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Worldwide.



Preventing Pandemics

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Preventing Pandemics

Tackling the root causes of pandemics is essential for any WHO instrument on pandemic prevention, preparedness and response

In response to the global fallout of COVID-19, on 1st December 2021, governments at the World Health Assembly (WHA) agreed to draft and negotiate a convention, agreement or other international instrument under the Constitution of the World Health Organization (WHO) to strengthen pandemic prevention, preparedness and response.

An international pandemic instrument will be an important step towards building a more resilient international health architecture and protecting the world from future health crises. With the frequency and severity of pandemics increasing, the inclusion of prevention into the instrument's scope is welcome and necessary.

COVID-19 has demonstrated clear gaps at every level of our ability to prevent, predict and respond to zoonotic disease outbreaks. It is of utmost importance that an international pandemic instrument does not restrict its focus to post-outbreak prevention measures known as secondary and tertiary pandemic prevention, such as vaccination campaigns, biosecurity measures, or pathogen surveillance, for which a significant amount of funding and resources are currently allocated. Instead, it needs to address the primary causes of zoonotic disease (re)emergence, focusing on pre-spillover prevention, also known as primary prevention.

The current health mechanisms and processes have failed in part because they are not built on a holistic understanding of the interconnectedness between humans, animals and the environment¹. This new instrument has a significant potential to rectify a siloed approach to public health if it is designed with One Health (as defined by the One Health High-Level Expert Panel, OHHLEP) at its core.

Governments must seize the opportunity to establish an international pandemic instrument that instead advances prevention measures which address the root causes of zoonotic pathogen emergence, spread, and mutation – at its sources.

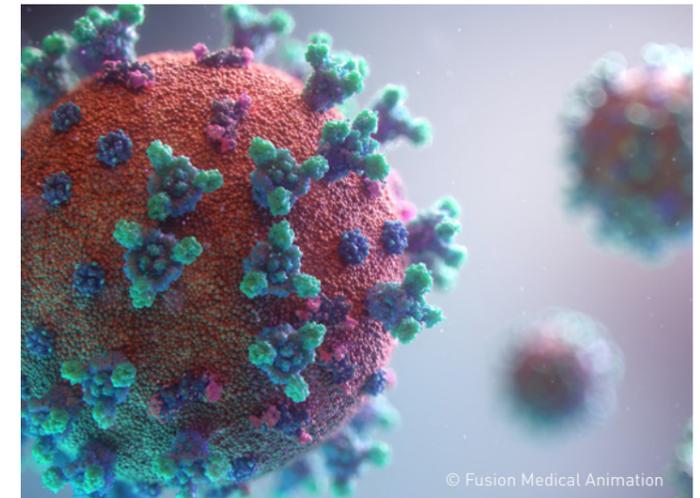
Humans, animals and ecosystems: how they link to pandemics

Approximately 75% of emerging infectious diseases², such as Severe Acute Respiratory Syndrome (SARS), Influenza A virus subtype H5N1 and Bovine Spongiform Encephalopathy (BSE), are zoonotic.

Zoonotic pathogens, which pass from animals to humans, can also spread between animal species, in some cases mutating and gaining new characteristics, before the agent of disease begins infecting humans. Recent studies indicate that the COVID-19 pandemic had its origins in the live wildlife trade, with a live animal market as the epicentre of the pandemic³. Later, COVID-19 infected millions of minks in fur farms with “new” virus variants having picked up mutations spilling back to humans, potentially affecting vaccine efficacy⁴. Zoonoses originate in a wide range of animal species. An animal species can also act as an intermediary host for a zoonosis produced in another species before facilitating onwards transmission to humans.

A growing body of evidence confirms that ecosystem degradation and the exploitation of wild and domestic animals exacerbate the risks to humans from zoonotic diseases. These risks are further increasing due to globalisation and unsustainable consumption patterns⁵. Although many pathogens exist in animals without impacting human health, as long as humans interact with animal populations, the risk of zoonotic pathogen spillover and its consequences will remain and could become endemic to a population.

Yet, animal species play significant ecological and socio-economic roles that cannot be undermined in favour of public health protection. Although bats carry a variety of pathogens, which has led to an unfortunate culling of bat populations in some parts of the world, they provide vital ecosystem services, such as pollination, pest control and seed dispersal⁶. Similarly, following the 1997 Bird Flu outbreak, several attempts to “restructure” the poultry industry by discouraging “backyard” poultry farmers negatively impacted poor households, in particular women, who had few other ways to generate an income⁷. The large-scale culling of farm animals also creates economic losses for farmers and even contributes to food insecurity.



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Animals themselves are not the main cause of pathogen transmission, but rather human social behaviour is to blame for how it impacts the natural world^{2,a} and enables bacteria, viruses and prions from animal populations to emerge in a susceptible human population. Therefore, measures to prevent emerging zoonotic diseases must be focused on human activities and the way humans interact with other species⁶.

^a p. 4

Beyond the tragic human health toll of COVID-19, zoonoses cause approximately one billion cases of illness in people and millions of deaths every year⁸. At the time of writing, multiple countries are also affected by highly pathogenic avian influenza (HPAI) and Monkeypox; previous outbreaks of both diseases have been linked to human exploitation of animals.

Prevention of zoonotic pathogen spillover by addressing human activities

Bernstein et al. supplement the WHO's five phases of infectious disease emergence: pre-emergence, emergence, localised transmission, epidemic, and pandemics, with 'pathogen spillover' as a sixth and critical step of the path to pandemics⁹. This is crucial in recognising that most new infectious diseases result from the spillover of pathogens from animals to people, once human activity upsets the natural balance¹⁰.

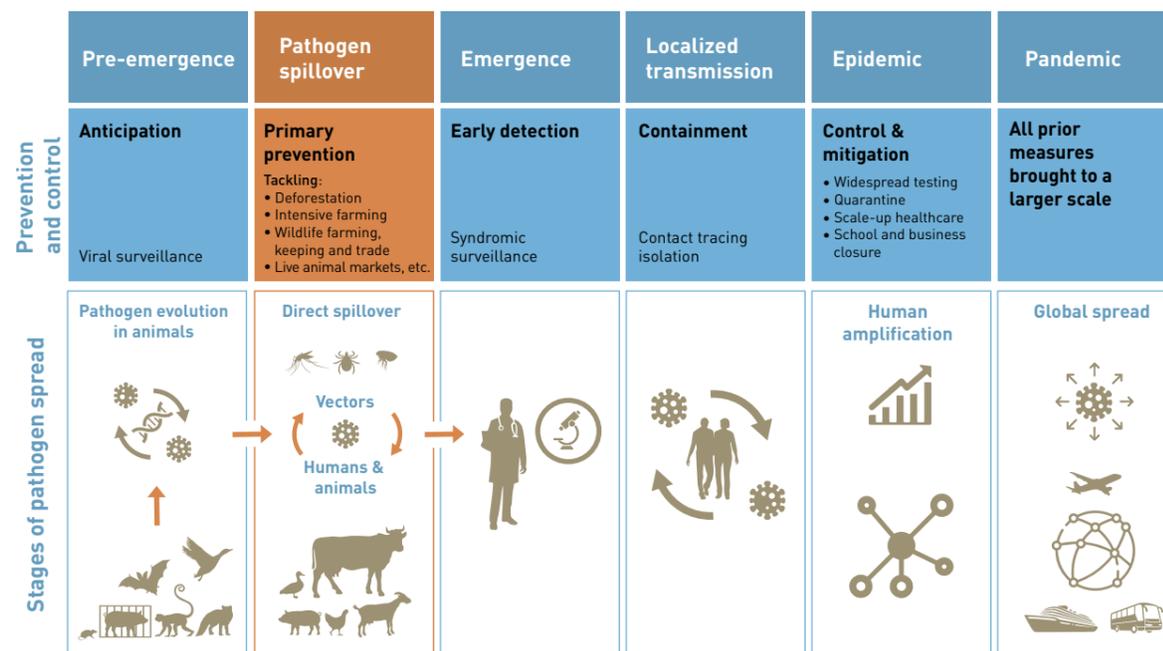


Figure 1: Phases of pathogen emergence^{9,b}

Preventing the spillover of pathogens at their source aims to eliminate risk factors for the transmission of infectious diseases from animals to humans, especially through prolonged contact with animals at the time of pathogen shedding through handling, slaughter or consumption¹¹. This includes outcomes that promote better animal welfare and health as well as the cessation of high-risk practices.

^b adapted by FOUR PAWS

There is significant consensus from the scientific community that interaction between wildlife and humans is considerably risky. Locations near the edges of tropical forests, where more than 25% of the original forest has been lost, are incubators for zoonotic spillovers¹². Deforestation causes habitat fragmentation and enlarges ecotones, increasing the risk of diseases being transmitted from wild animals to humans or domesticated animals.

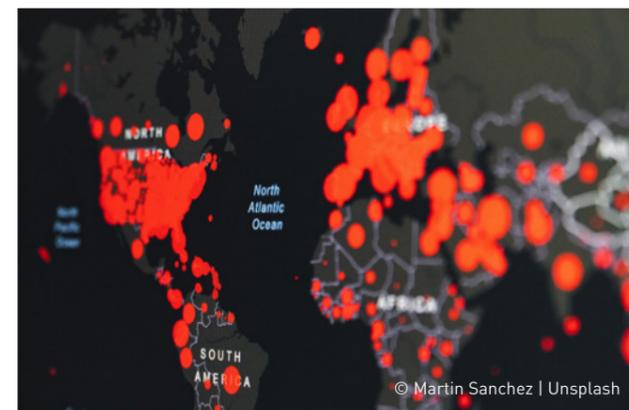
Agricultural intensification and expansion, which are major drivers of deforestation, also play a significant role in pathogen emergence through land-use change for feed and livestock rearing. Moreover, high-density livestock operations can serve as a crucible for the spillover from wild animals into livestock or/and as incubators for pandemic influenza strains⁹.

Improved husbandry of farmed animals, regulations on wildlife trade, ending risky practices, such as the dog and cat meat trade, and conservation of tropical forests can prevent spillovers and subsequent outbreaks as well as boost greenhouse-gas mitigation and wildlife conservation¹³. Such spillover prevention measures reduce pandemic risk, avoid the high costs of post-spillover containment, and bring ancillary benefits. Protecting rainforests alone would bring approximately USD 4.3 billion annually in social benefits from reduced greenhouse gas emissions. Yet, currently, no more than USD 4 billion is spent annually worldwide on spillover prevention¹³.

Costs and benefits: why prevention is cheaper than cure

The COVID-19 pandemic will take decades to recover from¹⁴. It has eroded gains in poverty reduction and against Human Immunodeficiency Virus (HIV), tuberculosis (TB) and malaria. Disruptions to normal services to prevent and treat these diseases could result in a doubling of mortality from malaria, hundreds of thousands of deaths from HIV, while an additional 400,000 people could die from TB^{15,16}.

No matter where a pandemic starts, all countries will suffer from it, and it can only be eradicated with a globally supported and coordinated response. Therefore, it is in the interest of all countries to ensure that all governments, especially those with limited resources, are enabled to take the appropriate measures to prevent infectious outbreaks at the source. Financial support to these ends would also be a clear signal for improving global health justice. A yearly investment of USD 1.9–3.4 billion to strengthen animal health and human health systems would yield an estimated global public benefit of more than USD 30 billion annually, a return on investment of 9 to 1 or higher.



Researchers identify limiting deforestation and tackling wildlife trade as the most cost-effective ways to prevent pandemics⁹. The measures for stopping deforestation consist of eliminating harmful subsidies, supporting the territorial rights of indigenous people and implementing direct forest-protection payments that economically out-compete deforestation (this latter approach has proven to be more effective than carbon pricing)¹².



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Cost assessments of tackling the wildlife trade have focused on enforcing existing international conventions such as CITES, banning and enforcing bans on high-risk species and supporting communities who rely on wildlife for essential nourishment.

The global costs of the COVID-19 pandemic as of 2020 lie between USD 8.1 and USD 15.8 trillion¹². Yet COVID-19 is far from being the only zoonosis claiming human lives and disrupting economies. Research estimates the global value of lives lost due to zoonoses at a yearly USD 350 billion (at the lowest estimate) with an additional USD 212 billion in direct economic losses^{9,c}. At the same time, prevention tackling the root causes of pathogen spillover from animals to humans is estimated to require annual investments of approximately USD 20 billion. **In other words, prevention would cost around 5% of the yearly value of lives lost from emerging infectious diseases⁹.**

Available research does not take into account the cost estimates of major outbreaks of pathogens in livestock farming (such as Japanese encephalitis, swine flu or avian influenza). Yet, outbreaks in livestock cause considerable economic losses, and experts warn that mutating pathogens may soon become transmissible to humans, triggering the next pandemic. A 2022 IUCN report states that “the global trend in large-scale industrial production of pigs, poultry and farmed wildlife species is coincident with pandemic emergence of highly pathogenic human or zoonotic influenzas, and coronaviruses (...)”¹⁷.

^c “To compute how much to spend on preventing spillover, we tabulated every novel viral zoonosis that has appeared since 1918 that killed at least 10 people (...). Our core analysis includes Spanish influenza; this improves our ability to calibrate the tail of the distribution composed of severe events that only occur a few times in 100 years. We also present results obtained with that event excluded. Last, we used these data to calibrate a hyperbolic distribution of annual mortality relative to the current world population for novel emerging viral infections. The data provide the frequencies and mean severities of all outbreaks and of severe events. We then use this information to calibrate the remaining parameter of the hyperbolic distribution. See details in the Supplementary Materials.” (Bernstein et al. 2022)

Tackling the root causes of zoonotic disease emergence to safeguard public health is the most sustainable and cost-effective investment we can make while simultaneously supporting global health and development outcomes. To be effective, the Pandemic Instrument must therefore prioritise prevention measures that mitigate the risk of zoonotic pathogens emerging, mutating, and spilling over to humans. This must include measures aimed at eliminating the risks associated with wildlife trade, dog and cat meat trade and intensive livestock farming.

The root causes

The current International Health Regulations (IHRs) are largely built on the assumption that disease outbreaks cannot be prevented, only contained and extinguished¹⁸. The result is that, to date, most resources and financing for dealing with current and future pandemics have been focused on pandemic preparedness and mitigation measures¹³, with pandemic prevention measures lacking.

Nor is surveillance or containment effective in substantially mitigating impact. The rapid and uncontrolled spread of SARS-CoV-2 between mink farms was not halted by the implementation of measures based on surveillance at the human-animal interface, enhanced biosecurity or the use of personal protective equipment. Despite the implementation of such measures, infections continued to spread among mink farms, including the subsequent spread of mink-associated variants to farm employees and the broader communities¹⁹.

Several influential reports, including “Preventing the Next Pandemic: Zoonotic diseases and how to break the chain of transmission”², identify important anthropogenic factors for the occurrence of zoonoses, which if addressed can contribute to the prevention of pandemics.

These root causes include the increasing demand for animal proteins, the unsustainable intensification of agriculture, the trade in dogs and cats for their meat and the increasing use and exploitation of wildlife. Globally, the settings in which a huge proportion of animals are raised, traded, transported and slaughtered – cramped and overcrowded environments, poor hygiene, myriad origins, and conditions suppressing immune systems and encouraging pathogen excretion and uptake – create an ideal situation for the exchange, genetic modification and emergence of new pathogens.



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A study surveying experts from multiple disciplines, titled “How to prevent the next pandemic?”, shows that **the risk of pandemics would decrease if improving animal welfare was a central aspect of pandemic prevention plans²⁰**. It underlines that, for complex matters of animal health and welfare, pharmaceutical or biosecurity responses are not a long-term solution and a paradigm shift is needed to address our unsustainable relationship with animals and nature.

FOUR PAWS urges governments to advocate the following to the INB to ensure the pandemic instrument

- Addresses preventing the likelihood of spillover of viruses and other pathogens from animals to other animals or humans in the first place.
- Acknowledges the interconnections between human, animal and environmental health and wellbeing for pandemic prevention and ensures prevention measures align with OHHLEP's definition of One Health.
- Supports the mainstreaming and integration of One Health into international and national strategies for preventing, preparing and responding to health risks and disease outbreaks across all sectoral policies and encourages joint investment in interdisciplinary approaches.
- Provides legal coherence between existing environmental and animal-related treaties such as the CBD, CMS and CITES and should reinforce and complement their existing provisions in line with a One Health approach.
- Includes a legally binding obligation on Parties not to trade in, or market, any wild animals, either domestically or internationally, without first assessing the risks of any such practice to animal and/or human health and taking any necessary measures to mitigate such risks.
- Explicitly recognises the role of food systems in enabling pathogen spillover, including in intensive farming contexts and the benefits of sustainable food systems.
- Recognises the risks of the dog and cat meat trade as a potential source of pathogen emergence.

Experts and civil society organisations working on animal health and welfare and environmental protection must be included in the deliberations and negotiations of the INB to complement the expertise of those in the health field.

Mitigate the environmental impacts of intensive farming

As highlighted by the IPBES "Workshop Report on Pandemics and Biodiversity"²¹, **the rising demand for meat and the globalised food trade drive pandemic risk through land use, land change and biodiversity loss.** With animal agriculture rapidly expanding into the natural environment, humans and domesticated animals (inside and outside of farming settings) come more frequently into contact with wild animals and



their pathogens, increasing the risk of zoonotic spillovers. Land-use change alters resource availability for wild animals and affects ecosystem processes that protect humans from spillovers²². For example, due to forest fragmentation, declines in the wildlife population and the proliferation of cattle rearing, vampire bats in Latin America have shifted their feeding behaviour from wildlife to human and livestock, spreading rabies.

An example of the links between agricultural intensification and pathogen spillover can be found in the



first-known outbreak of Nipah virus in 1998. The underlying cause of the spillover to humans was the intensification of industrial pig farming into areas populated by fruit bats, which are the natural reservoir for Nipah virus²³. The virus then spilt from pigs to humans, and pig transports further spread the disease to other areas.

Large, high-density poultry and pig farms heighten pandemic influenza risk as these species possess virus strains that can easily swap genomic segments and create novel influenzas, with the potential for efficient and sustained human-to-human transmission²⁴.

Poultry and pork production has grown rapidly, especially in low and middle-income countries where production may double or more in the next decade²⁵.

Climate change also increases the risk of pandemics, creating favourable conditions for the evolution and spreading of infectious diseases^{26,27}.

FOUR PAWS urges governments to

- Implement policies to enable a transition to sustainable, healthy and diverse food systems that are predominantly plant-based, by leveraging agroecology and high biodiversity practices for food and agriculture²⁸.
- Implement and enforce policies and legislation for the conservation of ecosystems and biodiversity (especially land use rights and collective property rights).
- Adopt and implement integrated policy approaches to remove and shift incentives away from intensive agriculture reliant on deforestation, land-use change and environmental degradation.
- Create and implement mechanisms to incentivise sustainable, regenerative agricultural systems with ecological approaches that create minimum disturbance to ecosystems in line with the FAO 10 elements of agroecology²⁹.
- Put in place and carry out payments for ecosystem services that recognise the role of farmers and communities in protecting global health and biodiversity. Such payments should aim to maximise the preservation of biodiversity and native habitats and support the communities that uphold them.

- Recognise traditional and local food cultures; provide information on the nutritional value of diverse foods; and promote the contribution of dietary diversity to good nutrition, conservation of agrobiodiversity and sustainable use of natural resources.
- Identify, rank and label consumption patterns with high zoonotic risk along with recognising and labelling products from agricultural systems that do not rely on land-use change, allowing for the regeneration of natural ecosystems²¹.
- Allocate a percentage of agricultural land for preserving and restoring natural and semi-natural landscapes and biodiversity, which are essential for protecting human health from pathogen spillover.
- Set in place mandatory pathogen spillover risk assessments for exploitative activities carried out in areas of a high risk of disease emergence. Environmental impacts and associated pathogen spillover risks of upstream feed production are properly considered when assessing the performance of livestock farms.
- Create a due diligence obligation on companies whose commodities and products might have contributed to deforestation and its associated pathogen spillover risk.
- Respect the precautionary principle and avoid high-density, intensive livestock systems as well as other exploitative human activities adjacent to ecosystems of high biodiversity³⁰.

Tackle zoonotic risks from poor animal welfare in intensive farms

Industrial animal agriculture is a powerful incubator of diseases. Research identified large pig and poultry farms as the most probable hotspots for the genetic reassortment of Influenza virus into a strain with pandemic potential³¹. Swine species can act as reservoirs of many other pathogens, including Hepatitis E³²; and the 2009 Swine flu pandemic started in Mexico, close to a major concentration of industrial pig farms. A recent study concluded that European pig farms – nearly all of which are industrial – host building blocks for pre-pandemic influenza viruses³³. Transitioning to other livestock species (for productivity reasons, climate considerations or zoonotic mitigation purposes) while maintaining the same industrialised system will only shift the problem.

Many industrial farms use production methods that severely restrict basic animal behaviour and needs, such as access to the natural environment and even free movement, especially in cage-keeping systems. Under natural outdoor conditions, a more virulent pathogen might be less transmissible because, by killing its



host, it reduces the opportunity for transmission³⁴. This naturally limiting mechanism is bypassed, however, under the cramped and unhygienic conditions found in factory farms. Additionally, the genetic proximity in high-performance breeds decreases resilience to diseases³⁵ and adaptability to environmental stressors.

Yet, there are established and effective husbandry and welfare practices that can improve health outcomes for animals. For example, using straw as enrichment and roughage reduces the incidence of gastric ulcers and infections from tail biting. Such solutions can also offset one of the barriers to the wide uptake of technological disease prevention strategies, namely a lack of capital, particularly in developing countries.

Along with the intensification of animal farming, production systems have specialised both at the farm and at the regional level, where animals are born, fattened and slaughtered in different countries³⁶. Additionally, intensive production systems rely on substantial imports of feed from other continents^{37,38}. Being dependent on long-distance transportation of animals and feed, livestock farming is prone to disruptions during pandemic outbreaks and, moreover, can increase the risk of spreading viruses.

The pressure to produce more animal products at cheaper prices leads to increasingly more animals being kept in poor-welfare environments. Such a food system fails to address the inequalities in our diets, such as hunger or obesity, and has led to an increase in non-communicable diseases³⁹, such as cancer.

Many communities reliant on animals lack sufficient access to animal health and welfare practitioners and basic training. Key surveillance opportunities are also missed, meaning zoonotic diseases may not be detected and dealt with at the earliest possible stage.

By designing animal husbandry in ways that foster animal welfare, we will improve the health and well-being of both humans and animals.



FOUR PAWS urges governments to

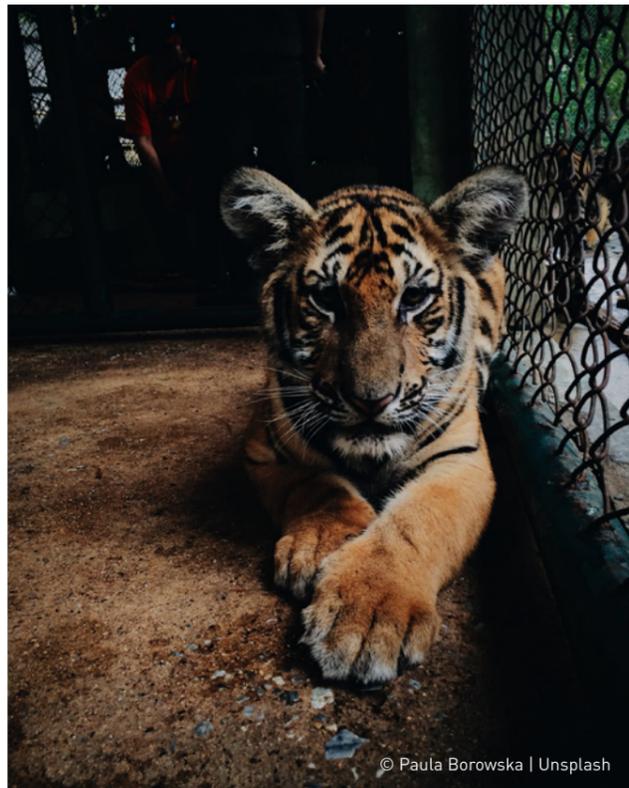
- Adopt and implement policies to incentivise agrobiodiversity and livestock biodiversity that reorient the genetic selection of livestock away from extreme productivity and towards natural genetic diversity.
- Where there is a link to the increased zoonotic risk and environmental degradation, apply taxes or levies on meat consumption, production, livestock production or other forms of consumption to incentivise low-risk, sustainable diets²¹.
- Establish strong and binding health and welfare regulations and enforcement regarding animal husbandry, transport, market and slaughter. Improving the conditions of these production stages will improve animal welfare, health and immunocompetence and will reduce zoonotic risks.
- Following the precautionary principle and a health-based approach, end the international trade and long-distance transport for live animals to reduce the risk of zoonotic pathogen mutation, spillover and transmission across long distances².
- Reduce overall livestock numbers and the size of farms and stocking density to contain the environmental viral load when disease outbreaks occur on farms and reduce disease spreading between farms.
- Adopt strategies to provide training for persons in direct contact with livestock for improved handling and hygiene, given that they are at higher risk of contracting infectious diseases from animals and potentially becoming vectors.

Time to ban high-risk wildlife trade

More than 70% of emerging infectious diseases come from wild animals⁴⁰. In light of this data, tackling both the legal and illegal wildlife trade is crucial for preventing epidemics and pandemics in humans and has been recognised as such by international organisations and scientists worldwide.

In its "Workshop Report on Biodiversity and Pandemics" (2020), IPBES estimated that another 1.7 million currently 'undiscovered' viruses are thought to exist in mammals and birds, of which up to 827,000 could have the ability to infect people²¹.

In April 2021, the WHO, WOA (World Organisation for Animal Health, formerly OIE) and UNEP published interim guidance on reducing public health risks associated with the sale of live wild animals of mammalian species in traditional food markets⁴¹.



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CBD Decision 14/4 on Health and Biodiversity, adopted by the Fourteenth Conference of the Parties to the Convention on Biological Diversity in 2018, invited the WHO to "support the development and implementation of measures, guidance and tools for promoting and supporting the mainstreaming of biodiversity and health linkages in the health sector, and to consider establishing a regular reporting mechanism for the progress of activities on biodiversity and health under the joint work programme of the Convention on Biological Diversity and the World Health Organization⁴²."

Extend the mandate of international regulatory bodies to reduce zoonotic emergence and spillover risk stemming from wildlife trade.

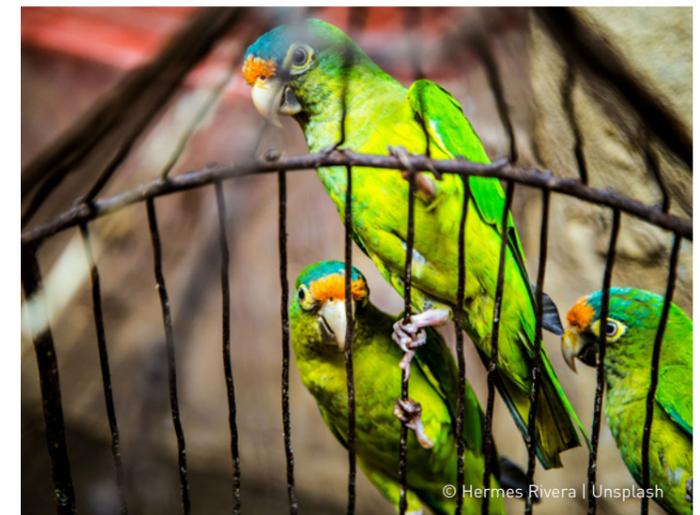
The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is the major international treaty regulating international wildlife trade, and it has the potential to play an important role in mitigating pandemic risks associated with wildlife trade and markets through the extension of its mandate to include the regulation of international trade in species that are considered to present a risk to human and/or animal health and to consider the animal and health aspects of any proposed trade transaction.

In April 2021, the CITES Standing Committee announced the establishment of an intersessional working group to consider what role, if any, CITES could play in reducing the risk of future zoonotic disease emergence associated with the international wildlife trade⁴³. In its report to the 74th meeting of the CITES Standing Committee in March 2022, the Working Group made a number of recommendations for consideration at the 19th Conference of the Parties in November 2022⁴⁴. However, the recommendations fell short of proposing a Resolution on One Health for consideration at CoP19 and only included proposals for discussions on whether a Resolution might be submitted to CoP20. Several Parties expressed concerns about the apparent lack of urgency in the Working Group's recommendations.

UNEP-JNCC and WCMC recommend, in the report on the zoonotic potential of international trade in CITES-listed species (2021), the development of a closer relationship between CITES and the Quadripartite to advance the One Health approach⁴⁵.

Additional ongoing studies, including by Species360 (an EWC International Champion), seek to provide additional information that will assist in the proposed creation of a central repository of disease-species associations covering the full range of zoonotic pathogens and their associated diseases⁴⁶.

In addition to CITES, the WOA can reinforce One Health strategies through a new Wildlife Health Framework. They have expressed interest⁴⁷ in extending their remit from domestic animal health (livestock) to consider wild animal health. They are, therefore, also best placed for this work due to being a key member of the quadripartite.



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FOUR PAWS urges governments to

- ▶ Ensure the scope of the proposed Treaty addresses the prevention of pathogens spillovers from wild animals to humans.
- ▶ Include a legally binding obligation for states within the proposed Treaty that commits Parties not to trade in, or market, any wild animals, either domestically or internationally, without first assessing the risks of any such trade, or markets, to animal and/or human health. This would institutionalise a 'One Health' approach to wild animal trade and markets.
- ▶ Engage with existing international regulatory bodies, including the UN Convention against Transnational Organised Crime (UNTOC), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the World Organisation for Animal Health (WOAH), to ensure coherence with related regulatory and implementation mechanisms.
- ▶ Support the adoption and implementation of the new Protocol on the illicit trafficking in wildlife under the United Nations Convention Against Transnational Organized Crime (UNTOC).
- ▶ Support the development of new agencies in international wildlife health for both captive and wild animals. I.e., WOAH's proposal, or via a new CITES agreement.
- ▶ Adopt guidelines set out by the IUCN SSC Wildlife Health Specialist Group and the OIE on working with free-ranging wild mammals⁴⁸, and make use of the MAP acronym: Minimize, Assess, and Protect⁴⁹.
- ▶ Stop commercial trade of all high-risk wildlife species listed in the OIE Situation Report¹¹ (incl. mink, otter, lions, tigers, pumas, snow leopards, gorillas, white-tailed deer, fishing cat, binturong, South American coati, spotted hyena, Eurasian lynx, Canada lynx, hippopotamus, mule deer)⁵⁰.
- ▶ Put in place mechanisms to limit the disturbance, unnatural migration, and removal of wild animal species through human encroachment, commercial wildlife trade, and other activities, such as animal markets (live animals, 'wet markets', selling dead animal products/Traditional Asian Medicine (TAM) etc.).

Phase out fur farming and the fur trade

The most common and economically important species used in commercial fur farming – namely minks, raccoon dogs and foxes – can all become infected with SARS-CoV-related coronaviruses^{51,52,53}. **Due to this**



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susceptibility and the highly intensive conditions on farms with thousands of animals caged in close proximity to each other, the fur industry has been proven to be a high-risk reservoir for mutations and pathogens.

According to a University of Cambridge study, large-scale farming of carnivores like mink could increase the risk of undetected 'disease reservoirs', in which a pathogen could spread to many animals and mutate to become a risk to human

health^{54,55}. Raccoon dogs were discussed as intermediate host for the first SARS pandemic between 2002 and 2004^{56,57}. Until the year 2022, the new SARS-CoV-2 virus has been identified on more than 440 mink farms in 12 countries in Europe and North America⁵⁸. Transmission from humans to farmed mink, from mink to mink and the spread between fur farms has been regularly observed. Spillover from mink to humans was reported in the Netherlands, Denmark, Poland, Sweden, and presumably the United States^{59,60,61}.

A 2021 EFSA and ECDC report⁶² recognised that American mink are highly susceptible to SARS-CoV-2 and that once the virus is introduced – primarily via infected humans on farms, it spreads very efficiently largely due to the high density of animals on fur farms. Due to public health concerns, approximately twenty million farmed mink have been killed in the EU under orders from local health authorities and national governments⁵⁸. As an emergency measure, mink breeding was – at least temporarily – suspended in countries such as Denmark and Italy. A number of European countries also moved to legally phase out mink farming or end all commercial fur production. Following recommendations of public health officials and infectious disease experts, a permanent ban on breeding mink has been adopted in the Canadian province of British Columbia.

A statement of the World Organisation for Animal Health (WOAH, formerly OIE) published in November 2020 already acknowledged that susceptible animals, such as mink, could become a SARS-CoV-2 reservoir that may pose a continued public health risk and lead to future spillover events to humans. The GLEWS+ risk assessment on SARS-CoV-2 and animals used for fur production, published jointly by the Food and Agriculture Organization (FAO), the World Organization for Animal Health (WOAH, formerly OIE) and the World Health Organization (WHO), states that fur farms in Europe pose a high risk in all three assessment categories. These include the risk of introduction and onward spread of SARS-CoV-2 in fur farms, the onward transmission of the virus from fur farms to human populations, and the transmission of SARS-CoV-2 from fur farms to wildlife populations susceptible to the virus⁶³.

The Ad Hoc Group on COVID-19 and Safe Trade in Animals and Animal Products, established by the OIE, also classifies unprocessed mink skins as unsafe for international trade⁶⁴.



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FOUR PAWS urges governments to

- ➔ Include a legally binding obligation for the Parties in the international pandemic instrument to phase out fur farming.
- ➔ Accompany the phase-out with fair compensation schemes to reimburse mink farm operations and provide professional retraining and assistance with transitioning to other (preferably non-animal) activities.
- ➔ Immediately prohibit the cross-border transportation/imports/exports of live mink and raw hides as well as transport of live mink between farms.
- ➔ Adopt preventive restrictions on the breeding, transport and live export/import of live raccoon dogs and foxes, plus raw furskins from these species, to eliminate any potential risk of disease transmission from trade involving these species.

An end to the dog and cat meat trade

Up to 30 million cats and dogs are killed annually for human consumption, with animals frequently slaughtered in live animal markets alongside other species. The trade poses a significant public health risk. It severely hampers global efforts to end rabies, a fatal disease that kills approximately 59,000 people every year and results in economic losses of an estimated USD 8.6 billion⁶⁵, and contributes to the spread of diseases like cholera and trichinellosis.

Aside from the obvious animal welfare concerns, given the unhygienic conditions in which the animals are transported, confined and slaughtered as well as the lack of enforcement of any health and safety regulations, it is impossible to ensure that the meat sold at these markets is safe for human consumption. The dog and cat meat trade presents similar conditions to those seen at the likely origin of COVID-19 – mixing between thousands of animals (including wildlife), poor hygiene, a huge number of involved animals, and animals from disparate geographical sources. It is, therefore, only a matter of time before the next deadly zoonotic disease emerges. **The practices of the dog and cat meat trade encompass a considerable risk of pathogen transmission at all stages.**

Multiple outbreaks of rabies have been documented and linked to trade, with multiple studies showing a significant prevalence of rabies-positive animals in slaughterhouses^{66,67}. Dogs are caught indiscriminately of their rabies vaccination status, leaving societies vulnerable to transmission of rabies from the wild, both directly and through



dogs. The trade's detrimental effects on rabies control efforts, particularly through impeding efforts to attain and maintain herd immunity, cannot be ignored in the context of ensuring public health.

It is also important to note that dog and/or cat meat is only eaten regularly by a minority of people in countries where the trade is present:

- ➔ 6% in Vietnam⁶⁸
- ➔ 12% in Cambodia⁶⁹
- ➔ 4% in Indonesia⁷⁰

It is not seen as an essential food source by the majority – and in fact, most people would support a ban on the trade

- ➔ 88% in Vietnam⁶⁸
- ➔ 90% in Cambodia⁶⁹
- ➔ 93% in Indonesia⁷⁰



FOUR PAWS urges governments to

- ➔ Support a global commitment to end the dog and cat meat trade globally, urging countries where this trade is present to use existing policies to curtail the illegal practices of the trade and to seriously consider new policies and enforcement to ban the trade.
- ➔ Conduct an urgent assessment of the dog and cat meat trade, including:
 - current health risks including rabies;
 - potential paradigms of novel pathogen emergence;
 - potential measures to address these risks, including a ban.
- ➔ Rigorously consider the benefits of the dog and cat meat trade vs current and potential health and emerging pathogen risks and then consider measures to protect public and economic health.
- ➔ End the dog and cat meat trade in Southeast Asia to help eradicate current zoonoses such as rabies and cholera and prevent the real risk of future zoonoses emerging.
- ➔ Issuing a comprehensive Law or Directive prohibiting all aspects of the dog and cat meat trade, including trafficking, sale, slaughter and consumption.
- ➔ Ensuring the closure of all markets and facilities selling and/or slaughtering live dogs and cats.
- ➔ Issuing public statements regarding the public health dangers of slaughter and consumption of dogs and cats.
- ➔ Taking strong measures to ensure the enforcement of existing laws, regulations and directives to end the dog and cat meat trade.

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About FOUR PAWS

FOUR PAWS is the global animal welfare organisation for animals under direct human influence, which reveals suffering, rescues animals in need and protects them. Founded in 1988 in Vienna by Heli Dungler and friends, the organisation advocates for a world where humans treat animals with respect, empathy and understanding. The sustainable campaigns and projects of FOUR PAWS focus on companion animals including stray dogs and cats, farm animals and wild animals – such as bears, big cats and orangutans – kept in inappropriate conditions as well as in disaster and conflict zones. With offices in Australia, Austria, Belgium, Bulgaria, France, Germany, Kosovo, the Netherlands, Switzerland, South Africa, Thailand, Ukraine, the UK, the USA and Vietnam as well as sanctuaries for rescued animals in eleven countries, FOUR PAWS provides rapid help and long-term solutions.



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