Possible negative consequences of a wildlife trade ban

The COVID-19 outbreak has stimulated calls for a global wildlife trade ban. Such actions may only partially curb pandemic risk while negatively affecting people who depend on wildlife. More worryingly, they may provide cover for inaction on issues that would make a true difference in preventing future pandemics.

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Following the outbreak of COVID-19, in February 2020 the Chinese government imposed a ban on trade and consumption of wild meat. Although introduced on health grounds, the ban was welcomed by animal welfare and wildlife conservation organizations who themselves issued numerous calls for a ban. These calls ranged from a global ban on all wildlife trade for all time (https://go.nature.com/2IL1bDR) to a more nuanced ban on 'mainly consumption' of 'mainly mammals and birds' (https://endthetrade.com/). The implications of such bans extend far beyond pandemic risk, animal welfare and wildlife conservation. Also affected are those who produce and consume wild meat, for cultural, health and livelihood security reasons. We argue that calls for wildlife trade bans may thus have substantial unintended consequences, while not necessarily reducing pandemic risk.

The impact of the Chinese ban on wild-meat producers and consumers

Like many traditional communities in many countries, the Chinese populace has a long history of consuming and using wildlife for medicines, meat and skins. However, the consumption of wildlife is no longer driven by a need to meet subsistence needs[1]. Rather, it is a delicacy favoured by middle-class consumers, particularly in urban areas. Nevertheless, its production does support local livelihoods. For some rural Chinese people, wildlife farming has been a way of life for generations. More recently, however, it has been actively encouraged as part of President Xi's strategy of targeted poverty alleviation. Farming of some species such as bamboo rats have very low barriers to entry and can earn a rural farmer up to US$2,000 per year, exceeding the poverty line by some margin[2]. The most recent official estimate puts the value of wildlife farming at around US$8 billion per year[3].

The wildlife trade ban initially applied to all terrestrial wild animal species caught and/or farmed for food although 16 species were subsequently transferred back to a permissible farmed list[4]. At the same time, the Chinese government proposed to more than double the number of species included in its list of protected species. Inclusion on that list brings important conservation benefits including increased funding, improved protected areas and enhanced efforts to tackle poaching and illegal trade[5]. These conservation benefits could, however, be overshadowed by the socioeconomic impacts. The ban left rural local authorities concerned about their ability to meet pre-pandemic poverty reduction targets and rural farmers concerned about their ability to continue making a living[2]. To alleviate the negative livelihood impacts, the Chinese government developed a series of compensation packages and technical support to transition away from food-oriented wildlife farming to non-food forms (for example, medicine and pets)[6]. At this point in time it is too early to tell if the support on offer will reach those who need it and whether the scale of finance will be sufficient and sustainable. A recent report, however, has highlighted the major economic costs of the ban and its negative impact on poverty alleviation efforts[7]. It is also too soon to know how consumers will respond — whether they will change their habits and stop eating wild meat, or simply buy it on the black market, as was the case when bushmeat consumption was banned in parts of Africa following the Ebola outbreak in 2013[8]. If this is the case, the Chinese ban may have the unfortunate effect of bringing less transparency and regulation to the trade, thus increasing the health risks rather than reducing them.

Beyond China

While in China wild meat consumption may now be mainly for luxury purposes, in many countries it is critical to the food security of millions of Indigenous Peoples and local communities[9]. Some of the calls to ban wild meat acknowledge this and recognize that alternatives would need to be put in place. But there is no such thing as a straightforward alternative. The drivers of wild meat as a food choice are complex, interlinked and diverse. People don't eat it simply because there is no alternative. Multiple factors — cultural, health, economic and nutritional — mean that people make an active choice to eat wild meat or not[10].

And in terms of producers, trade in wild meat is worth millions of dollars to the informal economy of many developing countries across Africa, Asia and Latin America, and is also an important economic activity in many developed countries including in Europe, the United States, Australia, New Zealand and South Africa. Not counting the informal (and thus undocumented) sector, over 2 million tonnes of wild meat was produced in 2018[11]. Compensating producers in the way China has tried to would be an economic strain on many countries, particularly at a time when the cost of COVID-19 recovery is already high.

A worthwhile trade-off or a false solution?

If banning wild meat trade and consumption was likely to prevent future pandemics, some might argue that the potential social and economic impacts would be unfortunate but necessary collateral damage. However, we contend that it would not have this prevention effect and, more worryingly, as well as the direct social and economic impacts described above, might actually make the situation worse. If wild meat consumption is not allowed, a possible effect may be a switch to more domestic livestock consumption as a protein replacement. Given the widespread nature of wild meat consumption, this could be problematic. While often presented as a niche or even backward practice of 'other' cultures, wild meat is actually widely consumed in familiar,

developed countries. Most recent data from North America, for example, suggest that in 2016 nearly 16 million North Americans participated directly in non-commercial hunting primarily motivated by food[12]. Ironically, a switch to more livestock consumption could mean more pandemic risk. This is partly because while the emergence of COVID-19 has been linked to eating wildlife, many zoonotic diseases are associated with domestic livestock and with intensification of livestock production — one clear example being the H5N1 avian flu virus[13]. It is also because industrialized livestock production is environmentally damaging. It results in high levels of habitat destruction through land conversion to grow crops for animal feed. And habitat destruction is regarded as a key driver of the emergence of infectious diseases[13,14].

Even if a ban on wild meat consumption does not result in an increase in domestic livestock consumption, if the purpose of banning wildlife trade is to reduce pandemic risk then, since domestic livestock is also associated with pandemic-potential viruses, livestock consumption should surely also be banned. Two recently released global assessments of the state of nature point to land conversion for industrialized agriculture including livestock production being both a key driver of biodiversity loss and of the emergence of infectious diseases[15,16]. Banning, or at least reducing livestock production and meat consumption would clearly be beneficial for the planet but the current focus on wildlife trade risks distracting attention from this far more radical approach.

Moving towards treating the cause not the symptoms

If banning wildlife trade is not the solution to tackling future pandemic risk then what is? It is clear that there is a human health risk associated with producing, trading and consuming wildlife (just as there is with domestic livestock). But rather than banning one trade while ignoring the other, we suggest that a better approach — both in China and elsewhere — would be to take measures to minimize disease risk by identifying and then addressing the factors that either exacerbate or reduce its spread. For example, a recent study found that, among mammals, species in the primate and bat orders were much more likely to harbour zoonotic viruses than any other order[17] — suggesting the need for their avoidance, or at least particularly careful handling. Another factor exacerbating disease risk is the intermingling of species that would not naturally mix. Wildlife markets often involve keeping a range of species — wild and domestic — in close proximity, providing opportunities for disease to move between them. This needs to be prevented. Linked to this are the conditions under which wild species are captured, farmed, transported, sold and slaughtered. The more stressful these conditions are the more likely they are to result in disease spread[18]. Considerable efforts have been invested in the livestock industry to improve welfare standards along the production chain — similar attention is needed for wild species. A further factor is the hygiene and sanitary standards that are used (or not used) in the handling and processing of wild meat. Clear guidance is provided by the World Organisation for Animal Health and should be applied internationally. The adoption of biosecurity measures such as those outlined above would have the effect of minimizing disease risk while avoiding the social and economic fallout of a simplistic ban.

But beyond these direct risk mitigation measures, far greater attention is needed to understanding and addressing the underlying drivers of the emergence and spread of diseases like COVID-19. Key among these are deforestation, land conversion and associated habitat loss or change. Such processes massively increase interaction between humans and wildlife and facilitate transmission of disease. But addressing these threats means far-reaching reforms both by governments and by individual citizens. It means a shift away from a global food system of industrialized agriculture that is characterized by intensive livestock units and large areas of land producing animal feed. It means a shift away from commodity supply chains that encourage deforestation. It means dietary shifts away from meat. Such shifts have already been recommended by global reports on biodiversity[16], climate change[19] and planetary health[20] and the current pandemic emphasizes the need to take these recommendations seriously. But these reforms are far more challenging issues to address than a simple wildlife trade ban. Perhaps what's most worrying about the calls to ban wildlife trade is that they provide a cover for governments — and wider society — to say action has been taken, without taking the action that is really needed. ❐

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Competing interests

The authors declare no competing interests.

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