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VIEWPOINT

Urgent actions needed by digital services platforms to help achieve conservation and public health goals

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Wildlife use is widespread across the world where animals and their derivates are consumed and/or traded (Ingram et al., 2021). When the use is unsustainable, it is a leading cause of biodiversity loss worldwide, with profound consequences for ecosystem services and functions (IPBES, 2022). In December 2022, Parties to the Convention on Biological Diversity adopted the Kunming–Montreal Global Biodiversity Framework, agreeing to achieve the sustainable use and management of biodiversity as one of four central goals by 2050. Furthermore, the COVID-19 pandemic has focussed global attention on the wildlife trade and potential risk of zoonotic emerging infectious disease spread. From February 2023, the World Health Organization (WHO) has been negotiating drafts of a global Pandemic Agreement, calling for collective action on pandemic prevention, preparedness, and response, including the need to "take measures to reduce risks of zoonotic spill-over" (Article 4; World Health Organisation, 2024). Given how wholly interconnected these issues are, leveraging approaches that tackle integrated issues around the health of people, animals, and ecosystems, such as One Health and Planetary Health approaches (de Castañeda et al., 2023), will be paramount to addressing the global challenges of biodiversity loss and zoonotic disease emergence.

Managing the use of wildlife can be challenging for many reasons, including the number of actors involved along varied supply chains across rural and urban areas, the complexities around the legality of trade in different circumstances, and the capacities of governments to act (Ingram et al., 2021). The COVID-19 pandemic prompted a worldwide initiative to end the wildlife trade (Coalition to End the Trade, 2020), resulting in certain countries banning physical wildlife markets. Yet, it is becoming increasingly evident that digital services platforms, particularly social media platforms, are playing a pivotal role in the legal and illegal trade of wildlife (Morcatty et al., 2021). Yet, little has been done to stem the illegal online trade of wildlife, which undermines efforts to manage the trade effectively, sustainably, and safely (Morcatty et al., 2021). Here, we highlight two major ways in which technology companies running global social media, e-commerce (marketplaces), and content-sharing platforms (hereafter just "tech companies") can assist in achieving the goals of the

Kunming–Montreal Global Biodiversity Framework and the WHO Pandemic Agreement.

First, tech companies must take accountability for illegal wildlife trade occurring on their platforms and enforce their terms of service and community guidelines on the sale of illegal wildlife products (Morcatty et al., 2022). While there have been successes from programs such as the citizen science–based Cyber Spotter programme (Coalition to End Wildlife Trafficking Online, 2020), relying on the public to report all instances of trade is not feasible in the long term. Detections and subsequent removals of illegal products by tech companies can be low, for example, a study on elephant ivory identified on one e-commerce platform revealed that only 1.3%–6.9% was removed by the platform (Venturini & Roberts, 2020). Where tools have been developed that automatically detect wildlife products illegally offered for sale, there has been limited uptake by tech companies (e.g., ivory; Hernandez-Castro & Roberts, [2015]). Positive engagement between scientists, tech companies, and law enforcement officials is needed to support investigations and establish monitoring systems to prevent illegal wildlife trade. Particularly, a multipronged approach is needed to engage/incentivize tech companies, including:

- regulation, for example, the creation of an international regulatory body to fine social media companies that are not enforcing their terms of service and community guidelines (Morcatty et al., 2022);
- development of tools to identify and remove wildlife trade content (Di Minin et al., 2019);
- societal pressure to demand ethical platforms.

For the latter, examples could include public lists of tech companies, which are not part of groups working to reduce online illegal wildlife trade (Sebagh, 2021), and transparent monitoring of such groups to ensure that activities are taking place and reporting tools are effective. Furthermore, monitored trade should not only include high-value wildlife products such as ivory, or live animals in the trade, but should also include advertisements for traders and establishments that sell the meat of wild animals (i.e., wild meat), where illegal. This has received substantially less attention than the trade in high-value wildlife products. Crucially, member states differ in their resources and capabilities to tackle illegal wildlife trade online and deliver effective pandemic prevention, preparedness, and response. The latter is acknowledged in the most recent WHO Pandemic Agreement draft (World Health Organisation, 2024). Although the use of certain platforms differs by country (Ghermandi et al., 2023), global tech companies must play a role in addressing some of these inequities by targeting online interventions to countries with high illegal wildlife trade prevalence.

Second, online social media and video sharing platforms have been vehicles for (mis)information dissemination across the world, with social media being described as creating the "climate change of culture" (Harris, 2019). The spread of misinformation regarding emerging infectious disease spread and effective treatment, as was evident during the COVID-19 pandemic (Cinelli et al., 2020), is a significant threat to global public health because it can hinder evidence-based actions designed to prevent or respond to outbreaks. Additionally, on some social media and video sharing platforms, the content recommender algorithms amplify minority extreme content (Whittaker et al., 2021), thus contributing to the polarization of views (Van Bavel et al., 2021), which can drive viewing figures on platforms. This could include extreme views about wildlife and wildlife uses, disease origin, risk, prevention, and treatment that have no evidence base. For example, misinformation about species purported to transmit zoonotic diseases may lead to intentional killing of those species. As already highlighted in Article 18 of the WHO Pandemic Agreement, the Parties will commit to "countering and addressing misinformation or disinformation" (World Health Organisation, 2024), which could be more easily achieved through action and cooperation from social media and content-sharing tech companies, such as through minor changes in algorithms to nudge users to consider the accuracy of the information before sharing (Pennycook et al., 2020). Some platforms, for example, use link recommendation algorithms to recommend new connections to users. These algorithms may increase the likelihood of polarization when users preferentially make connections in groups where they share mutual connections; however, evidence suggests this could be curbed by platforms if they adapt link recommendation algorithms to sporadically recommend dissimilar individuals with few common connections (Santos et al., 2021). Similarly, users may engage in *opinion amplification*, which refers to "the range of behaviours by users that may distort the original opinion with a more positive or negative sentiment", which can proliferate through networks when the topic is trending (Lim & Bentley, 2022). Platforms could employ two methods which have shown promise in curbing extreme polarization: consistent communication of opinions with "normal range" sentiments and limiting the number of amplifications for users that disobey platform policies (Lim & Bentley, 2022). However, it is likely that content moderation and fact-checking alone will not be enough to address these issues. To be successful, regulation needs to match the complexity of the problem (Harris, 2019), governed by a suitable international regulatory body.

In tropical countries, the situation is likely a perfect storm of high prevalence of wildlife trade and emerging infectious disease risk (Allen et al., 2017), and sometimes lower financial and technical capacities in tackling the online trade in wildlife and managing the spread of disinformation. Recent progress has been made through the EU's new Digital Services Act, which aims to "prevent illegal and harmful activities online and the spread of disinformation" through regulating online platforms, thus providing an example for regulation that could be developed in the rest of the world. If tropical member states are to be able to adequately achieve the goals outlined in the Kunming—Montreal Global Biodiversity Framework and the WHO Pandemic Agreement, the technology companies running social media, e-commerce, and content-sharing platforms will need to step-up their role in assisting countries to tackle the illegal trade in wildlife and spread of misinformation on their platforms. Tech companies, therefore, have a significant role to play in creating technology that is humane for people and wildlife.

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Daniel J. Ingram: Writing—original draft; writing—review and editing. **Thais Q. Morcatty**: Writing—review and editing. **Hani R. El Bizri**: Writing—review and editing. **Mahesh Poudyal**: Writing—review and editing. **Edward Mundy**: Writing—review and editing.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interests.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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REFERENCES

Allen, T., Murray, K. A., Zambrana-Torrelio, C., Morse, S. S., Rondinini, C., Di Marco, M., Breit, N., Olival, K. J., & Daszak, P. (2017). Global hotspots and correlates of emerging zoonotic diseases. *Nature Communications*, *8*, Article 1124.

Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C. M., Brugnoli, E., Schmidt, A. L., Zola, P., Zollo, F., & Scala, A. (2020). The COVID-19 social media infodemic. *Scientific Reports*, *10*, Article 16598.

Coalition to End the Trade. (2020). *#ENDTHETRADE*. https://endthetrade.com/

Coalition to End Wildlife Trafficking Online. (2020). *Offline and in the wild: A progress report of the coalition to end wildlife trafficking online*. TRAFFIC, World Wide Fund for Nature (WWF), International Fund for Animal Welfare (ifaw). https://www.worldwildlife.org/publications/offline-and-in-the-wild-a-progress-report-of-the-coalition-to-end-wildlife-trafficking-online

de Castañeda, R. R., Villers, J., Guzmán, C. A. F., Eslanloo, T., de Paula, N., Machalaba, C., Zinsstag, J., Utzinger, J., Flahault, A., & Bolon, I. (2023). One health and planetary health research: Leveraging differences to grow together. *The Lancet. Planetary Health*, *7*, e109–e111.

Di Minin, E., Fink, C., Hiippala, T., & Tenkanen, H. (2019). A framework for investigating illegal wildlife trade on social media with machine learning. *Conservation Biology*, *33*, 210–213.

Ghermandi, A., Langemeyer, J., Van Berkel, D., Calcagni, F., Depietri, Y., Egarter Vigl, L., Fox, N., Havinga, I., Jäger, H., Kaiser, N., Karasov, O., McPhearson, T., Podschun, S., Ruiz-Frau, A., Sinclair, M., Venohr, M., & Wood, S. A. (2023). Social media data for environmental sustainability: A critical review of opportunities, threats, and ethical use. *One Earth*, *6*, 236–250.

Harris, T. (2019). *Optimizing for engagement: Understanding the use of persuasive technology on internet platforms*. U.S. Senate. Committee on Commerce, Science & Transportation. https://commerce.senate.gov/2019/6/optimizing-for-engagement-understanding-the-use-of-persuasive-technology-on-internet-platforms

Hernandez-Castro, J., & Roberts, D. L. (2015). Automatic detection of potentially illegal online sales of elephant ivory via data mining. *PeerJ Computer Science*, *2015*, 1–11.

Ingram, D. J., Coad, L., Milner-Gulland, E. J., Parry, L., Wilkie, D., Bakarr, M. I., Benítez-López, A., Bennett, E. L., Bodmer, R., Cowlishaw, G., El Bizri, H. R., Eves, H. E., Fa, J. E., Golden, C. D., Midoko Iponga, D., Minh, N. V., Morcatty, T. Q., Mwinyihali, R., Nasi, R., … Abernethy, K. (2021). Wild meat is still on the menu: Progress in wild meat research, policy, and practice from 2002 to 2020. *Annual Review of Environment and Resources*, *46*, 221–254.

IPBES. (2022). *The thematic assessment report on the sustainable use of wild species of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. IPBES Secretariat.

Lim, S. L., & Bentley, P. J. (2022). Opinion amplification causes extreme polarization in social networks. *Scientific Reports*, *12*, Article 18131.

Morcatty, T. Q., Feddema, K., Nekaris, K. A. I., & Nijman, V. (2021). Online trade in wildlife and the lack of response to COVID-19. *Environmental Research*, *193*, Article 110439.

Morcatty, T. Q., Peters, G., Nekaris, K. A. I., Cardoso, P., Fukushima, C. S., El Bizri, H. R., & Nijman, V. (2022). Tech companies liable for illegal wildlife trade. *Science*, *377*, 721.

Pennycook, G., McPhetres, J., Zhang, Y., Lu, J. G., & Rand, D. G. (2020). Fighting COVID-19 misinformation on social media: Experimental evidence for a scalable accuracy-nudge intervention. *Psychological Science*, *31*, 770–780.

Santos, F. P., Lelkes, Y., & Levin, S. A. (2021). Link recommendation algorithms and dynamics of polarization in online social networks. *PNAS*, *118*, e2102141118.

Sebagh, L. (2021). *Policing illegal drug and wildlife trades—The role of the police, legal online platforms, private organisations and individuals, and cybercriminal traders*. University of Oxford.

Van Bavel, J. J., Rathje, S., Harris, E., Robertson, C., & Sternisko, A. (2021). How social media shapes polarization. *Trends in Cognitive Sciences*, *25*, 913–916.

Venturini, S., & Roberts, D. L. (2020). Disguising elephant ivory as other materials in the online trade. *Tropical Conservation Science*, *13*, 1–8.

Whittaker, J., Looney, S., Reed, A., & Votta, F. (2021). Recommender systems and the amplification of extremist content. *Internet Policy Review*, *10*, 1–29.

World Health Organisation. (2024). *Revised draft of the negotiating text of the WHO Pandemic Agreement* (A/INB/9/3). WHO.

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