

Costs and benefits of good animal welfare — for animals, farmers and society

Society's demand for good animal welfare has led to discussions about the costs of achieving and maintaining one. This is relevant to Swedish animal-based food production, because producers in Sweden in many respects have stricter requirements than farmers in other countries. They therefore face competition from imported foods produced under less strict animal welfare regulations. At the same time, good animal welfare can have a value in itself and can provide benefits for animals, farmers and society.

Why animal welfare is important

Animal welfare reflects the animal's perspective, how the animal feels, physically and mentally, and how it lives its life. It is not just about the absence of pain, suffering, hunger, thirst or injuries and diseases, but also positive experiences. The welfare of production animals is a responsibility of the keeper. By providing good animal protection and care, the person responsible can minimize the risks of welfare problems.

To evaluate animal welfare, it is necessary to combine different resource-, management- and animal-based indicators. Resources and management – such as box design, space, bedding, feeding, ventilation and veterinary care – are important to minimize welfare risks.

Highlights

Animal welfare is how the animal feels and thrives. It matters to the animal, the owner and society.

Animal welfare efforts can reduce financial returns in cattle operations. However, marketable product attributes or public policies and subsidies can maintain or even improve profitability, without sacrificing animal welfare.

More research is needed to understand the relationship between farm animal welfare and farm profitability. Secondary and long-term effects of animal welfare strategies and the perceived value of animal welfare must be considered.

Through policy and regulation, it might be possible to convert functional animal welfare values to monetary terms without losing respect for intrinsic values (for the animal itself).





Close contact between mother and off-spring is considered beneficial for both.

Photo: Emma Tegler, SLU

Animal-based indicators – if the animal is well and in good condition, healthy, clean and without behavioral problems – are useful for following up the results of housing and handling.

While the welfare of production animals is of course important to themselves, it is also relevant to us humans and society at large. Many farmers testify that it is more rewarding to work with animals that feel good and that it creates pride and joy in the daily work. If the animals do not have to constantly resist stress or disease, they grow and produce better. With lower levels of disease and less meat condemnation at slaughter, production becomes more sustainable. A good state of health also means

that less antibiotics need to be used. It reduces the risk of developing resistant bacteria, which is important for both animals and people. Grazing is also beneficial for the landscape and biodiversity. Finally, good animal welfare is likely to maintain public acceptance of animal production.

Improving animal welfare can lead to improved profitability for farmers through, for example, higher prices for more in-demand products or higher production from healthier animals. In other cases, measures to achieve good animal welfare instead entail extra costs.

The farms economic return

Animal welfare measures can affect the farm's economic return in several ways. In a short-term perspective, such measures can in most cases entail increased costs through, for example, the need to rebuild animal facilities and an increased need for labour input. To understand how the measures affect the farms' financial situation in the medium to long term, dynamic effects must however be taken into account, i.e. how measures interact with each other and influence the effects.

Improved animal welfare can imply healthier animals and that veterinary costs and the work of treating sick animals are thereby reduced. Likewise, improved animal welfare can make production smoother, which in itself also has a positive impact on the farm's financial outcome.

Not only the cost side of the farm, but also the revenue, is affected by improved animal welfare. An improved production process is likely to lead to larger volumes being produced and thereby higher revenues. Another interesting possibility is whether it is possible to market animal welfare measures as a product attribute, which may lead to higher prices in

the sales stage. Finally, animal welfare measures can serve as an opportunity to maintain demand, which in itself creates long-term conditions for marketing products.



Animal welfare reflects how the animal feels, physically and mentally, and how it lives its life.

Photo: Charlotte Berg, SLU

Profitable Swedish beef production

Using scenario analysis, we have found that a number of animal welfare measures are associated with lower gross margins on beef cattle farms. This means at least a short-term deterioration in the profitability of the farmer. Our results indicate that increased housing space and more roughage are associated with significant direct production costs, although such measures can contribute to improved animal welfare. The main reason for the lower gross margin is reduced total production.

The analyses also confirm that increased use of voluntary animal welfare measures can lead to increased costs for farmers. A relevant question then is why such measures are still applied. The fact that farmers for rational reasons seemingly overuse production inputs in order to achieve good animal welfare despite negative impact on economic results, researchers have called *rational inefficiency*, i.e. to consciously accept a production that is not efficient from a strict production economic perspective.

A careful analysis of costs and benefits should precede decisions on extended animal welfare measures. In the absence of agricultural subsidies to

compensate for the increased costs, the measures can otherwise contribute to less cost-efficient farms leaving the industry. Thus, stringent animal welfare standards can have broader economic effects on rural employment and development.

Future research should further explore the economic effects of different animal welfare strategies. Public policy should contribute to maintaining animal welfare in situations when farmers' own incentives for good animal welfare are less strong and market mechanisms cannot be expected to be sufficient.



Under the right conditions, grazing livestock are beneficial to many non-domestic species and to biodiversity.

Photo: Jenny Svennås-Gillner, SLU

Dairy cows and calves together

On most dairy farms, cows and calves are separated during the calf's first day of life. Allowing contact between cow and calf for a longer period of time could be considered to improve animal welfare, but might simultaneously affect farm profitability. Three different strategies were compared with the usual routine of separating cow and calf during the first day. In the usual routine, separated calves were manually fed 8 litres of whole milk per day. The alternative strategies were:

Cow-calf contact with restrictive suckling. Cow and calf were kept separated most of the day. They were allowed to be together for 15 minutes twice a day, before milking. The calf could then suckle its dam.

Initial cow-calf contact followed by manual milk feeding. Cow and calf were kept together around the clock for the first three weeks, after which they were

separated. The calf was then kept together with other calves and was fed according to the usual routine for the rest of the milk-feeding period

Mixed rearing with full contact. The calf was kept together with its dam for the first nine days, after which they were separated. The calf was then moved to a foster cow, that is, another lactating cow.

Feed consumption, morbidity and mortality differed between the strategies, but it was milk consumption that affected the farm's economy the most. As expected, milk income decreased when the calves received a larger milk supply, which was the case in the second and third strategies. With the first strategy, on the other hand, the calves consumed less than 8 litres of whole milk per day due to the limited time with the dam. This strategy was economically most advantageous for the farm.

There may also be long-term and indirect effects of cow-calf contact, for example that the calf could become more robust or productive as a cow, but this has not yet been studied.



Photo: Charlotte Berg, SLU



On pasture, cattle can carry out important natural behaviours.

Foto: Charlotte Berg, SLU

Animal wellbeing is how the animal feels and thrives. *Animal protection* is what humans do to achieve good animal wellbeing. Both animal wellbeing and protection are also called *animal welfare*.

Ethical aspects

There are numerous ethical issues related to farm animal welfare. We focused on some challenges at the intersection of animal welfare and the farm's economic results, such as the definition of core concepts like welfare and economic profit, and finding common formulations across scientific disciplines.

Another question is how to decide on the basis of which criteria these concepts should be assessed, and whether it is at all possible to convert an ethical value such as animal welfare – ranging from "very good" to "very bad" – into monetary terms. It is usually argued that such conversion of ethical values is not easily done, if at all possible, at least not in the case of intrinsic values (regarding something that is valuable in itself). The question then is firstly whether animal welfare is an intrinsic value and if so, how to transform it to monetary terms. Furthermore, it differs how farmers, consumers, organizations or politicians value it, and may differ if it is related to an overarching aim such as higher production or improved profitability.

It might be possible to convert functional animal welfare values into monetary terms while still respecting the intrinsic values as inviolable.

However, stakeholders may emphasize different dimensions, which makes it necessary to decide which dimensions of animal welfare should be converted. In this way, respect for intrinsic values might be possible to maintain through policy and legislation.

Virtue ethics, which emphasizes a responsible and virtuous character to achieve wise decisions, may be useful to understand animal welfare values further, giving the weaker party (the animal) the benefit of the doubt when it is unclear whether something risks affecting its welfare negatively.

References

- Alvåsen, K. *et al.*, 2015. *Ekonomiska konsekvenser av krav på bete för mjölkkor [Economic consequences of grazing requirements for dairy cows]*. SLU, Uppsala, Sweden. Report, <https://pub.epsilon.slu.se/13055>.
- Ahmed, H., Alvåsen, K., Berg, C., Hansson, H., Hultgren, J., Röcklinsberg, H. & Emanuelson, U., 2020. Assessing economic consequences of improved animal welfare in Swedish cattle fattening operations using a stochastic partial budgeting approach. *Livestock Science* 232, 103920, <https://doi.org/10.1016/j.livsci.2020.103920>.
- Ahmed, H., Alvåsen, K., Berg, C., Hansson, H., Hultgren, J., Röcklinsberg, H. & Emanuelson, U., 2021. Assessing animal welfare and farm profitability in cow-calf operations with stochastic partial budgeting. *Animals* 11, 382, <https://doi.org/10.3390/ani.11020382>.

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The project *Good animal welfare* was conducted 2018-2021 by Department of Clinical Sciences, Department of Animal Environment and Health and Department of Economics, with funding from Research Council Formas (2017-00611 and 2017-00625).



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