

Impact of Sustainable Development Goals on Animal Health

Muhammad Ifham Naeem^{1,*}, Ammar AL-Farga², Ayah Talal Zaidalkilani³, Muhammad Mobashar⁴, Shamreza Aziz⁵ and Imdad Ullah Khan⁶

¹Faculty of Medicine, Health and Social Care, School of Allied and Public Health Professions, Canterbury Christ Church University, Canterbury, United Kingdom

²Department of Biological Sciences, College of Science, University of Jeddah, Jeddah, Saudi Arabia

³Faculty of Pharmacy and Medical Sciences, Department of Nutrition, University of Petra, Amman, Jordan

⁴Department of Animal Nutrition, The University of Agriculture Peshawar, Pakistan

⁵Department of Epidemiology and Public Health, University of Veterinary and Animal Sciences, Lahore, Pakistan

⁶Faculty of Veterinary and Animal Sciences, Gomal University, Dera Ismail Khan, Pakistan

*Corresponding author: afhamnaim4@gmail.com

Abstract

Animal health is one of the fundamental pillars of public health which influences the health of humans and sustainability of the environment. The UN (United Nations) Sustainable Development Goals consist of 17 goals and 169 targets which mainly focus on the human interest and completely ignore animal welfare and animal health. To date, animal welfare is often neglected in global development agendas. In recent decades, there has been a great shift in the values regarding animal welfare and health. This chapter aims to explore the Sustainable Development Goals and their anthropocentric nature. The link between the animal and the success of sustainable development goals as different aspects of animals such as defaunation are directly related to several sustainable development goals. The chapter also explores different novel strategies such as development of an 18th SDG and a new international organisation under the UN forum to support the welfare and health of animals.

Keywords: Animals, Sustainable development goals, UN, Animal welfare, Animal health and anthropocentric

Cite this Article as: Naeem MI, AL-Farga A, Zaidalkilani AT, Mobashar M and Aziz S, 2025. Impact of sustainable development goals on animal health. In: Abbas RZ, Akhtar T and Arshad J (eds), One Health in a Changing World: Climate, Disease, Policy, and Innovation. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 290-294. <https://doi.org/10.47278/book.HH/2025.317>



A Publication of
Unique Scientific
Publishers

Chapter No:
25-041

Received: 12-Feb-2025
Revised: 29-Apr-2025
Accepted: 29-May-2025

Introduction

In the previous few decades, it has been seen that there is an increase in the moral attitudes towards animals. These values are perhaps seen mostly in Europe towards farm animals, due to the increased demand of the consumer for better welfare of animals, and different initiatives and legislation to ensure and enhance the animal welfare (George et al., 2016; European Commission, 2016; Alonso et al., 2020; Pelé et al., 2021). One of the best examples of these initiatives is the 'End the Cage Age European Citizens Initiative' and the result of this initiative generated 1.4 million signatures all around Europe, calling for a boycott of cages for all the species of farm animals in Europe. As a result of this initiative, the European Commission presented a legislative proposal by the end of 2023, which proposed to phase out the cages all around Europe for all the farm animals by 2027. Food companies also respond to these initiatives and implement different rules including assurance of animal welfare and ongoing monitoring programs (Rowe et al. 2021). The assurance and implementation of animal welfare is now becoming a significant component of the livestock systems (Buller et al., 2018) and ultimately an important part of the sustainability of food supply of animal origin. The welfare of animals is just not about the change of values and also not only in Europe as these changes are necessary to be fulfilled. The welfare of animals is also associated with different issues of great importance including use of antibiotics, food safety, human health and the food security, work conditions, nutrition in many countries are directly linked to the welfare of animals (Pinillos et al., 2016; Tarazona et al., 2020). Another benefit of providing better welfare to animals results in the improvement of production and the profitability (McInerney, 2004). The welfare of animals is also closely associated with the increasing biodiversity as mentioned in the resolution with appropriate reference to welfare of animals, the Animal Welfare-Environment-Sustainable Development Nexus resolution (Broom et al., 2013; Hultgren et al., 2022; Keeling et al., 2022). In conclusion, the above mentioned scenarios highlight the significance of animals and their welfare for sustainable development. In 2015, the United Nations Sustainable Development Goals (SDGs) were adopted. The SDGs consist of different goals to achieve in the future including the end of poverty and hunger, a world safe from harmful effects of climate change, and loss of biodiversity by the end of 2030. Despite the fact that SDGs covers a wide scope, there is little about the role of animals including domesticated and wild animals, and fish but there is nothing about the welfare of these animals (Keeling et al., 2019; Torpman & Röcklinsberg, 2021). However, there are different organizations working globally, recognizing the need that animal welfare is necessary to be addressed and development of policies to achieve animal welfare which at the end help to achieve SDGs. The Global Agenda for Sustainable Livestock (GALS), comprising of more than 110 members from different institutions

including government and private sector, civil society, non-governmental organizations (NGOs), and different research communities suggest that the nine SDGs have a link to the livestock, also include welfare, and health of animals as an important component of sustainability and it will frame the future activities of the Global Agenda (Schneider & Tarawali, 2021).

Anthropocentric Nature of SDGs

The SDGs are anthropocentric in nature that means they are basically achieved for the sake of humans. Due to this anthropocentric nature of sustainability, there is only a little amount of research present which explores the non-human (animal) interest of the 2030 Agenda. However, it has been challenged by several scholars that the non-human interest should be included in the conceptualization and interpretation of the sustainability agenda (Boscardin & Bossert, 2015; Broom, 2019; Visseren-Hamakers, 2020; Torpman & Röcklinsberg, 2021). The bottom line factor of these arguments to be achieved is the addition of rights of welfare of animals as some of the SDGs are equally linked to both human and animals. It is seen that the debate for inclusion of the animals in sustainability happened chronologically. Initially, the main purpose of the debate was the concerns about the protection of the habitats of the animals which then moved forward to the concerns about decline of biodiversity and extinction of different animal species and most recently the main perspective of this debate include welfare, health and rights of animals (Nista et al., 2020). Another alarming situation recently involved the health of animals in relation to the health of humans, the reason behind 2.5 billion illness cases and 2.7 million human deaths annually is considered zoonoses (Acosta, 2018). Defaunation threatens the existence of different species of animals globally, as defaunation is the outcome of loss of habitat of wild animals (Krause & Tilker, 2022). Another growing issue is the use of live animals for the purpose of experiments and confinement of farm animals as a result of human practices, as heightened by the pandemic of COVID-19, the debate turned towards the complex relationship between animal and human health and welfare (Wiebers & Feigin, 2020).

Defaunation and SDGs

Defaunation is described as the disappearance of the fauna due to the anthropogenic factors including hunting and alterations of habitat in the ecosystems especially in tropical forests. Defaunation is closely related to some of the SDGs such as SDG 2 which is nutrition and zero hunger and SDGs 3 which is good health and wellbeing (Krause & Tilker, 2022). Recently, various studies explain the link between loss of forest fauna and SDG 2, pointing out that the targets of SDG 2 are linked with defaunation, directly or indirectly, these targets include food safety and several other targets (Rowland et al., 2017; Sunderland & Vasquez, 2020). The results of a study which was conducted in 25 tropical forest countries at 37 different locations during the time of 2004 and 2010 for 12 months, show that wild meat is an important part of the diet of the people living near the forests (Rowland et al., 2017). Another study highlights the importance of wild meat and that the reliance on wild meat is higher in poor communities. The study included 7978 households from 24 different countries in the Global South (Nielsen et al., 2018). The outcomes of these studies highlight the significance of wild meat which at the end show that the defaunation may produce implications for ending hunger and also hinder the safe supply of nutrition and food annually. Therefore, the decrease in wild animal numbers will affect human food consumption negatively especially in those areas having limited access to market places and in the poor community (Rowland et al., 2017). SDG 3 that is about good health and wellbeing, is directly associated with the defaunation. The human animal intersections during hunting and consumption of wild meat are public health concerns, as wild animals are the main source of infections as they serve as carriers of fatal pathogens (Olival & Hayman, 2014). The examples of these outbreaks include SARS-CoV-2, Ebola virus and HIV (Wolfe et al., 2005; Andersen et al., 2020).

Animal Welfare and SDGs

Few decades ago, George (1992) highlighted the fact that it is an ethical responsibility to add animal welfare in sustainability as it is necessary for a sustainable agriculture that it should consider the interests of animal welfare. The thoughts on the account of animal welfare have been declared decades ago while on the other hand, the welfare of animals has been disregarded in debates on official sustainability for many years (Vinnari et al., 2017). According to the FAO (Food and Agriculture Organization), many sustainable development Goals are directly or indirectly have a link with the animal sector (agriculture sector) (Thornton, 2010). Additionally, the high production of aquaculture and animal agriculture comes with several effects, and all these effects affect both environmental conditions and well-being of humans and animals equally (Gjerris et al., 2011; Henning, 2011). The major reason behind the failure of integration of animal welfare into the sustainability framework is that all the concerns regarding animal welfare are new and discussed recently. Also the progress of animal welfare at farm level is slow attributed to the disputes between farmers and other food chain assistants due to the cost and production values. Nonetheless, the concerns from societies demand the integration of welfare goals of animals in the framework of sustainable development (Keeling, 2025). The idea of welfare of animals at a broader level usually referred, by people, to the One Health and other other linked concepts (Pinillos et al., 2016; Adisasmito et al., 2022). However, all the human animal interactions are not completely explored under the umbrella of One Health and other One Welfare concepts. The framework of Sustainable Development Goals usually covers three major dimensions including environmental, social and economic also other dimensions related to institutional governance. Besides the fact that SDGs are anthropocentric in nature and there is nothing mentioned about the welfare of animals, still they explain potentially all the aspects of human animal interactions. There is a need for sustainable directives that are directly related to the welfare of animals, to secure the sustainability of farm animal welfare in the future. It has been debated that humans and animals are connected intimately and it is necessary to rethink about the current SDGs and introduce those that account for both the welfare of humans and animals (Herdoiza et al., 2024).

Nexus between Animal and SDGs

Animals and sustainable development are in a vise versa relationship as they both matter for each other. Under the umbrella of One Health, it has been clear that humans, animals, and the environment are linked together (Zinsstag, 2020). It has been studied and argued by

many researchers that animals in some way are linked with every single sustainable development goal (Keeling et al., 2019). Since the animal welfare (physical and mental state of animals) has been ignored by sustainable development, the governments are promoting different policies and goals to promote sustainable development. For instance, the SDGs consist of 17 goals with each goal having different targets consisting of a total of 169 different topics related to hunger, poverty, peace and justice (Sayed, 2015). Among these 17 goals, several are regarding biodiversity, species, and habitats but nothing comes up related to animal welfare besides the fact that animals matter for sustainable development. The origin of COVID-19 is still unknown but it reminded us that the industries such as wildlife trade and industrial animal agriculture exhibit harmful effects on global health as well as kill many animals and the threatened environment ultimately imperil different populations (Roe et al., 2020). For example, the administration of antibiotics to suppress infections and promote growth eventually ends up in the emergence of diseases and antibiotic resistance (Silbergeld et al., 2008; Roe et al., 2020). Animal agriculture is also a leading cause of climate change as it consumes more land and water and generates more waste resulting in more pollution in comparison to plant based alternatives (Poore & Nemecek, 2018). As animals matter for sustainable development, sustainable development also matters for animals as there is an increasing trend of scientists accepting that animals are sentient (Regan, 2004; Singer, 2004; Low, 2012; Birch et al., 2021). It has been discussed in many studies that humans should acknowledge the interests of animals when treating them. Hence, humans, animals, and environment all matter for sustainable development. Humans should acknowledge the interests of all the beings which are affected by their activities. In conclusion, as a part of sustainable development governance, humans should benefit animals more and harm less as it can be done by reducing the manipulation of animals as a result of pandemic, climate change, and migration (Sebo, 2022; Sebo et al., 2022).

The Concept 18th Sustainable Development Goal

One answer to the question why animal welfare has been ignored in sustainable development is that SDGs are rather developed through an anthropocentric approach. To date, very little changes have been made to the original definition by Brundtland which states that "meeting the meet of the present without compromising the ability of the future generations to meet their own needs". The values regarding the relationship between humans and animals are changing as they are highly recognized throughout the world due to various laws, initiatives, and policies (Visseren-Hamakers, 2020). Hence it is necessary to broaden the definition of SDGs so that animal interests are included in it. The most suitable way to add animal interests in the sustainable development is the introduction of 18th SDG which will interrogate animal health and welfare. This will show that every single animal is a significant aspect of sustainable development. This is also explicit that animal welfare is important not for the wellbeing of humans but as a separate entity to be footing with other SDGs (Visseren-Hamakers, 2018).

Future Perspective

Animal welfare and rights could be recognized internationally through the global influence of the UN via the establishment of a new international organization being a part of the UN system (Fumagalli, 2020; De Vriese & Handtrack, 2021). This new international organization would be distinct from the World Organization of Animal Health (WOAH) as it majorly focuses on the health of animals to facilitate trade. This organization will protect the rights of animals themselves. This new UN organisation would work in close cooperation with the WFA (World Federation for Animals 2021). WFA is an integration of different national and international NGOs, and works to protect animal rights (Schapper, 2020). A new OI would provide a way for different NGOs that state animal welfare (Schapper & Bliss, 2023). There are also suggestions about the introduction of an 18th SDG which will strengthen the rights of animal welfare through the UN Sustainable Development Agenda (Kanter et al., 2028; Visseren-Hamakers, 2020). Another approach for the strengthening of individual animals' rights is through Earth System Law which states every single non-human entity as a legal subject (Gellers, 2021). The Earth System highlights how different ecosystems and social institutions can be comprehended as integrated social and ecological systems (Dryzek & Pickering, 2018).

Conclusion

Animals matter for sustainable development as they have serious impact on several SDGs such as nutrition and zero hunger (SDG 2) and are directly linked to them still they are underrepresented in the UN Sustainable Development Goals. SDGs provide a significant forum to develop synergies across human and animal, food security, and environmental protection. To achieve the targets of Sustainable Development the integration of human, non-human and environmental aspects is necessary as animals play a significant role in the wellbeing of humans as they are a vital source of food for humans and directly link to the second SDG. There is a need for a separate SDG as suggested in different studies to protect and guard the rights and welfare of animals. The development of separate organizations other than WOAH which will work with national and international NGOs (Non-Governmental Organization) for the welfare of animals as a major concern of WOAH is animal health.

References

- Acosta, A. (2018). World livestock: transforming the livestock sector through the sustainable development goals. In *World livestock: transforming the livestock sector through the Sustainable Development Goals*. Rome: Food and Agriculture Organization of the United Nations.
- Adisasmito, W. B., Almuhairi, S., Behraves, C. B., Bilivogui, P., Bukachi, S. A., Casas, N., & Zhou, L. (2022). One Health: A new definition for a sustainable and healthy future. *PLoS Pathogens*, 18(6), e1010537.
- Alonso, M. E., González-Montaña, J. R., & Lomillos, J. M. (2020). Consumers' concerns and perceptions of farm animal welfare. *Animals*, 10(3), 385.
- Andersen, K. G., Rambaut, A., Lipkin, W. I., Holmes, E. C., & Garry, R. F. (2020). The proximal origin of SARS-CoV-2. *Nature Medicine*, 26(4), 450-452.
- Birch, J., Burn, C., Schnell, A., Browning, H., & Crump, A. (2021). Review of the evidence of sentience in cephalopod molluscs and decapod

- crustaceans. LSE Consulting. LSE Enterprise Ltd. The London School of Economics and Political Science.
- Boscardin, L., & Bossert, L. (2015). Sustainable development and nonhuman animals: why anthropocentric concepts of sustainability are outdated and need to be extended. In *Ethics of science in the research for sustainable development* (pp. 323-352). Nomos Verlagsgesellschaft mbH & Co. KG.
- Broom, D. M., Galindo, F. A., & Murgueitio, E. (2013). Sustainable, efficient livestock production with high biodiversity and good welfare for animals. *Proceedings of the Royal Society B: Biological Sciences*, 280(1771), 20132025.
- Broom, D. M. (2019). Animal welfare complementing or conflicting with other sustainability issues. *Applied Animal Behaviour Science*, 219, 104829.
- Buller, H., Blokhuis, H., Jensen, P., & Keeling, L. (2018). Towards farm animal welfare and sustainability. *Animals*, 8(6), 81.
- De Vriese, K., & Handtrack, M. E. (2021). The Global Watchdogs: Toward International Animal Rights Law?. *Journal of Animal Ethics*, 11(1), 63-83.
- European Commission. (2016). Special Eurobarometer 442: attitudes of Europeans towards animal welfare.
- Fumagalli, C. (2020, May). A global institution on animal protection. In *Derecho Animal. Forum of Animal Law Studies*, 11(2), pp. 60-106).
- Gellers, J. C. (2021). Earth system law and the legal status of non-humans in the Anthropocene. *Earth System Governance*, 7, 100083.
- George, K. A., Slagle, K. M., Wilson, R. S., Moeller, S. J., & Bruskotter, J. T. (2016). Changes in attitudes toward animals in the United States from 1978 to 2014. *Biological Conservation*, 201, 237-242.
- George, K. P. (1992). Sustainability and the moral community. *Agriculture and Human Values*, 9, 48-57.
- Gjerris, M., Gamborg, C., Röcklinsberg, H., & Anthony, R. (2011). The price of responsibility: ethics of animal husbandry in a time of climate change. *Journal of Agricultural and Environmental Ethics*, 24, 331-350.
- Henning, B. (2011). Standing in livestock's "long shadow": The ethics of eating meat on a small planet. *Ethics & the Environment*, 16(2), 63-93.
- Herdoiza, N., Worrell, E., & van den Berg, F. (2024). Including animal welfare targets in the SDGs: the case of animal farming. *Agriculture and Human Values*, 41(2), 815-830.
- Hultgren, J., Hiron, M., Glimskär, A., Bokkers, E. A., & Keeling, L. J. (2022). Environmental quality and compliance with animal welfare legislation at Swedish cattle and sheep farms. *Sustainability*, 14(3), 1095.
- Dryzek, J. S., & Pickering, J. (2018). The politics of the Anthropocene. Oxford University Press.
- Kanter, D. R., Musumba, M., Wood, S. L., Palm, C., Antle, J., Balvanera, P., & Andelman, S. (2018). Evaluating agricultural trade-offs in the age of sustainable development. *Agricultural Systems*, 163, 73-88.
- Keeling, L., Tunón, H., Olmos Antillón, G., Berg, C., Jones, M., Stuardo, L., & Blokhuis, H. (2019). Animal welfare and the United Nations sustainable development goals. *Frontiers in Veterinary Science*, 6, 336.
- Keeling, L. J., Marier, E. A., Olmos Antillón, G., Blokhuis, H. J., Staaf Larsson, B., & Stuardo, L. (2022). A global study to identify a potential basis for policy options when integrating animal welfare into the UN Sustainable Development Goals. *Frontiers in Animal Science*, 3, 974687.
- Keeling, L. J. (2025). Animal welfare: part of the solution, not part of the problem in the move toward achieving sustainable development in animal agriculture. *Animal Frontiers*, 15(2), 8-11.
- Krause, T., & Tilker, A. (2022). How the loss of forest fauna undermines the achievement of the SDGs. *Ambio*, 51(1), 103-113.
- Low, P., Panksepp, J., Reiss, D., Edelman, D., Van Swinderen, B., & Koch, C. (2012, July). The Cambridge declaration on consciousness. In *Francis crick memorial conference*, (Vol. 7). England: Cambridge.
- McInerney, J. (2004). Animal welfare, economics and policy. *Report on a study undertaken for the Farm & Animal Health Economics Division of Defra*, 68.
- Nielsen, M. R., Meilby, H., Smith-Hall, C., Pouliot, M., & Treue, T. (2018). The importance of wild meat in the global south. *Ecological Economics*, 146, 696-705.
- Nista, N. A., Jannuzzi, C. A. S. C., Falsarella, O. M., & Benedicto, S. C. D. (2020). SOCIETY AND SUSTAINABLE DEVELOPMENT: Animal rights in sustainability discourse. *Ambiente & Sociedade*, 23, e02782.
- Olivai, K. J., & Hayman, D. T. (2014). Filoviruses in bats: current knowledge and future directions. *Viruses*, 6(4), 1759-1788.
- Pelé, M., Georges, J. Y., Matsuzawa, T., & Sueur, C. (2021). Perceptions of human-animal relationships and their impacts on animal ethics, law and research. *Frontiers in Psychology*, 11, 631238.
- Pinillos, R. G., Appleby, M. C., Manteca, X., Scott-Park, F., Smith, C., & Velarde, A. (2016). One Welfare—a platform for improving human and animal welfare. *Veterinary Record*, 179(16), 412-413.
- Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392), 987-992.
- Regan, T. (2004). *The case for animal rights*. Univ of California Press.
- Roe, D., Dickman, A., Kock, R., Milner-Gulland, E. J., Rihoy, E., & Sas-Rolfes, M. T. (2020). Beyond banning wildlife trade: COVID-19, conservation and development. *World Development*, 136, 105121.
- Rowe, E., Rix, J., & Mullan, S. (2021). Rationale for defining recognition of "Higher animal welfare" Farm assurance schemes in a global food system: the GAWA alliance. *Frontiers in Animal Science*, 2, 665706.
- Rowland, D., Ickowitz, A. M. Y., Powell, B., Nasi, R., & Sunderland, T. (2017). Forest foods and healthy diets: quantifying the contributions. *Environmental Conservation*, 44(2), 102-114.
- Sayed, Z. (2015). Transforming our world: The 2030 agenda for sustainable development. *Ethics & Critical Thinking Journal*, 2015(3).
- Schapper, A., & Bliss, C. (2023). Transforming our world? Strengthening animal rights and animal welfare at the United Nations. *International Relations*, 37(3), 514-537.
- Schapper, A. (2020). From the local to the global: learning about the adverse human rights effects of climate policies. *Environmental Politics*, 29(4), 628-648.

- Schneider, F., & Tarawali, S. (2021). Sustainable Development Goals and livestock systems. *Revue Scientifique et Technique (International Office of Epizootics)*, 40(2), 585-595.
- Sebo, J., Verkuil, C., José Hötzel, M., Achakulwisut, P., Bastos Lima, M., & Green, J. (2022). Sustainable development matters for animals too: Governments have a responsibility to recognize that. *CABI One Health*.
- Sebo, J. (2022). *Saving animals, saving ourselves: Why animals matter for pandemics, climate change, and other catastrophes* (p. 273). Oxford University Press.
- Silbergeld, E. K., Graham, J., & Price, L. B. (2008). Industrial food animal production, antimicrobial resistance, and human health. *Annual Review of Public Health*, 29(1), 151-169.
- Singer, P. (2004). Animal liberation. In *Ethics: Contemporary Readings* (pp. 284-292). Routledge.
- Sunderland, T. C., & Vasquez, W. (2020). Forest conservation, rights, and diets: untangling the issues. *Frontiers in Forests and Global Change*, 3, 29.
- Tarazona, A. M., Ceballos, M. C., & Broom, D. M. (2020). Human Relationships with Domestic and Other Animals: One Health, One Welfare, One Biology. *Animals*, 10, 43.
- Thornton, P. K. (2010). Livestock production: recent trends, future prospects. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 365(1554), 2853-2867.
- Torpman, O., & Röcklinsberg, H. (2021). Reinterpreting the SDGs: Taking animals into direct consideration. *Sustainability*, 13(2), 843.
- Vinnari, M., Vinnari, E., & Kupsala, S. (2017). Sustainability matrix: Interest groups and ethical theories as the basis of decision-making. *Journal of Agricultural and Environmental Ethics*, 30, 349-366.
- Visseren-Hamakers, I. J. (2018). A framework for analyzing and practicing Integrative Governance: The case of global animal and conservation governance. *Environment and Planning C: Politics and Space*, 36(8), 1391-1414.
- Visseren-Hamakers, I. J. (2020). The 18th sustainable development goal. *Earth System Governance*, 3, 100047.
- Wiebers, D. O., & Feigin, V. L. (2020). What the COVID-19 crisis is telling humanity. *Neuroepidemiology*, 54(4), 283-286.
- Wolfe, N. D., Daszak, P., Kilpatrick, A. M., & Burke, D. S. (2005). Bushmeat hunting, deforestation, and prediction of zoonotic disease. *Emerging Infectious Diseases*, 11(12), 1822.
- Zinsstag, J. (2020). One health-towards a more inclusive science. *Rural* 21, 54(4), 4-7.