



The social costs of avian influenza and other animal diseases

Scientific Statement
January 2024



Contents

<u>Introduction</u>	1
<u>Risks of a global pandemic</u>	2
<u>Cost to the animal agriculture industry</u>	4
- <u>Avian Influenza</u>	4
- <u>African Swine Fever</u>	6
<u>Cost to the Consumers</u>	7
<u>Cost to the public and governments</u>	8
<u>Conclusions</u>	11
- <u>Higher animal welfare standards are the answer to the problem</u>	11
- <u>What next?</u>	11

The social costs of avian influenza and other animal diseases

Introduction

In 2016, the World Organisation for Animal Health stated that 101 out of 116 surveyed countries had reported having major animal disease outbreaks since the year 2000. Over 350 outbreaks were reported, with over a quarter being avian influenza and two-thirds caused by just five diseases: avian influenza, foot and mouth disease, classical swine fever, Newcastle disease, and African swine fever (ASF).¹

Major disease outbreaks in animals reared for food have many implications across a number of stakeholders, directly impacting all actors of the affected industry by depleting stocks and threatening livelihoods. Consumers are also heavily burdened as the last link in the supply chain. Beyond impacting the industry and consumers, animal disease outbreaks also come at a great cost to governments and the general public. Costs are incurred both through the direct actions taken by the state to support the industry and through costs related to the high risks of an animal disease becoming zoonotic.

Reports on the economic repercussions of zoonotic diseases highlight the imperative to align the stakeholders' incentives with the common good.² The actual cost of a disease outbreak in animals reared for food is staggering and places a burden on numerous stakeholders. The Impact Institute published a report that aimed to determine the true cost of animal-sourced foods beyond the direct costs of animal diseases to various stakeholders discussed. For the year 2022, the external costs of EU animal-sourced food production were estimated at €1.5 trillion, consumption at €1.4 trillion, and economic costs at €207 billion. **Low animal welfare standards were identified as a significant contributing factor, and**

¹ [WOAH, 2016, The economics of animal health: direct and indirect costs of animal disease outbreaks](#)

² [Espinosa, R., Tago, D. and Treich, N., 2020. Infectious diseases and meat production. *Environmental and Resource Economics*, 76\(4\), pp.1019-1044](#)

enhancing animal welfare, along with implementing stringent environmental and human health provisions in the legislation, offers a path toward alleviating these substantial costs.³

Approximately 60% of emerging infectious diseases reported globally are zoonoses. In the last three decades, over 30 new pathogens affecting humans have been identified, 75% of which have originated in animals.⁴ According to the "Preventing the Next Pandemic" report by the United Nations, it is believed that over 50% of zoonotic infectious diseases that have emerged in human populations were caused by intensive animal farming practices.^{5,6} Dealing with the consequences of such outbreaks is an increasingly significant financial burden to states; hence, it is vital for governments to implement legislation and policies to regulate the animal agriculture industry in order to prevent disease outbreaks and minimise the costs when they occur.⁷ Such changes are an investment in the future of humankind - society cannot afford further idleness when it comes to epidemic prevention.

The WHO, Centres for Diseases Control and Prevention (CDC), World Bank, and World Organisation for Animal Health (WOAH) argue that a successful pandemic response programme includes a coordinated One Health approach that understands and addresses the interlinkages between animal, human and ecosystem health.^{8,9,10} One Welfare is a concept adjacent to One Health, emphasising the need to include animal welfare in the equation. Poor animal welfare has been confirmed as a driver of disease by numerous scientific sources,^{11,12,13} hence, **higher animal welfare standards are crucial for mitigating the growing risks of major animal disease outbreaks.**

³ [Impact Institute, 2023, External Costs of Animal Sourced Food in the EU](#)

⁴ [Jones K, Patel N, Levy M, et al. 2008 Global trends in emerging infectious diseases. *Nature* 451:990-94.](#)

⁵ [United Nations \(UN\). Environment Programme and International Livestock Research Institute. Preventing the Next Pandemic: Zoonotic Diseases and How to Break the Chain of Transmission. 2020. pp. 1-72](#)

⁶ [Marchese, A., and Hovorka, A., 2022. Zoonoses Transfer, Factory Farms and Unsustainable Human-Animal Relations. *Sustainability*, 14\(19\), p.12806.](#)

⁷ [Zilberman, D., Sproul, T.W., Sexton, S. and Roland-Holst, D., 2012. The economics of zoonotic diseases: An application to Avian Flu. *Health and animal agriculture in developing countries*, pp.59-76.](#)

⁸ [Paul-Pierre \(2009\), "Emerging diseases, zoonoses and vaccines to control them", *Vaccine*, Vol 27, Issue 46, Pages 6435-6438.](#)

⁹ [Centre for Disease Control and Prevention](#)

¹⁰ [World Health Organisation \(2023\), "Annual Business meeting and technical conference 2022: local-level policy recommendations: operationalizing a One Health approach: political statement of the WHO European Healthy Cities Network"](#)

¹¹ [World Bank \(2022\), "Putting pandemics behind us: investing in One Health to reduce risks of emerging infectious diseases"](#)

¹² ["European Food Safety Authority \(2021\), "Avian influenza overview September-December 2021"](#)

¹³ [Jones, et al \(2013\), "Zoonosis emergence linked to agricultural intensification and environmental change"](#)



Risks of a global pandemic

Since the 1970s, more than 25 new zoonotic diseases have been identified. These include Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), Ebola, Avian Influenza, Swine Fever, Zika, and SARS-CoV-2 (COVID-19).¹⁴ The World Health Organization has issued warnings about the unprecedented rates at which infectious diseases are emerging.¹⁵ The impacts of a global pandemic resulting from avian influenza or other zoonotic diseases are too significant to ignore.

In 2006, a conference was organised to raise funds for the control of avian influenza, during which \$1.9 billion was raised. “This is not charity. This is not just solidarity. This is self defence” said Markos Kyprianou, European Union health commissioner at the time.¹⁶ A joint effort to control the outbreak of avian influenza was in the common interest of the global population. The World Bank estimated that an avian influenza pandemic in 2006 could affect up to a quarter of the world's population with millions of deaths, and the cost amounting to \$1.4 trillion in the first year.¹⁷

Thirteen years later, the world endured a multi-year pandemic caused by a previously unknown virus that killed millions and severely disrupted all sectors. By the end of August 2023, the World Health Organisation has reported over 770 million cases of COVID-19 and 6.9 million deaths.¹⁸ The cost to the economy is more challenging to calculate as the impacts on the economy are varied (e.g., cost of long-term health care related to long-COVID, a shift in spending habits as a result of remote working, decreased productivity caused by poor mental health...). Therefore, the estimates vary greatly between reports (from \$12.5 trillion¹⁹ to \$114 trillion globally²⁰). All estimations far exceed predictions made by the World Bank in 2006 on the costs of an avian influenza pandemic.

¹⁴ [Baylor College of Medicine, Emerging Infectious Diseases](#)

¹⁵ [WHO. A Safer Future: Global Public Health Security in the 21st Century; World Health Organization: Geneva, Switzerland, 2007](#)

¹⁶ [Roberts, J.A., 2006. Funding the global control of bird flu. *BMJ*, 332\(7535\), pp.189-190.](#)

¹⁷ [Roberts, J.A., 2006. Funding the global control of bird flu. *BMJ*, 332\(7535\), pp.189-190.](#)

¹⁸ [World Health Organisation, August 2023](#)

¹⁹ [Reuters 2022. IMF sees cost of COVID pandemic rising beyond \\$12.5 trillion estimate](#)

²⁰ [Wood, S. Daily Maverick 2022. Covid-19 has so far cost the world as much as \\$114-trillion — and counting](#)

A 2021 study found that over 36% of emerging infectious zoonotic diseases (EIZDs) between 1940 and 2004 were associated with animals kept for food production,²¹ and about 75% of emerging infectious diseases are zoonotic.²² The threats related to intensive factory farming increase the risk of zoonotic diseases emerging as “intensive animal farming creates conditions for the emergence and amplification of epidemics because of the physical and genetic proximity of the billions of animals, often in frail health, that are raised indoors every year”.^{23,24}

Though the risks and consequences of an avian influenza pandemic can differ from those of the COVID-19 pandemic, the latter exposed the risks of increasing numbers of zoonotic diseases. If estimations and simulations were not enough, the aftermath of the COVID-19 pandemic should be the final proof that humankind cannot afford business as usual in animal agriculture practices.

Cost to the animal agriculture industry

Reported losses by the industry due to a disease outbreak are often incomplete or lacking because of the complexity of the problem. An estimate of the loss of animals due to animal diseases varies from 20% globally to 50% in developing nations.²⁵

There are various sources of costs for farmers during a disease outbreak apart from the direct loss of animals, such as disinfection of the facilities between stocks and, in some cases, the cost of medication and more labour needed. Beyond imposing financial pressure on farmers, disease outbreaks also put workers at risk of contracting diseases and job loss if farms do not survive the financial burden. Other costs to the industry may result from trade restrictions and a change in consumer habits, causing market shocks.²⁶

²¹ [Otte, J. and Pica-Ciamarra, U., 2021. Emerging infectious zoonotic diseases: The neglected role of food animals. *One Health*, 13, p.100323.](#)

²² [Espinosa, R., Taqo, D. and Treich, N., 2020. Infectious diseases and meat production. *Environmental and Resource Economics*, 76\(4\), pp.1019-1044.](#)

²³ [Espinosa, R., Taqo, D. and Treich, N., 2020. Infectious diseases and meat production. *Environmental and Resource Economics*, 76\(4\), pp.1019-1044.](#)

²⁴ [Coker, R., Rushton, J., Mounier-Jack, S., Karimuribo, E., Lutumba, P., Kambarage, D., Pfeiffer, D.U., Stärk, K. and Rweyemamu, M., 2011. Towards a conceptual framework to support one-health research for policy on emerging zoonoses. *The Lancet infectious diseases*, 11\(4\), pp.326-331.](#)

²⁵ [Rushton, J., Bruce, M., Bellet, C., Torgerson, P., Shaw, A., Marsh, T., Pigott, D., Stone, M., Pinto, J., Mesenhowski, S. and Wood, P., 2018. Initiation of global burden of animal diseases programme. *The Lancet*, 392\(10147\), pp.538-540.](#)

²⁶ [FAO, 2016. *Economic Analysis of Animal Disease*](#)

In 2018, diseases were associated with a 2.8 million tonne reduction in global poultry production and a 3 million tonne reduction in global egg production, which cost producers \$5.6 billion. Based on global per capita poultry consumption of 15.8 kg/year, the lost poultry meat was enough to feed 180 million people for a year. In 2020, for all the major livestock categories, the meat sector suffered 20% losses due to disease. Based on average meat prices, livestock producers lost \$264 billion to disease in 2020.²⁷ The annual production lost is equivalent to the meat consumption of 1.6 billion people.

Avian Influenza



Third countries (US, Japan, Southeast Asia)

In the US, more than 40 million layers were culled in 2022 - a number similar to that of a 2015 outbreak where more than 50 million chickens and turkeys were eliminated.²⁸ The 2022 outbreak resulted in economic costs ranging from \$2.5 to \$3 billion.^{29,30} In Japan, more than 15.5 million layers either died or were culled throughout the outbreak in 2023.³¹ Around \$879 million was allocated for handling the 2014-2015 HPAI outbreak and fall planning in the US, as per the United States Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) data. This expenditure represents about 1.82% of the total value of poultry production, including eggs, as reported by USDA-NASS in 2014.

²⁷ [A fifth of world meat, milk and egg production lost to disease annually](#)

²⁸ [Food Manufacturing, 2023, Bird Flu Costs Pile Up as Outbreak Enters Second Year](#)

²⁹ [Farahat RA, Khan SH, Rabaan AA, Al-Tawfiq JA. The resurgence of Avian influenza and human infection: A brief outlook. New Microbes New Infect. 2023 Mar 30;53:101122.](#)

³⁰ [USA Today 18/02/2023 Bird flu costs accumulate as avian influenza outbreak enters second year](#)

³¹ [Avian flu fuels egg price rises in Japan, Taiwan](#)

Of this, about \$200 million was used for indemnity payments to farmers, growers, and companies (reported by USA Today in 2015), \$610 million went towards on-site response activities as outlined by USDA-APHIS, \$34 million was spent on planning for the autumn, and the remaining \$35 million was presumably used for additional expenses such as overtime, travel, and supplies for Veterinary Services staff.³² Following the 2003-2004 outbreaks of the highly pathogenic H5N1 avian influenza, the total losses in Gross Domestic Product (GDP) due to impacts on the poultry industry in Asia were nearly €8 billion.³³ Subsequently, a 2005 avian influenza outbreak resulted in estimated losses of more than \$10 billion to the Southeast Asian poultry industry.³⁴ It is estimated that an impact of a single large outbreak could result in a reduction of up to 1.5% of GDP growth of Southeast Asian Economies.^{35,36}

Europe

The Analysis of the World Bank from 2006 points out that the spread of avian influenza in Europe may negatively affect the labour market, and the expected loss of jobs can reach the cost of 5 million euros.³⁷ Sure enough, after two major outbreaks (2016-2019 and 2021-2022) the poultry sector is in a very delicate situation; however, comprehensive scientific reports on the actual overall cost of these epidemics are yet to be published.

The disease caused about €40 million loss in Germany alone by 2017.³⁸ In France, according to Itavi, the avian influenza epidemic of 2015-2016 cost the poultry sector €440 million and that of 2016-2017 more than €580 million. A total of 85-90% of losses were linked to the domestic market; the rest was due to export losses.³⁹

In Europe, the entire population of laying hens decreased by 3% to 5%,⁴⁰ with a loss of 18.7 million birds in Poland alone in 2022.⁴¹ Between October 2021 and September 2022, around 2,500 outbreaks of avian flu were detected on poultry farms in 37 European countries, with France, Italy and Hungary reporting the most.⁴² The overall estimate of direct and indirect damages of the 2021/2022 epidemic in Italy is about €500 mln.⁴³

³² [Amy D. Hagerman and Thomas L. Marsh JEL Classifications: Q10, Q17, Q18, R1, H59 Keywords: Agricultural Disasters, Highly Pathogenic Avian Influenza, Animal Health Economics](#)

³³ [European Commission, Avian influenza- fact sheet.](#)

³⁴ [Zilberman, D., Sproul, T.W., Sexton, S. and Roland-Holst, D., 2012. The economics of zoonotic diseases: An application to Avian Flu. *Health and animal agriculture in developing countries*, pp.59-76.](#)

³⁵ Food and Agriculture Organisation. [The Economic Impact of Avian Influenza CONFERENCE Avian Influenza. A Global Threat In the Framework of the G7 CVOs Meeting Rome, 4th October 2017](#)

³⁶ [Burns, A., Van der Mensbrugge, D. and Timmer, H., 2006. Evaluating the economic consequences of avian influenza.](#)

³⁷ [Victoria Marincheva. Avian influenza from the point of animal husbandry. Data analysis for 2021-2022 from Bulgaria and Europe. *Int J Vet Sci Anim Husbandry* 2023;8\(4\):07-12.](#)

³⁸ [Agraheute 2017 R+V-Versicherung: Schadensfälle wegen Vogelgrippe steigen rasant](#)

³⁹ [La grippe aviaire coûte 500 millions aux filières volailles](#)

⁴⁰ [RaboBank Research 2023, Eggflation: What Happens After Egg Prices Reach Historic Highs](#)

⁴¹ [Jarosław Urbański, 2022, Fermy przemysłowe, a zagrożenie epidemiczne i epizootyczne](#)

⁴² [European Food Safety Authority \(2022\), "Avian influenza overview September – December 2022\)](#)

⁴³ [Aviaria. Danni Per Oltre 500 Mln All' avicoltura Veneta. Coldiretti: Via Libera Al Riaccasamento. Attenzione Ancora Alta Per Contenere L'epidemia.](#)

Amidst the ongoing resurgence of avian influenza in the UK, over 5.5 million birds were killed between October 2021 and November 2022.

In Poland, three waves of HPAI have been observed since 2007. In 2007, approximately 0.7 million farmed birds were culled as a result of the HPAI outbreak; in 2016–2017, around 1.1 million, and during the third wave (2019 until July 2022), a total of 18.7 million birds were culled. Economic losses due to the elimination of the effects of animal infectious diseases in 2021 amounted to PLN 1.1 billion, of which 70% were linked to HPAI and 19% to ASF. The rest was related to other diseases. Direct costs probably account for about 1/5 of all economic costs associated with infectious animal diseases. Furthermore, the number of avian influenza cases among people has increased significantly in Poland in the last decade.^{44,45}

African Swine Fever

Third Countries

An outbreak of ASF in China in 2018 resulted in the culling of 143 million pigs, a reduction of 40.5% and 39.3% in the stock of hogs and sows.⁴⁶

ABARES estimated the costs to the economy of various scenarios for an ASF incursion into Australia. A small-scale outbreak of ASF in domestic pigs followed by eradication of the disease was estimated to cost from \$117 million to \$263 million. A small-scale outbreak of ASF in feral pigs followed by eradication of the disease was estimated to cost from \$101 million to \$127 million. The estimated economic impact of endemic ASF ranges between approximately \$0.4 billion and \$2.5 billion.

⁴⁷

The ASF outbreak cost US\$ 8,26,911 in Lao Cai (Vietnam) in 2020 and over US\$ 58 million in the Philippines in 2019. In Africa, the financial toll of ASF was approximated at around US\$ 1,513,340 in Benin over the period from 2014 to 2018. In Nigeria, the cost of the ASF epidemic in 2001, primarily attributed to the high mortality rate (91%) across 306 farms, amounted to US\$ 941,492. An epidemic in 219 households in Tanzania translated into a cost of US\$ 41,065. In regions historically unaffected by African Swine Fever (ASF), the disease had a severe impact on swine production in China, resulting in a tripling of the price of live finishers from approximately 13 yuan/kg to 38 yuan/kg. In India, the direct economic losses attributed to the loss of animals from April 2020 to June 2021 were

⁴⁴ [Ferma przemysłowe a zagrożenie epidemiczne i epizootyczne analiza społeczno-ekonomiczna, Jarosław Urbański](#)

⁴⁵ [Phasing out cage livestock farming in Poland. Costs and benefits, a socio-economic analysis, Jarosław Urbański](#)

⁴⁶ [Acosta, A., Lloyd, T., McCorriston, S. and Lan, H., 2023. The ripple effect of animal disease outbreaks on food systems: The case of African Swine Fever on the Chinese pork market. *Preventive Veterinary Medicine*, 215, p.105912.](#)

⁴⁷ [Potential economic consequences of African swine fever in Australia](#)

estimated to be around US\$ 37.32 million.⁴⁸

Europe

Italy has just approved the use of the army⁴⁹ to contain the epidemic and cull wild boars. Besides the costs of the army itself, there are concerns that bringing so many people into the red zones might actually increase the risk of spreading the disease further. According to Coldiretti,⁵⁰ ASF threatens the survival of 29,000 Italian farms and an entire sector that generates a turnover of EUR 20 billion a year and provides employment for about one hundred thousand people in the pig supply chain. In 2022, a drop in exports has already been registered, giving a competitive advantage to companies in third countries. Current estimates by the Ministry of Health talk about more than EUR 1.4 billion for pig culling compensation alone. In addition to direct compensation for culling, there are also the costs for biosecurity measures. In Lombardy alone, in July 2023, the region allocated EUR 2.2 million to biosecurity for ASF in a call for tenders for breeders; the same has been done in many other regions with similar figures (around EUR 2 million in Emilia-Romagna). According to Assica⁵¹, from January 2022, the pig supply chain has lost 20 million per month in exports.

Cost to the Consumers

During disease outbreaks in animals reared for food, in addition to bearing the burden of public costs, consumers face additional expenses resulting from an increase in the price of the product. Currently, the world is facing a cost of living crisis influenced by many drivers, including the war in Ukraine, the knock-on effects of a global pandemic, and an increase in energy prices. These factors have caused a dramatic increase in the prices of food products. However, the ongoing outbreak of avian influenza is an additional factor influencing a surge in the price of eggs, chicken meat, and other poultry products.

In the EU, the rise in price for eggs between January 2022 and January 2023 varied across countries, with the highest increase in the Czech Republic (+80%) and an average increase of 30%.⁵² A Bulgarian newspaper followed the wholesale price for eggs size M, which has reached an 82% rise within one year, from 0.22 stotinki during 04-07.01.2022 to 0.40 stotinki during 03-06.01.2023.⁵³

⁴⁸ [Casal J, Tago D, Pineda P, Tabakovski B, Santos I, Benigno C, Huynh T, Ciaravino G, Beltran-Alcrudo D. Evaluation of the economic impact of classical and African swine fever epidemics using OutCosT, a new spreadsheet-based tool. *Transbound Emerg Dis.* 2022 Sep;69\(5\):e2474-e2484.](#)

⁴⁹ [Peste suina, focolai negli allevamenti del Pavese: schierato l'Esercito per abbattere 600mila cinghiali](#)

⁵⁰ [Coldiretti](#)

⁵¹ [Assica](#)

⁵² [Eurostat 2023 Egg prices in the EU increase by 30% over one year](#)

⁵³ [Malcheva N. The price of eggs double for a year. *Trud.* 2023; \[Malcheva N. 2023. Цената на яйцата двойна за година. *Труд.*\]](#)

Agrostatistics from the Bulgarian Ministry of Agriculture for 2021 shows that the production of eggs decreased by 4.15% compared to 2020.⁵⁴

As a result of HPAI outbreaks, US egg inventories were 29 per cent lower on stock in the final week of December 2022 than at the beginning of the year. As of the end of December 2022, the outbreak of disease that began in February 2022 had resulted in the loss of over 43 million egg-laying hens, either due to the illness or through culling measures. In the week leading up to Christmas, the average price of shell eggs had surged by 267 per cent compared to the start of the year and was 210 per cent higher than it was in the corresponding period the previous year.

⁵⁵ The U.S. Department of Agriculture states that the increase in egg prices in 2022 was correlated to the epidemic of avian influenza. The egg prices in February 2023 were still 70% higher than in February 2022.⁵⁶

A 2023 study on the market impact of a 2018 African swine fever outbreak in China found that the price at the farmgate and retail price both increased, with the retail price increase exceeding that at farmgate. The prices of beef and chicken also increased, showing a spill-over effect into other meat markets, which consumers have to bear.⁵⁷ In China, due to an ASF outbreak, retail prices rose by 78% (month to month) in September 2019, impacting consumers. By the end of 2019, the Chinese national pig herd had fallen by half, and it was expected that production would continue to fall by 10–15% in 2020, in addition to a 25% reduction in 2019. As of September 2019, it was estimated that direct economic losses in China alone amounted to approximately US\$ 141 billion.⁵⁸

Further social costs include travel and movement restrictions for citizens who happen to live or work in affected areas. Because of diseases such as ASF, trade and travel with certain products are severely restricted (even cured ham, salami, and other processed pig products can carry the virus and infect live animals, which happened in Belgium and the Czech Republic).

⁵⁴ [Victoria Marincheva, Avian influenza from the point of animal husbandry, Data analysis for 2021-2022 from Bulgaria and Europe, Int J Vet Sci Anim Husbandry 2023;8\(4\):07-12.](#)

⁵⁵ [Economic Research Service, U.S. DEPARTMENT OF AGRICULTURE, Avian influenza outbreaks reduced egg production, driving prices to record highs in 2022](#)

⁵⁶ [CNN Business, 2023, Eggs are 70% more expensive than they were a year ago](#)

⁵⁷ [Acosta, A., Lloyd, T., McCorriston, S. and Lan, H., 2023. The ripple effect of animal disease outbreaks on food systems: The case of African Swine Fever on the Chinese pork market, Preventive Veterinary Medicine, 215, p.105912.](#)

⁵⁸ [The global economic impact of ASF](#)

Governments, and by proxy, the general public, incur exorbitant costs when a disease breaks out in the animal agriculture sector. The total cost of the 358 outbreaks reported by the World Organisation for Animal Health is unknown as only the cost of 128 outbreaks was calculated, which amounts to \$12.1 billion.⁵⁹

Third Countries

In the US, over \$793 million was invested by the U.S. Department of Agriculture during the emergency response to the current avian influenza outbreak (for implementing quarantine, depopulation and disposal of the birds, disinfection, and surveillance). This money was supplemented by a further \$502 million under the Animal Health Protection Act to the Animal and Plant Health Inspection Service.⁶⁰

The economic impact of an avian influenza outbreak increases significantly when the strain affects humans through bird-to-human transmission. Some years ago, a severe avian influenza outbreak (H7N9) resulted in human infections and deaths in China. A total of 131 cases and 39 human deaths were reported from February to May 2013, which resulted in US\$ 2.6 million in direct medical costs and US\$ 2.8 million in indirect costs.⁶¹

Due to interlinked global poultry markets of supply and demand, both global and regional economic impacts are affected by disease outbreaks. Globalised value chain (GVC) shocks are transmitted across countries, even if not directly related to livestock production. During the US Poultry Ban (2014-2015), an avian flu outbreak in the Midwest US across 15 States caused \$130 million in poultry indemnity payments, and more than 1,200 personnel were dispatched to manage the outbreak. By December 2014, 75 export partners imposed full or partial bans on US poultry. Trade bans affected 233,770 poultry farms in the USA. Annual exports dropped by 6-11% for poultry meat and eggs, and export declines of 13-14% for turkey and broiler were reported.⁶²

Europe

Throughout the last few years, the poultry and egg sectors have been suffering the effects of ongoing avian influenza outbreaks. To combat the losses to industry attributed to the current outbreaks, the European Commission provided €27,2

⁵⁹ [WOAH, 2016. The economics of animal health: direct and indirect costs of animal disease outbreaks](#)

⁶⁰ [U.S. Department of Agriculture, 2023. USDA Provides Additional \\$502 Million For Highly Pathogenic Avian Influenza – Stands Ready to Combat Additional Detections](#)

⁶¹ [Food and Agriculture Organisation. The Economic Impact of Avian Influenza CONFERENCE Avian Influenza. A Global Threat In the Framework of the G7 CVOs Meeting Rome, 4th October 2017](#)

⁶² [Food and Agriculture Organisation. The Economic Impact of Avian Influenza CONFERENCE Avian Influenza. A Global Threat In the Framework of the G7 CVOs Meeting Rome, 4th October 2017](#)

million to Italy alone.⁶³ The Italian government paid another 30 million euros for indirect damages in 2022.⁶⁴ According to some estimates, the overall amount of money allocated to cover indirect costs in 2021 was around 260 million euros (50% from the Italian government and 50% from the EU).⁶⁵

The costs of preventing and dealing with the consequences of the epidemic are growing - in 2003, the European Commission approved a €10 million advance payment to the Netherlands destined for compensation funds to farmers affected by the avian influenza epidemic.⁶⁶ The costs to the public are increasing, as stated by a news report from the Netherlands Court of Audit: “[In the Netherlands] between 2015 and 2021, preventing and controlling bird flu cost about €10 million per annum but leapt to €55 million in 2022. Far more of these costs are being paid from the public purse. Owing to the permanent presence of bird flu, organisations such as the Netherlands Food and Consumer Product Safety Authority (NVWA) are running out of funds to tackle animal diseases effectively.[...] Between 2015 and 2021, the poultry industry itself bore most of the costs, 54% versus the ministry's 46% last year. **The cost to the ministry was €0.7 million in 2016 but rose to €26 million in 2021**”⁶⁷.

Regional governments also pay the price of disease outbreaks in animals. In the state of Lower Saxony, Germany, the state's agriculture ministry paid over €4 million of the €9.18 million costs of the avian influenza outbreak in 2021, depleting the funds available in the state's animal disease fund, which will need to be recovered from other public spending.⁶⁸

Outside of the EU, avian influenza outbreaks are also incurring heavy governmental spending. In the UK, the government has paid over £44 million in compensation for avian influenza and over £4 million for remedial work for damage incurred during disease control operations since 2021.⁶⁹

The figures displayed in this section represent only some of the reports for outbreaks of avian influenza since the start of the century, and already cost governments billions of euros. Other disease outbreaks such as lumpy skin disease (€20.9 million cost in 2016-17 in Albania, Bulgaria, and Macedonia⁷⁰), foot and mouth disease (\$6.5 billion to \$21 billion globally by 2013⁷¹), African swine fever (\$111.2 billion in 2018-19 in China⁷²); also put a heavy financial burden on countries around the globe, putting extra pressure on limited funds needed to battle other

⁶³ [European Commission, 30/03/2023 Avian flu: Commission will give €27.2 million to Italy to compensate farmers](#)

⁶⁴ [Influenza aviaria, accordo Conferenza Stato-Regioni su 30 milioni di aiuti](#)

⁶⁵ [In arrivo gli anticipi dei risarcimenti per i danni indiretti dell'aviarica del 2021](#)

⁶⁶ [JustFood, 2003 NETHERLANDS: EU to pay bird flu compensation to Netherlands](#)

⁶⁷ [Netherlands Court of Audit, 2023, Sharp rise in cost of controlling bird flu](#)

⁶⁸ [Rundblick 2021, Geflügelpest kostet Niedersachsen schon mehr als 4 Millionen Euro](#)

⁶⁹ [Animal and Plant Health Agency Request for information act, 28/02/2023](#)

⁷⁰ [Casal, J., Allepuz, A., Miteva, A., Pite, L., Tabakovsky, B., Terzievski, D., Alexandrov, T. and Beltrán-Alcrudo, D., 2018. Economic cost of outbreaks in three Balkan countries: Albania, Bulgaria and the Former Yugoslav Republic of Macedonia \(2016-2017\). *Transboundary and emerging diseases*, 65\(6\), pp.1680-1688.](#)

⁷¹ [Knight-Jones, T.J. and Rushton, J., 2013. The economic impacts of foot and mouth disease—What are they, how big are they and where do they occur?. *Preventive veterinary medicine*, 112\(3-4\), pp.161-173.](#)

⁷² [You, S., Liu, T., Zhang, M., Zhao, X., Dong, Y., Wu, B., Wang, Y., Li, J., Wei, X. and Shi, B., 2021. African swine fever outbreaks in China led to gross domestic product and economic losses. *Nature Food*, 2\(10\), pp.802-808.](#)

crises and bringing into question the use of taxpayer funds.

Beyond funding compensations to farmers and actions to control the outbreak of a disease, other agencies related to zoonotic diseases also require governmental funding. In 2015, the Centre for Disease Control spent almost \$500 million on the investigation of emerging and zoonotic diseases.⁷³ Other sources of public funds used during disease outbreaks in animal agriculture include veterinary costs, development and rollout of vaccines, implementation of biosecurity measures, including modernising facilities, and survey and control of wild animal populations.

⁷⁴ The accumulation of all these costs results in the high use of public funds to support animal agriculture, an industry where many factors influence its true cost, as shown in a recent report by the Impact Institute.⁷⁵

The social consequences of avian influenza outbreaks are substantial and far-reaching. The disease can lead to fear and panic among the public, leading to the stigmatisation of affected communities and a breakdown in social cohesion, threatening local economies and public mental health. Additionally, the disease can affect food security, especially in developing countries where poultry serves as a primary protein source.⁷⁶



⁷³ [Espinosa, R., Tago, D. and Treich, N., 2020. Infectious diseases and meat production. *Environmental and Resource Economics*, 76\(4\), pp.1019-1044.](#)

⁷⁴ [Espinosa, R., Tago, D. and Treich, N., 2020. Infectious diseases and meat production. *Environmental and Resource Economics*, 76\(4\), pp.1019-1044.](#)

⁷⁵ [Impact Institute, 2023. External Costs of Animal Sourced Food in the EU](#)

⁷⁶ [A fifth of world meat, milk and egg production lost to disease annually](#)

Conclusions

Higher animal welfare standards are the answer to the problem

How can we prevent a future where budgets must be annually expanded to accommodate the skyrocketing costs of sustaining a broken system where outbreaks are increasingly common? Scientists have repeatedly pointed to higher animal welfare standards as the answer to the growing problem of animal disease outbreaks.⁷⁷

When higher animal welfare standards are implemented in farming practices, the animals are more resilient⁷⁸ which directly influences their abilities to cope with changing environments. In intensive farming systems, every alteration can be extremely stressful to an already weakened, nervous flock or herd, whereas, with higher welfare systems, better resilience is common. Furthermore, antibiotic use is much lower on farms with high animal welfare standards compared to those with poor welfare,^{79,80} contributing to the goal of halving antibiotic sales for use in farmed animals and aquaculture by 2030.⁸¹ Lower stocking densities contribute not only to improved welfare outcomes,⁸² but also to a decrease in pathogen transmission. The Scientific Task Force on Avian Influenza emphasises the necessity of reforming the poultry sector, stressing that “reassessment of the nature and sustainability of poultry production systems is required.” It states that “HPAI risks are high where (poultry) production occurs in high-density settings” and emphasises the need to reduce the density of poultry farms.⁸³ It is essential for the poultry industry to shift towards smaller flock sizes, reduced stocking densities, and the use of robust breeds with enhanced natural immunity.

⁷⁷ [Compassion in World Farming, 2023. Bird flu: only major farm reforms can end it](#)

⁷⁸ [Colditz Ian G., Hine Brad C. \(2016\) Resilience in farm animals: biology, management, breeding and implications for animal welfare. *Animal Production Science* 56, 1961-1983](#)

⁷⁹ [Rodrigues da Costa, M., & Diana, A. \(2022\). A Systematic Review on the Link between Animal Welfare and Antimicrobial Use in Captive Animals. *Animals : an open access journal from MDPI*, 12\(8\), 1025. <https://doi.org/10.3390/ani12081025>](#)

⁸⁰ [The end of superbugs starts with better animal welfare](#)

⁸¹ [Farm to Fork Strategy](#)

⁸² [EFSA AHAW Panel \(EFSA Panel on Animal Health and Animal Welfare\), Nielsen, SS, Alvarez, J, Bicoût, DJ, Calistri, P, Canali, E, Drewe, JA, Garin-Bastuji, B, Gonzales Rojas, JL, Schmidt, CG, Herskin, M, Miranda Chueca, MA, Padalino, B, Pasquali, P, Roberts, HC, Spooler, H, Stahl, K, Velarde, A, Viltrop, A, Winckler, C, Tiemann, I, de Jong, J, Gebhardt-Henrich, SG, Keeling, L, Riber, AB, Ashe, S, Candiani, D, García Matas, R, Hempen, M, Mosbach-Schulz, O, Rojo Gimeno, C, Van der Stede, Y, Vitali, M, Bailly-Caumette, E and Michel, V. 2023. Scientific Opinion on the welfare of broilers on farm. *EFSA Journal* 2023; 21\(2\):7788, 236 pp.](#)

⁸³ [Scientific Task Force on Avian Influenza and Wild Birds, July 2023. Op. Cit.](#)

The pervasive and costly impact of major animal disease outbreaks demands our immediate attention and concerted action. The statistics presented here, ranging from the prevalence of zoonotic diseases to the economic repercussions for various stakeholders, underscore the urgency of addressing this global challenge. The COVID-19 pandemic serves as a stark reminder of the dire consequences when zoonotic diseases go unchecked, disrupting lives, economies, and societies on a global scale. This crisis has demonstrated that we cannot afford to maintain business as usual in our animal agriculture practices. The need for change is evident, and it is a responsibility we share for the sake of our health, our economy, and our shared future.

EFSA acknowledges the pivotal role of animal welfare in disease prevention, emphasising that "Stress factors and poor welfare can lead to increased susceptibility to transmissible diseases among animals."⁸⁴ **Ensuring that animals in the EU are reared with standards that guarantee higher welfare is a key tool to help avert disease outbreaks that are costly to the industry, the consumers, the public, and governments.** In our interconnected global economy, measures to curtail disease transmission among animals raised for food should be prioritised through trade agreements that enforce stringent animal welfare standards in the country of origin and by discontinuing live transport, aside from the most pressing changes needed at the farm level.

There is no time left to remain idle in the face of a problem so vast, so profound, with tangible consequences and measurable costs.

"Benefits to society of prevention effort are determined by the weakest member of society".⁸⁵

⁸⁴ [EFSA, 2022. Animal Welfare](#)

⁸⁵ [Sandler, Todd. Global challenges: an approach to environmental, political, and economic problems. Cambridge University Press, 1997.](#)

EUROGROUP FOR ANIMALS

© Eurogroup for Animals, January 2024

Eurogroup for Animals
Rue Ducale 29 – 1000 Brussels
Tel: +32 (0)2 740 08 20

info@eurogroupforanimals.org
eurogroupforanimals.org