <https://www.legislation.gov.uk/nisr/2012/156/contents/2019-12-14?view=plain>

<sup>10</sup> Department for Environment, Food & Rural Affairs. (2023). *Code of practice for the welfare of pigs.* GOV.UK. <https://www.gov.uk/government/publications/pigs-on-farm-welfare/caring-for-pigs>

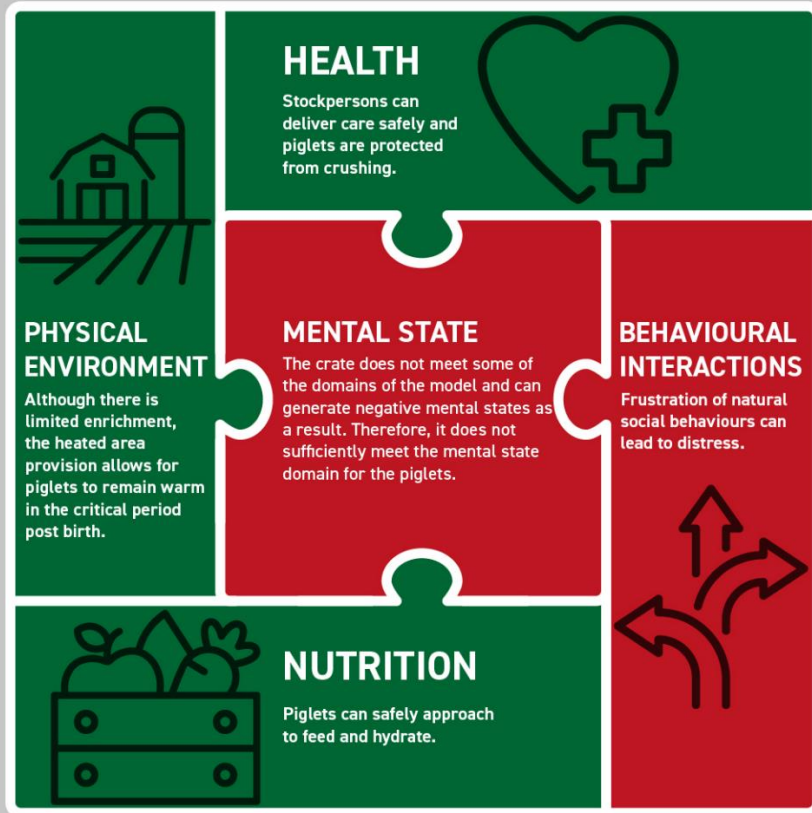
<sup>11</sup> Welsh Government. (2014). *Pig welfare: Code of practice.* Gov.Wales. <https://gov.wales/pig-welfare-code-practice>

<sup>12</sup> Scottish Government. (2023). *Pig welfare guidance.* Gov.Scot. <https://www.gov.scot/publications/guidance-welfare-pigs/>

<sup>13</sup> Department of Agriculture, Environment and Rural Affairs (Northern Ireland). (2013). *Code of practice for the welfare of pigs.* DAERA-NI. <https://www.daera-ni.gov.uk/sites/default/files/publications/dard/20.21.191%20pigs%20code%20of%20practice%20202421.PDF>

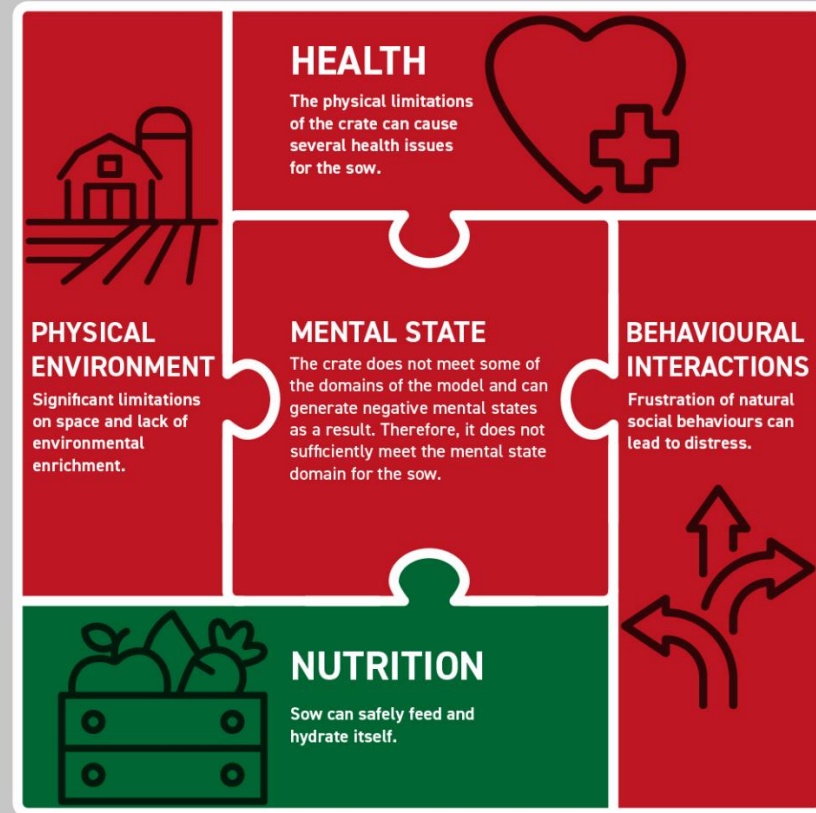
## The Five Domains Model for Animal Welfare Assessment

### PIGLETS



## The Five Domains Model for Animal Welfare Assessment

### SOWS



*Welfare domain considered to have been met (green) and welfare domain considered to have not been met (red).*

When looking at the current farrowing crate system with reference to the 5 Domains Model for animal welfare assessment we have to conclude the current system does not support the sow and her piglets across all 5 of the domains. The system has to be changed. The key improvements that the new system will need to factor in are increased space for the sow to move around, provision of extensive nesting materials to allow for successful completion of a nest for the sow, a reduction in the length of confinement in the crate itself, and it must have a safe area for piglets.

## Alternatives to farrowing crates

Successful systems consider design details that promote good maternal behaviour and features that can protect the piglets without restraining the sow. Included in those features can be those that allow staff to provide good management to maximise piglet survival. Zero confinement pens and adaptable farrowing are explored in greater detail below, whilst group housing and outdoor farrowing are also alternatives, we would not advocate complete shifts to these systems due to inconsistent evidence around piglet survival, sow welfare, and availability of suitable land.

- **Adaptable farrowing accommodation**

In adaptable farrowing accommodation sows can be restrained for variable time periods depending on their situation, before, during and after farrowing, and specifically whilst the piglets are at their most vulnerable, when the sow is naturally relatively inactive during this crucial period of colostrum supply and establishment of suckling. After a period of days post-farrowing the restraints are moved away to allow the sow freedom of movement once the piglets are less likely to be crushed. This restraining element can be brought back in at certain points when handling piglets for vaccination to help maintain staff safety. These repeated small time periods of confinement may have a negative impact on the sows, generating more stress as they are moved in and out of the crate area, at least in the beginning as the sow learns her new surroundings. The 360° Freedom Farrower™ is a temporary confinement system which is a similar size to the existing farrowing systems with a retractable gate to enable the sow some limited movement whilst also offering a fenced area to section the sow off in when appropriate.<sup>14</sup> The Agriculture and Horticulture Development Board say that the period of confinement should be 2-7 days because by this point the piglets are robust and fast enough to avoid the sow, and so the restraining bars can be removed, providing the sow full free movement.<sup>15</sup>

A recent review of the current farrowing system compared to adaptive farrowing systems, commissioned by the National Pig Association (NPA), concluded that adaptive farrowing of sows is the most viable alternative to conventional crates due to alignment with natural sow behaviour and practical application, but requires greater management and expertise to mitigate challenges such as increased pre-weaning mortality and risk to the stockperson. The report also concluded that a change from existing permanent crating to adaptive farrowing facilities is most likely to require expansion of existing buildings or the erection of new ones if herd size is to be maintained, but it is clear from the farm visits that investors consider the process worthwhile.<sup>16</sup> In a paper on transitioning from farrowing crates to free farrowing the conclusions regarding adaptive farrowing systems was that they cannot be advised as a step in a farm's transition from using farrowing crates to farrowing pens, unless the size of the adaptive farrowing system is the same as that of the future free farrowing pen.<sup>17</sup>

- **Zero confinement pens**

In zero confinement pens there is no confinement at any point. This includes a range of designs that alter existing farrowing systems to help improve the conditions for the sow and her piglets. These changes can range from wholesale redesign of the crate with sections for nest building, dunging and sloped walls to help prevent crushing, to just offering some more space for the animals to move around. The Swiss Free Farrower and PigSAFE systems all offer varying degrees of additional space and comforts, creating a more positive environment for the sow and her piglets.<sup>18</sup> When examining factors contributing to high performance of sows in free farrowing systems, commercial farms demonstrate that even sows that have not been specifically selected for free farrowing are able to

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<sup>14</sup> Free Farrowing. (2021). *360° farrower: Temporary crating system*. <https://www.freefarrowing.org/farrowing-systems/temporary-crating/360-farrower/>

<sup>15</sup> Agriculture and Horticulture Development Board (AHDB). (n.d.). *Temporary confinement farrowing systems*. <https://ahdb.org.uk/knowledge-library/temporary-confinement-farrowing-systems>

<sup>16</sup> National Pig Association (NPA). (2024). *NPA position paper: Flexible farrowing systems*. <https://nationalpigassociation.co.uk/wp-content/uploads/2024/12/NPA-Position-Paper-Flexible-Farrowing-Systems-Nov-2024-FINAL.pdf>

<sup>17</sup> Baxter, E. M., Moustsen, V. A., Goumon, S., Illmann, G., & Edwards, S. A. (2022). Temporary crating systems in pig farrowing: Welfare implications and performance outcomes. *Frontiers in Veterinary Science*, 9, Article 998192. <https://www.frontiersin.org/journals/veterinary-science/articles/10.3389/fvets.2022.998192/full>

<sup>18</sup> Free Farrowing. (2021). *Individual farrowing pens*. <https://www.freefarrowing.org/farrowing-systems/individual-farrowing-pens/>



perform well in zero-confinement systems, but a period of adaptation is to be expected for overall farm performance.<sup>19</sup> This is important to note as any change to these systems could cause a slowdown in production potentially driving up costs or relying on the importation of pork products from abroad produced under systems we have banned in this country.

## Comparing farrowing systems

In this policy position we present some comparisons between farrowing systems, with clear appreciation for the variables, based on piglet mortality, sow and piglet welfare, challenges for the stockperson and the cost of setting up and running the systems.

- **Piglet mortality** – Piglet mortality is consistently marked as the key reason for the farrowing crate still being in use to this day. A systematic review and meta-analyses conducted on 22 publications by Glencorse et al 2019 compared piglet performance (mortality) between farrowing crates and farrowing pens (which included a variety of loose-housing alternatives i.e free farrowing). They found that the relative risk of piglet mortality was 14% higher in farrowing pens than farrowing crates<sup>20</sup> Olsson et al 2018 compared piglet mortality in Swedish systems where sows were temporarily confined (adaptive farrowing accommodation) to those that were loose (free farrowing) and found on average, 0.4 more pigs per litter survived until weaning if the sow was temporarily confined compared with being loose.<sup>21</sup> As the results demonstrate some variability in piglet mortality it is important to note that allowing the sow more freedom of movement can increase the instances of piglet mortality but the reasons for variability in piglet mortality is known to be multifactorial rather than being solely influenced by the farrowing system. Factors such as litter sizes, stockmanship and environmental conditions within the crates can all contribute. It has also been demonstrated in a study by Baxter et al 2024 which examined piglet mortality on three commercial farms using four different zero-confinement farrowing systems, three of which were newly installed, that although the established system had the lowest piglet mortality, in general, mortality rates in the newly installed systems decreased over the three-year study, with a notable 4% reduction in crushing mortality, suggesting that adaptation and system adjustments can improve outcomes over time.<sup>22</sup> Therefore, if the sow is given more freedom of movement, to support her welfare, then the other factors should be given greater consideration to attempt to offset these potential increases in piglet mortality.
- **Sow and piglet welfare** – There is evidence to suggest that certain changes to the existing farrowing system can improve sow welfare not to the detriment of the other factors we have described. In a study comparing the current farrowing system to an adaptive farrowing system, Nowland et al 2019 found that allowing the sow a greater freedom of movement exclusively in the lead up to and during parturition changed sow behaviour during this time and improved piglet growth whilst maintaining survival rates. It led to reduced incidence of pain-related behaviours during farrowing. Individual weight at weaning was increased in piglets from open penned sows and postnatal mortality did not differ between treatments.<sup>23</sup> Although we would like to see a clear move away from the current farrowing crate, it is still important to note that even slight changes, simply allowing the sow more space to move, can have significant improvements in the welfare of the sow which in turn can improve the health and welfare of the piglets.
- **Challenges for the stockperson** - Research from Newcastle and SAC/SRUC shows that experience and standardised operating procedures have a substantial impact in ensuring effective piglet survivability when switching from conventional crates to free farrowing systems, such as PigSAFE.<sup>24</sup> This is why it is vital that the pig farming industry is engaged with any changes to the existing system as having well trained and responsive staff could be the key to offsetting some of the factors that contribute to increased piglet mortality in the other farrowing systems.
- **Cost of setting up and running the systems** – It is clear that any changes to the current farrowing

<sup>19</sup> Baxter, E. M., Bowers, N., King, R., Brocklehurst, S., & Edwards, S. A. (2024). Factors contributing to high performance of sows in free farrowing systems. *Porcine Health Management*, 10, Article 16. <https://doi.org/10.1186/s40813-024-00366-w>

<sup>20</sup> Glencorse, D., Plush, K., Hazel, S., D'Souza, D., & Hebart, M. (2019). Impact of non-confinement accommodation on farrowing performance: A systematic review and meta-analysis of farrowing crates versus pens. *Animals (Basel)*, 9(11), 957. <https://doi.org/10.3390/ani9110957>

<sup>21</sup> Olsson, A.-C., Botermans, J., & Englund, J.-E. (2018). Piglet mortality – a parallel comparison between loose-housed and temporarily confined farrowing sows in the same herd. *Acta Agriculturae Scandinavica, Section A — Animal Science*, 68(1), 52–62. <https://doi.org/10.1080/09064702.2018.1561934>

<sup>22</sup> Baxter, E. M., Bowers, N., King, R., Brocklehurst, S., & Edwards, S. A. (2024). Factors contributing to high performance of sows in free farrowing systems. *Porcine Health Management*, 10(1). <https://doi.org/10.1186/s40813-024-00366-w>

<sup>23</sup> Nowland, T. L., van Wettere, W. H. E. J., & Plush, K. J. (2019). Allowing sows to farrow unconfined has positive implications for sow and piglet welfare. *Applied Animal Behaviour Science*, 221, 104872. <https://doi.org/10.1016/j.applanim.2019.104872>

<sup>24</sup> AHDB. *Successful free farrowing systems for Pigs*. <https://ahdb.org.uk/knowledge-library/successful-free-farrowing-systems-for-pigs>

system will lead to increased financial costs for the pig farming industry. These costs will vary to the degree of change that is made. Slight amendments to the crate format will produce much lower costs compared to a shift to larger pens or outdoor systems. Estimates from the Agriculture and Horticulture Development Board suggest the need for additional space will significantly increase the cost of pig production. A 6m<sup>2</sup> pen adds about 2p/kg deadweight onto the base cost, while an 8m<sup>2</sup> pen adds about 4p/kg deadweight. With margins only averaging 1p/kg deadweight over the past decade, this is a significant challenge to economic viability, especially when combined with higher pre-weaning mortality levels and other additional costs.<sup>25</sup> It is important to note that these are estimates but it does also demonstrate a very real need for government funding to support these changes. Ongoing costs will likely rise with the increased need for straw/bedding, staff training and poorer outputs initially as the industry adapts to the changes in operating systems. It must also be noted that some building planning permission may not get issued for larger farm footprints.

Each of the alternatives outlined above offer varying degrees of change to the current farrowing system. This in turn leads to varying degrees of improvement to the wellbeing of the sow and her piglets. A perfect outcome would be to create a system that allows the sow space to move, carrying out her natural behaviours and rear her young safely, in addition to protecting piglets from being crushed, keeping them warm and allowing them to feed. This does also need to be taken with keeping staff safe when handling the animals and measured against costs incurred through making the necessary changes as well as ongoing costs, such as a regular supply of straw for bedding. A final point for consideration is how these possible changes will fit into wider industry obligations to environmental policies.

What is clear from evidence so far and the comparisons above is the farrowing system as it stands needs to change and there are viable alternatives out there, but the way forward must be evidence led and properly funded which can only be possible with an appropriate transition period.

### Transition to alternative farrowing systems

If a ban on farrowing crates was to be implemented in the UK, it must be carried out at a pace that has general agreement from producers and policymakers with buy-in from industry. It must be done with farmers not to farmers and in liaison with the veterinary profession. If there is to be a move away from the traditional confinement system then lessons must be learned from the sow stall ban in the UK which put a significant amount of pressure on the pig farming industry with changes that made farming pigs, especially for smaller producers, simply unaffordable. An adequate transition period will help ensure any potential pressures that may arise from the change to a new farrowing system are offset but it must also focus minds of stakeholders so the welfare issues we have highlighted are addressed as soon as feasibly possible.

Speaking as Minister for Environment, Food and Rural Affairs in 2022, Victoria Prentis, emphasised the importance of having a plan for a transitional period. Since sow stalls were banned in 1999 there has reportedly been a 40% reduction in pig production which the industry has still not recovered from.<sup>26</sup> Although this cannot entirely be blamed on the ban, it almost certainly played a significant part, and industry must feel confident that any future change in farming systems have considered the far-reaching impacts of significantly shifting husbandry practices. Therefore, the importance of having a well thought out transition period cannot be overstated.

Following the pledge to move away from confinement systems in the EU, the Institute of Agricultural Economics published its findings on what a transition period would look like and the impact it could have on the industry across the bloc.<sup>27</sup> Although there are many variables in pig farming that stands the UK apart from the EU the conclusions in the report are helpful in forming the basis of a transition period in this country.

The cost-benefit analyses were carried out at the farm level with an attempt to scale-up the results to the EU sector level. It was concluded that the ban on farrowing crates would result in:

- a reduction in the sow population and piglet production in the EU, due to increasing space

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<sup>25</sup> AHDB (2020). Evidence report: Comparing the potential implications of widespread use of different farrowing systems in the British pig sector <https://projectblue.blob.core.windows.net/media/Default/Market%20Intelligence/COP/AHDB%20Alternative%20Farrowing%20Report.pdf>

<sup>26</sup> Driver, A. (2022). *NPA welcomes minister's commitment to "collective approach" on Farrowing Crates*. National Pig Association. [https://www.npa-uk.org.uk/NPA\\_welcomes\\_Ministers\\_commitment\\_to\\_collective\\_approach\\_on\\_farrowing\\_crates.html/](https://www.npa-uk.org.uk/NPA_welcomes_Ministers_commitment_to_collective_approach_on_farrowing_crates.html/)

<sup>27</sup> Potori, N., Majewski, E., Malak-Rawlikowska, A., Himics, M., & Witzke, P. (2024). *An assessment of the impacts of the phasing out of cages in EU livestock farming: The pig and layer sectors*. <https://copa-cogeca.eu/publications>

- requirements for sows
- deteriorating production efficiency
- and significant investment needs

It was also predicted that small scale farmers will likely stop production further shifting industry towards concentrating production. The majority of pig farmers that contributed held negative views on the incoming ban and stressed the difficulty of balancing the welfare of the piglet, welfare of the sow and welfare of the staff taking care of them. Similar to what we have described above, striking that balance is key and any steps taken forward must be done with the pig farming industry well informed and feeding into the key decisions that need to be made.

The report concludes that the negative impacts mentioned diminish substantially when a 10- 15- or 20-year long transition period is applied. With the negative impacts on industry diminishing more significantly with a longer transition period. We would welcome a shorter transition period to help improve the welfare conditions of the sow as soon as possible, but we appreciate that without the appropriate funding and support from government, a longer transition period will be necessary to ensure the UK pig industry is not undermined to such a degree that business is no longer viable.

To address the key concerns outlined in the report, UK Government must ensure there is adequate resource to support any changes and put in place a transition period allowing pig producers to effectively plan ahead and minimise disruption. This would mean from the date of the ban being announced any new builds would not be allowed to include the current farrowing crate and existing buildings would have a set time transition to the approved alternatives. There must be significant funding and resource provided by central government to make the necessary changes to the farrowing crates. Whichever alternative is selected will incur costs to pig farmers through redesigning their systems and the disruption to the production line whilst these changes are made. Some experts predict it will take 20-30 weeks per farm to transition.<sup>28</sup>

It is also important that during the transition period efforts are made to improve the welfare outcomes for the sow and her piglets in the remaining contemporary farrowing crates. The welfare challenges we have highlighted will be present for those that are still kept in those systems during the transition period. However long that is, improvements must be made by producers, farmers, stockpersons, during this time to offset some of the issues we have described above. This may be limited given the restrictions of the current crate but they must be considered as part of a farm's transition away from the crate to the alternative system.

### Consumer behaviour

It is important to note that almost three quarters (72%) of those surveyed in the UK are willing to pay more for products sourced from animal-welfare friendly systems.<sup>29</sup> However this does not often translate to purchases at the till, so we must ensure retailers are involved in any discussions around the changes to the system and the subsequent price changes. This is important because price of products can certainly dictate decision making by consumers and this can go above and beyond noted concerns around animal welfare. It should also be pointed out that when consumers are asked about high animal welfare produce their view on a system being high welfare involves the animal being outdoors. 73% of British consumers surveyed believe all farm animals should have access to the outdoors.<sup>30</sup> It is vital to understand public opinion on farrowing crate alternatives as this will allow farmers, retailers, and producers to consider this before proceeding with changes and to align messaging with the new systems so that the consumer ultimately understands the reason for the increase in the price of pig meat products and that systems can be higher welfare even if the animal does not have access to the outdoors.

UK Governments and supermarket retailers should consider an awareness raising exercise for the public as to why indoor farming for pigs can be a good thing if done well. If adaptive farrowing systems are selected as viable alternatives, then it must be explained that although the sow is still confined in this system, the time

<sup>28</sup> Driver, A. (2021). *Unrealistic to ban farrowing crates by 2027 - NPA*. Pig World. <https://www.pig-world.co.uk/news/unrealistic-to-ban-farrowing-crates-by-2027-npa.html>

<sup>29</sup> Stileman, S. (2023). *Mind the gap: Conservative Animal Welfare Foundation launches landmark report revealing the vast majority of modern British farming is out of sync with public demand for high animal welfare standards - CAWF*. Conservative Animal Welfare Foundation. <https://www.conservativeanimalwelfarefoundation.org/conservative-animal-welfare-foundation/mind-the-gap-conservative-animal-welfare-foundation-launches-landmark-report-revealing-the-vast-majority-of-modern-british-farming-is-out-of-sync-with-public-demand-for-high-animal-welfare-standards/#:~:text=While%20cost%20to%20the%20consumer,from%20animal%2Dwelfare%20friendly%20systems>

<sup>30</sup> AHDB (2020). Evidence report: Comparing the potential implications of widespread use of different farrowing systems in the British pig sector <https://projectblue.blob.core.windows.net/media/Default/Market%20Intelligence/COP/AHDB%20Alternative%20Farrowing%20Report.pdf>

spent in that state is significantly reduced and partially during a period when the sow is naturally less active. This needs to accompany any changes because it will be challenging to market any increase in costs due to changes to the farrowing system that still results in the confinement of the animals.<sup>31</sup>

Labelling of products will have a part to play, as informed choice is a key part of BVA's [Choose Assured](#) Campaign. UK farm assurance schemes empower shoppers to make sustainable and ethically informed choices about the food they buy, including the impact of food production on animal health and welfare. Assurance schemes allow farmers to demonstrate that the food they have produced has met specific, independently certified standards at each stage of the supply chain from 'farm to fork'. These standards include animal health and welfare, food safety, stockmanship training and competencies, and environmental protection. It's important to recognise that good animal welfare isn't solely dependent on the type or size of different farming systems.

It is important to avoid oversimplification when considering how different production systems address animal health and welfare needs. If these changes lead to increases in cost, high animal welfare products cannot be pushed into unaffordable ranges for consumer and producer so discussions will need to be had early on with retail providers to see what can be done. UK Governments need to provide a form of subsidy to offset any potential increases in price.

### Training for stockpersons

The ability to restrict the sow in the first few days post farrowing, while negatively impacting her welfare, does provide some positive impact on piglet welfare as it will reduce mortality and physical damage to the piglets. However, once the piglets are robust enough to move more quickly away from the sow as she lies down, the advantages to the piglets are reduced. There is no categorical time for this. The most crucial factor in deciding when that point is reached, is the skill of the stockperson and this should not be underestimated. The evidence above describes how one of the most important factors in supporting sow and piglet welfare and offsetting some of the drawbacks of changing from the current farrowing system to a new one, will be the expertise and competency of the stockpersons. Given the over-riding influence of the human-animal relationship in the success of alternative systems, the needs and training of stockpeople must be fully taken into account<sup>32</sup>. With the shift to a system that allows the sow more freedom of movement during this challenging period in the pig's life cycle it will require those handling the animals to be well trained and confident in managing pig behaviour. Feedback collected from farmers in Denmark who have made the transition to free farrowing said it was necessary for them to form their own networks in order to be able to share experiences with like-minded people and to contribute to the development of the concept in the future.<sup>33</sup> This is why, in our recommendations, we think that during the transition period there must be more research and shared learning in how stockpersons can better use the new systems to maximise animal welfare and also help keep staff safe when handling the pigs.

### Future of farrowing crates Direction of travel in Europe

In response to a significant campaign by "End the Cage Age", which garnered 1.4 million signatures from EU citizens, on the 30 June 2021 the EU Commission committed to phase out and eventually ban caged farming in Europe, which will include farrowing crates, by 2027.<sup>34</sup>

Although recently it has been announced that the EU intends to pause progress towards a ban following a hard pushback from certain farming groups<sup>35</sup>, it is clear that there will be a shift away from farrowing crates over the next decade.

The routine use of farrowing crates is already banned in Sweden, Norway and Switzerland. Countries such as Germany, Austria, Slovakia, and the Czech Republic have committed to phasing them out in the coming

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<sup>31</sup> AHDB (2020). Evidence report: Comparing the potential implications of widespread use of different farrowing systems in the British pig sector <https://projectblue.blob.core.windows.net/media/Default/Market%20Intelligence/COP/AHDB%20Alternative%20Farrowing%20Report.pdf>

<sup>32</sup> Baxter, E. M., Moustsen, V. A., Goumon, S., Illmann, G., & Edwards, S. A. (2022). Transitioning from crates to free farrowing: A roadmap to navigate key decisions. *Frontiers in Veterinary Science*, 9. <https://doi.org/10.3389/fvets.2022.998192>

<sup>33</sup> Anneberg I, Sørensen JT (2020). Attitudes and Motivation for Change That Can Lead to Better Animal Welfare. DCA Report, No. 166, Aarhus University - DCA - National Center for Food and Agriculture, Aarhus. <https://dcapub.au.dk/djffublikation/index.asp?action=show&id=1324>

<sup>34</sup> *Time to end the Cage Age*. End the Cage Age. <https://www.endthecageage.eu/en/#ourCampaign>

<sup>35</sup> Nelson, A. (2023). *Lobby groups fought "hard and dirty" against EU Ban on Caged Farm Animals*. The Guardian. [https://www.theguardian.com/environment/2023/oct/23/lobby-groups-fought-hard-and-dirty-against-eu-ban-on-caged-farm-animals?dm\\_i=3VUQ%2C1LET%2C1ZA8TG%2C60JJH%2C1](https://www.theguardian.com/environment/2023/oct/23/lobby-groups-fought-hard-and-dirty-against-eu-ban-on-caged-farm-animals?dm_i=3VUQ%2C1LET%2C1ZA8TG%2C60JJH%2C1)



years, looking at adaptable farrowing systems. Although their timescales of implementation and the parameters of the new proposed systems differ, the intent and direction to phase out the current farrowing crate is clear.

### Animal Health and Welfare Pathway

Launched in 2023, the Animal Health and Welfare Pathway<sup>36</sup> is a part of the new domestic agriculture policy in England. A key aspect of the Pathway is offering support to farmers to produce healthier, higher welfare animals. The welfare priorities in the scheme include supporting producers to transition away from confinement systems, such as farrowing crates. This offers the perfect opportunity to begin the move away from the current confinement system, towards an eventual ban, as a part of long-term agricultural strategy.

We think that UK Government needs to go further than this. In our BVA Veterinary Vision for Post Brexit Agricultural Policy<sup>37</sup> we call on the Government to utilise public money to incentivise and support animal health and welfare outcomes as public goods.

It is useful to note that the Scottish Government's own guidance on pig welfare says "ideally, indoor farrowing accommodation would be well designed zero confinement systems which can provide similar piglet survival to conventional permanent farrowing crates if carefully managed."<sup>38</sup> Demonstrating an appetite in some of the UK Governments to move to higher welfare confinement free systems.

### Environmental considerations

There are several environmental considerations involved in pig farming such as feed, waste products, and housing. For this position it is important to focus on housing because any changes to the farrowing crate system must have the following in mind when updating buildings or constructing new ones. Heat stress in pigs, whereby the animal overheats in times of high temperature, causes the pig to reduce their feed intake and subsequent growth, and in some instances the pigs can die. In addition to the impact it has on the pigs themselves it has an economic impact on the farm through loss of stock and reduced weight of pigs at slaughter.<sup>39</sup> With increasing global temperatures instances of heat stress in pigs will become more common and the housing will play a huge part in helping offset it. Industry has identified a number of ways to help manage heat stress. These include managing stocking densities to lower heat output and allow pigs space to fully lay out. Flooring type influences the amount of heat dissipation achievable with slatted material being noted as the most efficient at dissipating heat with solid flooring in second and straw in third. Ventilation is also a vitally important tool to help manage heat dissipation in finishing pigs.<sup>40</sup> If a ban on farrowing crates was progressed then stocking densities could be reduced by increasing pen sizes within the same building footprint in addition to a possible combination of flooring materials that help with heat dissipation but also supports the sow and piglet health and welfare, with ventilation systems that will cope with increasing temperatures. It is important to note there will be less production for the same amount of resource so overall there could be a potential increase in the carbon footprint which may throw up barriers for new systems to be built. All in combination means there is a chance to build higher welfare farrowing systems that can also encompass the changes pig farmers will have to make as global temperatures continue to rise.

In our position on [sustainable agriculture](#) we are clear that sustainable animal agriculture should be undertaken in a way that is environmentally, ethically and economically acceptable for consumers, producers and wider society. As part of this, animal health and welfare should not be unnecessarily compromised to address human need and in order to be considered sustainable, agricultural systems must work towards the positive health and welfare of all farmed animals raised within them.

When examining the externalities of pig production Bartlett et al concluded that trade-offs are not inevitable. They suggested their results confirm that in seeking to increase the sustainability of agriculture, it is not enough to assume relationships between externalities or even simply to look at general trends based on high-quality data. It should instead consider individual farms, identify those that appear best at limiting externality

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<sup>36</sup> *Animal Health and Welfare pathway*. GOV.UK. (2025). <https://www.gov.uk/government/publications/animal-health-and-welfare-pathway/animal-health-and-welfare-pathway>

<sup>37</sup> British Veterinary Association. (2017). *BVA veterinary vision for post-Brexit agricultural support*. <https://www.bva.co.uk/media/1179/bva-veterinary-vision-for-post-brexit-agricultural-support.pdf>

<sup>38</sup> Scottish Government. (2023). *Pig welfare guidance*. Gov.Scot. <https://www.gov.scot/publications/guidance-welfare-pigs/>

<sup>39</sup> Liu, F., Zhao, W., Le, H. H., Cottrell, J. J., Green, M. P., Leury, B. J., Dunshea, F. R., & Bell, A. W. (2022). Review: What have we learned about the effects of heat stress on the pig industry? *Animal*, 16, 100349. <https://doi.org/10.1016/j.animal.2021.100349>

<sup>40</sup> Pig World. (2021). Heat stress in pigs: Back to basics. *Pig World*. Retrieved from <https://www.pig-world.co.uk/features/animal-health-features/heat-stress-in-pigs-back-to-basics.html>

costs across a broad range of outcomes of societal concern, and understand, promote and incentivise their practices.<sup>41</sup>

### Feedback from farmers and vets working in pig production

It is important to see how farmers and producers who have made the shift away from farrowing crates have found that experience for themselves, the sow and her piglets. When asked their thoughts on shifting to free farrowing, farmers in Denmark were quoted as saying that sows are more fun to look after and that it is positive for them to see the sow free to move around. The sows appear to thrive and seem to be happier and better able to express their natural behaviours.<sup>42</sup> A UK case study from a family farm which installed 72 free farrowing pens on their 1,700 sow indoor breeding unit noted benefits including sows being quicker to farrow and produce better colostrum as well as sows being calm especially after farrowing.<sup>43</sup> Feedback from stockpersons in a more recent example of a shift to adaptive farrowing reported reduced stress levels with the sows being relaxed and unfazed when people enter the rooms which was attributed to their ability to turn around allowing visualisation and assessment of any perceived threats, such as stockperson foot traffic. Staff were unanimous that they wouldn't return to the conventional farrowing crate. A final point from this study which will be useful for policy makers to consider is that free farrowing and adaptive farrowing policies should not be too prescriptive, it is important for all stakeholders involved in meat production, from farmers, to vets to be consulted and listened to when making policy changes to ensure these are realistic, sustainable and improve animal welfare.<sup>44</sup>

### Conclusion

A farrowing system must provide a balance between sow and piglet health and welfare, staff safety, costs of production, and environmental policy obligations. For the contemporary crate, it is clear that the maintenance of those factors comes at the expense of the welfare of the sow. This is something that must change and we have demonstrated that there are improvements that can be made and should be made to further improve the welfare of the sow and her piglets. The UK has long championed the welfare of its animals and with the EU shifting towards phasing out farrowing crates the time is right to start to move to alternative systems which can offer improved welfare outcomes for the sow.

This position outlines several significant changes that could be made to pig housing with the potential for markedly improving welfare outcomes for the sows and piglets involved. A key component in the pivot away from the contemporary crate will be adequate training and sharing of best practices for stockpersons with the new systems. Therefore, once a ban is accepted, next steps must involve the pig farming industry and veterinary surgeons, have a clear and long-term transition period with significant financial support, resource, and planning permission on offer from UK Governments to support producers make the change.

### Recommendations

1. UK Government should ban farrowing crates in their current form and replace them with a system that maximises sow and piglet welfare and ensures human safety.
2. A clearly mapped out 15-year transition period should be implemented. From the date of the ban all new builds cannot include the current farrowing crate unless already agreed upon. We would encourage new builds to either be a form of adaptive farrowing accommodation or free farrowing. At the end of the 15-year transition all systems must not contain the current farrowing crate unless it is those which were built during the transition period as previously agreed so these systems would be in place for the functional life of the building and would then need to shift systems.
3. If the adaptable farrowing accommodation is selected as an alternative, the length of time the sow is kept within the crate should be in line with the Agriculture and Horticulture Development Board recommendations of 2-7 days. Variability is to be expected and should be considered by the farmer and their veterinary practitioner to ensure the safety of the piglets and not keeping the sow confined unnecessarily. There will need to be a clear and very specific definition of what will be acceptable, agreed well in advance, to ensure producers replacing existing farrowing accommodation are able to assuredly construct what will be acceptable / required under any new legislative proposals

<sup>41</sup> Bartlett, H., Zanella, M., Kaori, B., Sabei, L., Araujo, M. S., de Paula, T. M., Zanella, A. J., Holmes, M. A., Wood, J. L., & Balmford, A. (2024). Trade-offs in the externalities of pig production are not inevitable. *Nature Food*, 5(4), 312–322. <https://doi.org/10.1038/s43016-024-00921-2>

<sup>42</sup> Anneberg, I., & Tind Sørensen, J. (2021). *FFL21 : What motivates farmers to make changes enhancing animal welfare (and how can science help)?*. Virtual Workshop "Freedom in Farrowing and Lactation" : Overcoming barriers, facilitating change: [https://www.openagrar.de/receive/openagrar\\_mods\\_00073302](https://www.openagrar.de/receive/openagrar_mods_00073302)

<sup>43</sup> AHDB (2020). Evidence report: Comparing the potential implications of widespread use of different farrowing systems in the British pig sector <https://projectblue.blob.core.windows.net/media/Default/Market%20Intelligence/COP/AHDB%20Alternative%20Farrowing%20Report.pdf>

<sup>44</sup> AHDB *Flexible farrowing case studies*. <https://ahdb.org.uk/knowledge-library/farm-case-study-farropen>

4. The stages of shifting away from the current system to the new system must be clearly laid out and adequately funded by the UK Government and the governments of the devolved nations where appropriate. Planning permission and adequate resource must be made available too. Any transition away must factor in the direction of travel in the EU to ensure symmetry and equal opportunities for UK producers.
5. UK Government, the governments of the devolved nations and supermarket retailers should also carry out an awareness raising campaign around farrowing systems and the incoming changes to inform consumers ahead of the ban and during the transition period.
6. During the transition period, there should be shared learning of best practice to enable farmers and producers to confidently and competently support animal welfare in the new farrowing accommodations.

## Annex A

Domain	Advantages of farrowing crate	Disadvantages of farrowing crates	Conclusion
Nutrition	<b>Sow:</b> <ul style="list-style-type: none"> <li>Sow can readily access food and water and not have to compete with other sows for it.</li> <li>Keeper can ensure nutrition through total control of the feed.</li> </ul>	<b>Sow:</b> <ul style="list-style-type: none"> <li>None identified.</li> </ul>	<ul style="list-style-type: none"> <li>Sow and her piglets can safely feed and hydrate themselves.</li> <li>Identified advantages not exclusive to the farrowing crate.</li> </ul> <p>Nutrition domain sufficiently met</p>
	<b>Piglets:</b> <ul style="list-style-type: none"> <li>Piglets can safely approach to feed, especially in the vital few days post birth.<sup>45</sup></li> </ul>	<b>Piglets:</b> <ul style="list-style-type: none"> <li>None identified.</li> </ul>	
Physical Environment	<b>Sow:</b> <ul style="list-style-type: none"> <li>Indoor rearing helps ensure tighter biosecurity measures.<sup>46</sup></li> <li>Temperatures can be better managed for indoor farrowing systems helping to offset heat stress.<sup>47</sup></li> </ul>	<b>Sow:</b> <ul style="list-style-type: none"> <li>Limited size of the crate means sow cannot engage in explorative and natural behaviours, such as satisfied completion of nest building<sup>48 49</sup> leading to stress<sup>50 51</sup> and frustration behaviours.<sup>52</sup></li> </ul>	<ul style="list-style-type: none"> <li>Identified advantages not exclusive to the farrowing crate. However, the provision of a heated area for piglets in the vital moments post birth are significant positive advantages of the farrowing crate for piglets.</li> <li>The frustration of natural behaviours and the limited physical environment enrichment opportunities for sow and piglets are significant disadvantages.</li> </ul> <p>Physical environment domain <b>NOT</b> sufficiently met for sows. Physical environment domain sufficiently met for piglets.</p>
	<b>Piglets:</b> <ul style="list-style-type: none"> <li>Indoor rearing helps ensure tighter biosecurity measures.<sup>53</sup></li> <li>Heated area allows for piglets to remain warm in the critical period post birth.</li> </ul>	<b>Piglets:</b> <ul style="list-style-type: none"> <li>If the quantity of enrichment materials is insufficient, it may not benefit welfare or may even lead to added stress due to competition.<sup>54</sup></li> </ul>	

<sup>45</sup> Theil, P. K., Lauridsen, C., & Quesnel, H. (2014). Neonatal piglet survival: Impact of sow nutrition around parturition on fetal glycogen deposition and production and composition of colostrum and transient milk. *Animal*, 8(7), 1021–1030. <https://doi.org/10.1017/s1751731114000950>

<sup>46</sup> National Pig Association. (2024). *NPA position paper: Flexible farrowing systems*. Retrieved from <https://nationalpigassociation.co.uk/wp-content/uploads/2024/12/NPA-Position-Paper-Flexible-Farrowing-Systems-Nov-2024-FINAL.pdf>

<sup>47</sup> Pig World. (2021). Heat stress in pigs: Back to basics. *Pig World*. Retrieved from <https://www.pig-world.co.uk/features/animal-health-features/heat-stress-in-pigs-back-to-basics.html>

<sup>48</sup> Yun, J., & Valros, A. (2015). Benefits of prepartum nest-building behaviour on parturition and lactation in sows — a review. *Asian-Australasian Journal of Animal Sciences*, 28(11), 1519–1524. <https://doi.org/10.5713/ajas.15.0174>

<sup>49</sup> Swan, K.-M., Peltoniemi, O. A., Munsterhjelm, C., & Valros, A. (2018). Comparison of nest-building materials in farrowing crates. *Applied Animal Behaviour Science*, 203, 1–10. <https://doi.org/10.1016/j.applanim.2018.02.008>

<sup>50</sup> Damm, B. I., Lisborg, L., Vestergaard, K. S., & Vanicek, J. (2003). Nest-building, behavioural disturbances and heart rate in farrowing sows kept in crates and Schmid Pens. *Livestock Production Science*, 80(3), 175–187. [https://doi.org/10.1016/s0301-6226\(02\)00186-0](https://doi.org/10.1016/s0301-6226(02)00186-0)

<sup>51</sup> Olsson, A.-C., Botermans, J., & Englund, J.-E. (2018). Piglet mortality – a parallel comparison between loose-housed and temporarily confined farrowing sows in the same herd. *Acta Agriculturae Scandinavica, Section A — Animal Science*, 68(1), 52–62. <https://doi.org/10.1080/09064702.2018.1561934>

<sup>52</sup> Andersen, I. L., Vasdal, G., & Pedersen, L. J. (2014). Nest building and posture changes and activity budget of gilts housed in pens and crates. *Applied Animal Behaviour Science*, 159, 29–33. <https://doi.org/10.1016/j.applanim.2014.07.002>

<sup>53</sup> National Pig Association. (2024). *NPA position paper: Flexible farrowing systems*. Retrieved from <https://nationalpigassociation.co.uk/wp-content/uploads/2024/12/NPA-Position-Paper-Flexible-Farrowing-Systems-Nov-2024-FINAL.pdf>

<sup>54</sup> University of Edinburgh. *Pigs and their production*. Retrieved from [https://edwebcontent.ed.ac.uk/sites/default/files/atoms/files/1\\_pigs\\_production.pdf](https://edwebcontent.ed.ac.uk/sites/default/files/atoms/files/1_pigs_production.pdf)



Health	<p><b>Sow:</b></p> <ul style="list-style-type: none"> <li>Facilitate frequent and effective evaluation of the sow's health.</li> <li>Slatted floors allow waste to drain away, reducing the risk of infections and reducing the cleaning required.<sup>55</sup></li> </ul>	<p><b>Sow:</b></p> <ul style="list-style-type: none"> <li>Limited space to move around and the prolonged contact with the ground can cause lesions on the sow's teats and shoulders, as well as capped hock and bursitis.<sup>56</sup></li> <li>Can cause increased teat lesions as sow cannot move away from piglets to protect her udders from unwanted attention.<sup>57</sup></li> </ul>	<ul style="list-style-type: none"> <li>Identified advantages not exclusive to the farrowing crate.</li> <li>The physical limitations of the crate can cause several health issues for the sow.</li> </ul> <p>Health domain <b>NOT</b> sufficiently met for sows. Health domain sufficiently met for piglets.</p>
	<p><b>Piglets:</b></p> <ul style="list-style-type: none"> <li>Safer for stockpersons to handle piglets and administer medicines, and assist during farrowing.</li> <li>The crate protects piglets from crushing.</li> </ul>	<p><b>Piglets:</b></p> <ul style="list-style-type: none"> <li>None identified.</li> </ul>	
Behavioural Interactions	<p><b>Sow:</b></p> <ul style="list-style-type: none"> <li>The crate can limit the potentially dangerous interactions between an aggressive sow and her piglets.<sup>58</sup></li> <li>Keeping the sow and her piglets away from other pigs can reduce incidences of aggression.</li> </ul>	<p><b>Sow:</b></p> <ul style="list-style-type: none"> <li>Prevents sow from exhibiting behaviours such as pawing, rooting, turning and walking.<sup>59</sup></li> <li>Limits sow's ability to perform maternal behaviours, such as initiating social interactions with their piglets by sniffing and nosing which results in reduced social contact between the sow and her piglets<sup>60</sup>.</li> <li>Conversely the sow cannot choose to move away from her piglets and the resulting stress that comes from frustrated maternal instincts may impact piglet survival<sup>61</sup>.</li> </ul>	<ul style="list-style-type: none"> <li>The crate can limit the damage of aggressive behaviour from the sow or other pigs.</li> <li>Frustration of natural social behaviours can lead to distress.</li> </ul> <p>Behavioural interactions domain <b>NOT</b> sufficiently met.</p>
	<p><b>Piglets:</b></p> <ul style="list-style-type: none"> <li>The crate can limit the potentially dangerous interactions between an aggressive sow and her piglets.</li> <li>Keeping the sow and her piglets away from other pigs can reduce incidences of</li> </ul>	<p><b>Piglets:</b></p> <ul style="list-style-type: none"> <li>A complex early environment stimulates and enhances social play enabling the safe establishment of a dominance hierarchy which is not available within the space of the current crate system.<sup>62</sup></li> <li>Sows exhibit greater movement and exploratory</li> </ul>	

<sup>55</sup> Rantzer, D., & Svendsen, J. (2001). Slatted versus solid floors in the dung area of farrowing pens: Effects on hygiene and pig performance, birth to weaning. *Acta Agriculturae Scandinavica, Section A - Animal Science*, 51(3), 167–174. <https://doi.org/10.1080/09064700117298>

<sup>56</sup> KilBride, A. L., Gillman, C. E., & Green, L. E. (2009). A cross sectional study of the prevalence, risk factors and population attributable fractions for limb and body lesions in lactating sows on commercial farms in England. *BMC Veterinary Research*, 5(1). <https://doi.org/10.1186/1746-6148-5-30>

<sup>57</sup> Chou, J.-Y., Marchant, J. N., Nalon, E., Huynh, T. T., van de Weerd, H. A., Boyle, L. A., & Ison, S. H. (2022). Investigating risk factors behind piglet facial and sow teat lesions through a literature review and a survey on teeth reduction. *Frontiers in Veterinary Science*, 9. <https://doi.org/10.3389/fvets.2022.909401>

<sup>58</sup> Harris, M. J., Li, Y. Z., & Gonyou, H. W. (2003). Savaging behaviour in gilts and sows. *Canadian Journal of Animal Science*, 83(4), 819–821. <https://doi.org/10.4141/a02-111>

<sup>59</sup> Oliviero, C. (2010.). *Successful farrowing in sows. Production Animal Medicine Animal Reproduction Science*. Retrieved from <https://helda.helsinki.fi/items/c3067442-f18f-4742-a97e-c55e70fc29da>

<sup>60</sup> Nielsen, S. S., Alvarez, J., Bicout, D. J., Calistri, P., Canali, E., Drewe, J. A., Garin-Bastuji, B., Gonzales Rojas, J. L., Schmidt, G., Herskin, M., Michel, V., Miranda Chueca, M. Á., Mosbach-Schulz, O., Padalino, B., Roberts, H. C., Stahl, K., Velarde, A., Viltrop, A., Winckler, C., ... Spooler, H. (2022). Welfare of Pigs On Farm. *EFSA Journal*, 20(8). <https://doi.org/10.2903/j.efsa.2022.7421>

<sup>61</sup> Nielsen, S. S., Alvarez, J., Bicout, D. J., Calistri, P., Canali, E., Drewe, J. A., Garin-Bastuji, B., Gonzales Rojas, J. L., Schmidt, G., Herskin, M., Michel, V., Miranda Chueca, M. Á., Mosbach-Schulz, O., Padalino, B., Roberts, H. C., Stahl, K., Velarde, A., Viltrop, A., Winckler, C., ... Spooler, H. (2022). Welfare of Pigs On Farm. *EFSA Journal*, 20(8). <https://doi.org/10.2903/j.efsa.2022.7421>

<sup>62</sup> University of Edinburgh. *Pigs and their production*. Retrieved from [https://edwebcontent.ed.ac.uk/sites/default/files/atoms/files/1\\_pigs\\_production.pdf](https://edwebcontent.ed.ac.uk/sites/default/files/atoms/files/1_pigs_production.pdf)

	aggression.	behaviour around 7 days post parturition. Piglets have been demonstrated copying the behaviour of the sow, this is prevented in the current farrowing crate. <sup>63</sup>	
Mental State	<b>Sow:</b> <ul style="list-style-type: none"> <li>The positive welfare outcomes for the sow across the other 4 domains are limited and therefore do not provide a positive mental state for the sows.</li> </ul>	<b>Sow:</b> <ul style="list-style-type: none"> <li>Frustrated natural behaviours due to restrictions on the sow movements, limited social interactions and, in some instances, health issues arising from prolonged contact with flooring cannot sufficiently support a positive mental state for the sow.</li> </ul>	<ul style="list-style-type: none"> <li>The crate does not meet some of the domains of the model and can generate negative mental states as a result. Therefore, it does not sufficiently meet the mental state domain for the sow or, to a less extent, her piglets.</li> </ul> <p>Mental state domain <b>NOT</b> sufficiently met.</p>
	<b>Piglets:</b> <ul style="list-style-type: none"> <li>The positive welfare outcomes for the sow across the other 4 domains are limited and therefore do not provide a positive mental state for the piglets.</li> <li>Crushing is stressful for piglets which this crate does largely stop.</li> </ul>	<b>Piglets:</b> <ul style="list-style-type: none"> <li>Frustrated natural behaviours and limited social interactions cannot sufficiently support a positive mental state for the piglet.</li> <li>The length of confinement has a negative impact on piglet and sow sometimes causing chronic stress.<sup>64</sup></li> </ul>	

<sup>63</sup> Zhang, X., Li, C., Hao, Y., & Gu, X. (2020). Effects of different farrowing environments on the behavior of sows and piglets. *Animals*, 10(2), 320. <https://doi.org/10.3390/ani10020320>

<sup>64</sup> Morgan, L., Meyer, J., Novak, S., Younis, A., Ahmad, W. A., & Raz, T. (2021). Shortening sow restraint period during lactation improves production and decreases hair cortisol concentrations in sows and their piglets. *Animal*, 15(2), 100082. <https://doi.org/10.1016/j.animal.2020.100082>