

To,
Dr Harsh Vardhan Goel
Minister of Health and Family Welfare
Government of India

Subject: Urging the Ministry of Health and Family Welfare for Enactment and Enforcement of Rules to prevent future recurrence of global pandemic such as SARS-CoV-2

We are writing to you on behalf of India's leading Animal and Health organisations. As a collective, we want to put forward key areas of intervention to prevent future recurrence of global pandemics such as SARS-CoV-2.

At the same time, we also want to appreciate the efforts of the Indian Government in dealing with this pandemic.

Coronaviruses represent a continuous pandemic threat; humans have experienced two coronavirus-related health security crises since 2003. COVID-19 is a recent example of the complex threats of emerging infectious diseases. Emerging infections in humans and animals, along with other threats such as antimicrobial resistance, are difficult challenges to humanity, to a large extent driven by increasing demand for unsustainable animal agriculture.

The SARS-CoV-2 infection is potentially another important example of the WHO's One Health concept, after SARS-CoV, MERS-CoV, and Ebola virus, in which there is an overlapping in human, animal, and environmental health¹. SARS-CoV-2 was believed to have originated in people who came in close contact with the live wet market in Wuhan, China, late 2019. The Wuhan wet market was hosting a large number of wild animals, birds, reptiles, and amphibians which never exist in one location in nature². Simply, there is a close human-animal contact in the supply chain of these wild animal markets starting from hunting, transporting, selling, processing, including slaughtering, and cooking. This is in addition to the exposure of people to their blood, secretions, and excretions. This chain poses a great risk for the contact between humans and these wild animals, which may put the handlers at risk of infection not only for coronaviruses but also for other pathogens that these animals and birds may harbour. The live poultry markets were responsible for the transmission of many viral pathogens to humans, especially various types of avian influenza viruses^{3,4}. Several studies reported that banning the storage of live poultry in live markets at least for a short period of time for overnight drastically reduced the ability to isolate the

¹ Hemida, M.G., Middle East Respiratory Syndrome Coronavirus and the One Health concept. PeerJ, 2019. 7: p. e7556.

² Rothan, H.A. and S.N. Byrareddy, The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. J Autoimmun, 2020: p. 102433.

³ Leung, Y.H., et al., Avian influenza and ban on overnight poultry storage in live poultry markets, Hong Kong. Emerg Infect Dis, 2012. 18(8): p. 1339-41.

⁴ Gordon, C.J., et al., The antiviral compound remdesivir potently inhibits RNA-dependent RNA polymerase from Middle East respiratory syndrome coronavirus. J Biol Chem, 2020.

avian influenza viruses by 84% compared with the standard procedures⁵. **Such studies show that a permanent ban on the live markets will help in the prevention of such zoonotic diseases.**⁶

To successfully decrease the risk for a new SARS-CoV-2 outbreak or an outbreak of a similar virus, a One Health approach is crucial. The implementation of WHO's One Health measures will likely reduce the risk of emerging zoonotic viruses of pandemic potential in the future. These measures may include not only implementation of legislations but also collaborative interdisciplinary control measures between agricultural and public health sectors.

The One Health concept could be the most logical approach in case of fighting and controlling some zoonotic pathogens, especially those who do not have available medication or vaccines during an epidemic or outbreak. **Adoption of some of One Health-based control strategies was of great success in controlling MERS-CoV, contributing at least in part to the decline in the case fatality rates from 52% in 2012 to 32% in 2020 in case of MERS-CoV.**⁷ Outbreaks of diseases such as Ebola or SARS show how quickly a disease originating in animals can tip over into a threat to the human population.

'One Health' is built on a simple understanding – that animal health, human health and our shared environment are part of a deeply interconnected system. The interdisciplinary One Health approach represents an attempt to deal with such complex problems engaging professionals from many disciplines such as human, veterinary, and environmental health, as well as social sciences. The One Health approach recognizes the interrelationship between animals, humans and the environment and encourages collaborative efforts to improve the health of people and animals, including pets, livestock, and wildlife⁸. One Health team can work to identify sources of emerging pathogens and ways to reduce the threat of outbreaks. The implementation and development of One Health collaborations on a global scale are critical to reduce the threats of emerging viruses

It is equally important to recognise that different drivers play distinct roles in the emergence of different viruses, which can be the case even for viruses from the same family. One Health Approach at the human-animal–ecosystem interface is needed for effective investigation, prevention and control of any emerging zoonotic disease⁹. One Health provides a framework to develop solutions to these challenges.

⁵ Leung, Y.H., et al., Avian influenza and ban on overnight poultry storage in live poultry markets, Hong Kong. *Emerg Infect Dis*, 2012. 18(8): p. 1339-41.

⁶ Leung, Y.H., et al., Avian influenza and ban on overnight poultry storage in live poultry markets, Hong Kong. *Emerg Infect Dis*, 2012. 18(8): p. 1339-41.

⁷ Hemida, M.G., Middle East Respiratory Syndrome Coronavirus and the One Health concept. *PeerJ*, 2019. 7: p. e7556

⁸ T.R. Kelly, et al., One health proof of concept: bringing a transdisciplinary approach to surveillance for zoonotic viruses at the human-wild animal interface, *Preventive Vet. Med.* 137 (2017) 112–118.

⁹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4230840/>

With WHO's One Health approach at the forefront, we urge you to take the following steps immediately in response to the COVID crisis:

- 1. Enforcement of rules regarding wet markets and meat markets which are a hotbed of diseases**

A group of Chinese scientists investigated the epidemiological data of the first 41 2019-nCoV patients admitted to a hospital in Wuhan before 2 January 2020. Twenty-seven (66%) of the patients had a direct contact history with the local Huanan seafood market where live and slaughtered wild animals were sold for food consumption¹⁰. The Huanan market and its wild animals were suspected of being the source of human infection by 2019-nCoV.

The introduction of 2019-nCoV into livestock animals could pose a potential threat to both agriculture and public health. Emergence of COVID-19, after MERS-CoV and SARS-Cov, represents a third major emergence of a novel coronavirus. It is now time to learn from the lessons of these two previous outbreaks to prevent the spread of further disease from 2019-nCoV.

This evidence also emphasizes on the need for application of One Health Approach for control and surveillance of epidemics in our country. As recommended by WHO, there is a need for designing and implementing programmes and research in which multiple sectors communicate and work together to achieve better public health outcomes. As stated by WHO the areas of work in which One Health approach is particularly relevant to include are food safety, the control of zoonoses and combating antibiotic resistance.

We strongly recommend that the Government should make statutory laws to ban wet markets across India.

- 2. Focus on One Health and not just market forces: End unsustainable intensive farming of livestock**

Factory farming's addiction to antibiotics is fuelling the rise of resisting superbugs. By 2030, global antibiotic use in food animals is projected to rise by 67 per cent that would approximately double in Brazil, Russia, India, China, and South Africa block of the rapidly developing and highly populated countries of the world.¹¹

Food animal production presents the strongest case for One Health perspective on recognizing the commonality of disease risks shared between animals and humans. Because

¹⁰ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7111068/>

¹¹ <https://www.ncbi.nlm.nih.gov/pubmed/25792457/>

both humans and animals share the conditions of confinement, they share exposures and risks. The health hazards of dusty environments are well described for workers in animal confinement houses and these chronic exposures can affect respiratory function in animals including asthma-like syndromes, bronchitis, asthma exacerbation, and hypersensitivity pneumonitis¹². These conditions and diseases are shared by animals in confinement.

The unnatural feeds, hormones, and excessive quantities of antibiotics used on factory farms put the human population at risk for chronic disease, obesity, and drug-resistant bacteria, and pose the threat of major zoonotic disease outbreaks.

Experts believe that the outbreak of H1N1 was likely caused by the overcrowding of pigs on factory farms and the storage of their waste in giant manure lagoons.¹³

The significant cost to the environment, public health and rural communities from the inherently unsustainable, highly inefficient factory farm system demand that policymakers should prohibit unsustainable intensive farming of livestock. Government should immediately notify the following drafts submitted to the it:

1. The Law Commission of India (LCI), Report 269, dated July 2017:

Draft Prevention of Cruelty to Animals (Egg Laying Hens) Rules, 2017, Draft Prevention of Cruelty to Animals (Broiler Chickens) Rules, 2017

2. Draft Rules for the Amendment of Registration of Cattle Premises Rules, 1978- Submitted by FIAPO and under consideration of Department of Animal Husbandry and Dairying (Government of India).

3. Stronger Enforcement of Ban of Wildlife Consumption

With the emergence of a major challenge of zoonotic diseases it is now of utmost priority that steps be taken by the Indian Government to ensure that we follow the ban on wildlife consumption in its full spirit. In fact, zoonotic pathogens, such as influenza and SARS (severe acute respiratory syndrome), account for the majority of emerging infectious diseases in people, and more than three-quarters of emerging zoonoses are the result of wildlife-origin pathogens.¹⁴

Moreover, the penalty for violating behaviour should be increased, and wildlife consumption and possession offences should be strictly dealt with. **Sections 32,9 and 44 of Wildlife (Protection) Act, 1972 prohibit trading, hunting of wildlife animals.** These sections should be strictly followed.

¹² <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6188119/>

¹³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2737041/>

¹⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2784942/>

Both the supply and demand sections of the wildlife trading chain should be strictly monitored and contained. India must act to strongly enforce the ban on wildlife consumption in order to prevent future public health risks.

4. Close all slaughterhouses that do not follow FSSAI guidelines and rules under The Prevention of Cruelty to Animals (Slaughter House) Rules, 2001

Around 600 pathogens are known to originate from livestock, of which over 50% are known to be zoonotic, i.e. they can cross the species barrier to other livestock or to humans and they do so regularly. This is a crucial point here as this increases the probability of transfer of a microbe (virus or otherwise) from animals to humans, thereby increasing its pandemic potential. The increased likelihood of breach of the species barrier is facilitated by humans' close proximity to livestock and the population density of livestock which allows for a) faster transmission, b) unlimited supply of naïve host for the virus to infect. This calls for urgent changes to our practice of rearing livestock.

The government follows intensive inspection when it comes to food consumed in hotels, restaurants etc. but all these slaughterhouses that do not follow all the guidelines operate freely. The chances of infected food being supplied because of these slaughterhouses are very high. There should be strict implementation of FSSAI guidelines and The Prevention of Cruelty to Animals (Slaughter House) Rules, 2001 in all the slaughterhouses and the ones that don't follow these guidelines should be immediately closed.

One Health approach in China has recently been discussed ¹⁵¹⁶, however, the implementation of One Health policies in China is challenged by several barriers¹⁷. Should the strict implementation of One Health measures in China have been implemented, the emergence of two coronaviruses (SARS in 2002–3 and SARS-CoV-2 in 2019) may have been prevented. Alarmingly, One Health policies are not yet implemented in several parts of the world where hotspots of infectious diseases are present which may result in potential emerging infections affecting humans. Therefore, further investigations using One Health approach will help predict virus hotspots and their cross-species transmission potential and the implementation of One Health policies are critical and urgently required. It is crucial for India to take a lead and implement One Health in its entirety.

According to UN and other estimates, the COVID-19 pandemic could cost the global economy about US\$ 1- trillion and is causing a global recession, forcing states to enact

¹⁵ <https://www.tandfonline.com/doi/full/10.3402/iee.v6.33843>

¹⁶ Wu J. One health in China. *Infect. Ecol. Epidemiol.* 2016;6(1):33843

¹⁷ <https://www.tandfonline.com/doi/full/10.3402/iee.v6.33843>

expensive stimulus packages.¹⁸¹⁹The cost to the international community of fighting a global pandemic is far greater than the cost of avoiding it, including banning wet markets and removing live wildlife trade.

A pandemic such as COVID is preventable given that the Indian Government takes certain irreversible steps. Implementing the One Health concept from all aspects involving the animal, environment, and humans could contribute substantially to the control of SARS-CoV-2 in the near future.

We welcome your consideration of this important matter and stand ready to assist.

Your Sincerely,

For and behalf of the Doctors. The list of doctors is attached with the petition.

¹⁸United Nations Conference on Trade and Development. Coronavirus: Can policymakers avert a trillion-dollar crisis? 9 March 2020: <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2300>

¹⁹ Bloomberg. Coronavirus Could Cost the Global Economy \$2.7 Trillion. 6 March 2020
<https://www.bloomberg.com/graphics/2020-coronavirus-pandemic-global-economic-risk/>