



Legislation advancement of one health in China in the context of the COVID-19 pandemic: From the perspective of the wild animal conservation law

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ARTICLE INFO

Keywords:

COVID-19
One Health
Infectious disease control
The Wild Animal Conservation Law

ABSTRACT

The outbreak of COVID-19 epidemic is endangering the health of all humans and requires the urgent attention and active response of all countries and all areas of society. Existing studies have shown that wild animals are one of the sources of high-risk virus infection affecting human health, and human activities have largely shaped the routes of virus transmission. To protect wildlife is to protect human health. We should follow the concept of One Health to make corresponding legislation, so as to better coordinate the relationship among human health, animal health and environmental health. Since the outbreak of COVID-19 epidemic, China has taken many effective measures to prevent its spreading, including revision of *the Wild Animal Conservation Law*. All sectors of the Chinese society have issued a strong appeal to pursue One Health and even specific legislative proposals. Because the current *Wild Animal Conservation Law* fails to properly reflect the concept of One Health, which is the root cause of the imperfect design of the system and the key to the unsatisfactory effectiveness of the legal application. China's new *Wild Animal Conservation Law* is expected to make a large-scale and systematic revision, which should fully implement the concept of One Health.

At the end of December 2019, the COVID-19 epidemic was detected and has posed great threats to public health. It has led to large-scale social and economic disruption, tremendous strain on the medical system and a large number of infected deaths. On January 31 of the following year, WHO identified it as a Public Health Emergency of International Concern (PHEIC). Viruses know no borders, epidemics know no race. It is the common enemy faced by all of humankind and the epidemics caused by it can pose an enormous threat to mankind's life and health and bring a formidable challenge to global public health security, eventually becoming a public health emergency that is difficult to control [1]. With regards to the origin of COVID-19 pandemic, it still needs to be further studied and confirmed. Analysis of the initial cluster of infections revealed a common point of contact: the Wuhan Seafood Market in Hubei Province, which is heavily trafficked in wild animals, from this some researchers speculated that wild animals might be the cause of the outbreak [2].

Wildlife are considered to be a primary source of many major human diseases [3]. The COVID-19 pandemic outbreak shares common characteristics with major outbreaks in recent years, such as SARS-CoV, avian influenza, Middle East Respiratory Syndrome and Ebola. The

origin and spread of these viruses are often thought to be closely related to wildlife [4]. It is proposed that the proportion of human infectious disease pathogens that come from animals has risen to 75%, with more than 100 of these pathogens being extremely dangerous to humans, and new zoonosis pathogens are still emerging [5]. There is abundant evidence that the viruses are transmitted from wildlife to human beings, and trigger a large epidemic endangering human health. Human infections with SARS-CoV, HIV, Nipah virus (NiV) and H5N1 influenza originated evidently from wildlife [6].

The COVID-19 pandemic has sent a strong warning signal. That is, animal biodiversity and human health are closely linked and cannot be isolated. The biodiversity carries a twofold impact on human health. On the one hand, the positive impact of biodiversity on humankind is that it guarantees ecosystem services, including the provision of food and fuel, clean water and air, reduces the natural disasters such as floods, and improves people's mental health [7]. In addition, biodiversity gain can directly benefit health. For example, increasing plant abundance, such as through the use of green roofs, can help to mitigate air pollution and thereby reduce incidences of respiratory and cardiovascular disease [8]. On the other hand, the negative impact of biodiversity on human beings

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<https://doi.org/10.1016/j.onehlt.2020.100195>

Received 20 August 2020; Received in revised form 28 October 2020; Accepted 9 November 2020

Available online 4 December 2020

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is likely to lead to the occurrence and spread of infectious diseases [9]. Loss of biodiversity affects the abundance of host or vector, the behavior of host, vector or parasite, and the condition of host and vector, thus affecting the spread of infectious diseases [10]. Meanwhile, it can also lead to the loss of food or affect diversity which will lead to health defects due to the loss of biodiversity [11]. The outbreak of COVID-19 epidemic forces us to face up to the relationship between biodiversity and human health.

However, a series of human activities that are detrimental to biodiversity are likely to have consequences that indirectly endanger human health. The most important factor of the increase of infectious diseases caused by wildlife is land-use change. The changes of land-use affect the behavior, distribution and number of vectors, reduce the number of less susceptible species and increase the number of vector species, thus increase the possibility of disease transmission [12]. In addition, the potential for disease outbreaks also increases due to the wildlife trade [13]. With the rapid development of international trade, the legal and illegal wildlife trade has also increased [14], which makes the contact routes between humans and wildlife diversified, and is one of the important factors that trigger the spread of zoonotic infectious diseases [15]. Firstly, the environment and conditions in the wildlife markets are easy to cause virus infection. Just as some science writers said “live meat markets are perfect laboratories for creating new viruses. Stressed animals shed more viruses and are more susceptible to infections, and the cages are often stacked on top of each other, facilitating exposure” [16]. The wildlife trade takes place in a humid market environment, where fresh meat, agricultural products and animals are often stored and sold in the open-air. Wet markets facilitate and heavily contribute to the practice of wildlife trade and in turn, this practice has led to the spread of zoonotic diseases among the animals and to customers at markets [17]. Secondly, there are still a small number of people in China who still maintain a sincere love of eating wild animals [18]. According to a survey published by the Wildlife Conservation Society, 46.2% of urban residents has eaten wild animals, and 2.7% eats them regularly [19]. Some researchers believe that traditional Chinese cooking practices will lead to new coronavirus infections to some extent [20]. Even apparently healthy wild animals may contain pathogens that can not be removed by barbecuing, salting, steaming, or other processing methods [21]. There is a risk of disease when people eat such wild animals.

In the future, people must value introducing legislation to effectively control or regulate its own activities, and to protect biodiversity to ensure human health [22]. The effort in this respect was officially launched as early as 2014, with the decision on biodiversity and human health being passed at Conference of the Parties to the Convention on Biological Diversity Twelfth Meeting (XII/21). The decision had set out for the first time a comprehensive disease control concept of One Health, which associated human health with the health of other species and ecosystems, then minimizing the unnecessary human interference with natural systems as far as possible to prevent the spread of emerging viruses between humans and wildlife.

In accordance with the responsibility of member states to internalize international rules into domestic laws in a timely manner, China specifically responded to issues related to wildlife and human health in a comprehensive revision of the *Wild Animal Conservation Law* in 2015. Firstly, the revised *Wild Animal Conservation Law* added the legislative purpose of “maintaining biodiversity” to highlight its concern for the common health of wildlife and human beings. Secondly, according to the principle of prevention first, the system of monitoring, forecasting and formulating an emergency response plan scenario for wildlife by wildlife protection authorities and veterinary authorities of governments at or above the county level was formulated. Thirdly, according to the principle of comprehensive management, the system of collaborative governance and control of outbreaks of animal diseases that are potentially zoonotic by wildlife protection authorities, veterinary authorities and health authorities of governments at or above the county level was established. From then on, China had initiated legal practices to adjust

the relationship between biodiversity and human health in the field of wildlife protection.

The occurrence of the COVID-19 pandemic, however, reflects that the China’s practice of adjustment of the relationship between biodiversity and human health by law has not been successful enough. China and countries and regions in the world are taking the most comprehensive, rigorous and thorough measures to contain the COVID-19 pandemic as soon as possible and restore the health of people as expeditiously as possible. In China, for example, efforts are under several ways to prevent and treat the outbreak of COVID-19 [23]. In terms of legislation, China has initiated a revision of the *Wild Animal Conservation Law* urgently. A core goal of this revision is to better regulate the relationship of human health and biodiversity through the new law, so as to effectively realize the concept of One Health.

Based on that the COVID-19 pandemic may related to wildlife trade, on February 24, 2020, the Standing Committee of the National People’s Congress issued and implemented the Decision to Comprehensively Prohibit the Illegal Trade of Wild Animals, Break the Bad Habit of Excessive Consumption of Wild Animals, and Effectively Secure the Life and Health of the People. Subsequently, the State Forestry and Grassland Administration, the Ministry of Agriculture and Rural Affairs, the Ministry of Transport of the People’s Republic of China, the State Administration for Market Regulation, the Ministry of Public Security, the Supreme People’s Court and the Supreme People’s Procuratorate of China also launched law enforcement and judicial activities to implement the decision within their respective functions and powers. Based on practice survey, the overwhelming majorities (>90%) of the respondents in the survey support more stringent policy and legislation on wildlife consumption, trade, and commercial exhibitions. The comprehensive prohibition on illegal wildlife trade and the elimination of abusive wild animals eating habits has a wide public base [24]. This means that the existing wild animals consumption groups tend to stop consuming after the COVID-19, and the future wild animals consumption market will be greatly reduced, the wide public support determines the applicability and effectiveness of wild animal legislation.

The previous legislative work to help revise the *Wild Animal Conservation Law* has laid a good foundation. This COVID-19 pandemic has reminded us in a devastating way that everything in the world is closely interconnected. It has raised our awareness of the links between how we treat wildlife and human health [25]. In the future legislative work, our discussion should not be limited to how to regulate the use of wildlife, but should attach importance to the link between biodiversity protection and public health. That is, to protect animals is to a large extent to protect human health, and the realization of human health depends on better protection of wildlife [26]. In terms of specific systems, it is necessary to further strengthen the monitoring and precaution system for animal pathogens, adopt drastic examination and approval for the registration system of wildlife trade and enhance cross-sectoral and inter-regional cooperation mechanisms and early warning mechanisms and joint defense-linkage mechanisms [27]. In conclusion, China should strive for all-round protection of biodiversity and greatly minimize the use of wildlife resources, the destruction of habitats, and intrusion of humans into wildlife habitat in the revision of the *Wild Animal Conservation Law* [28]. Only by effectively reducing the potential human health risks can we better achieve the legislative objectives of One Health.

Funding statement

No funding was received for this work.

Author statement

I agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Declaration of Competing Interest

None of the authors have any conflict of interests.

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