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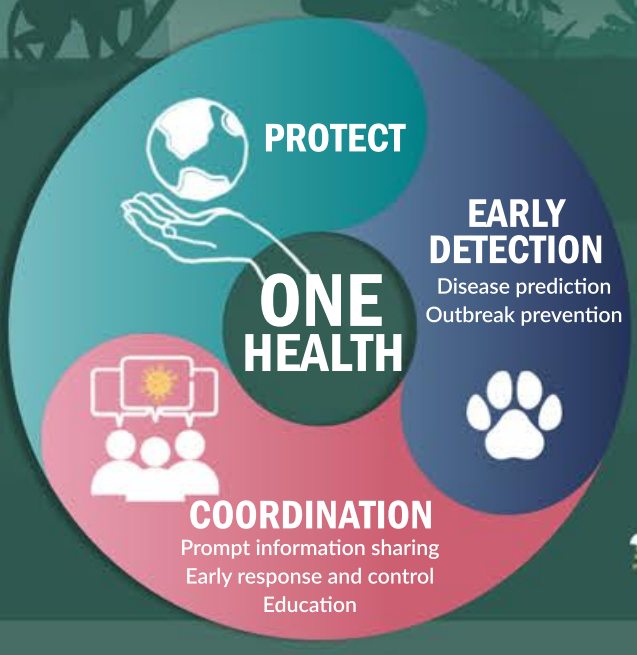
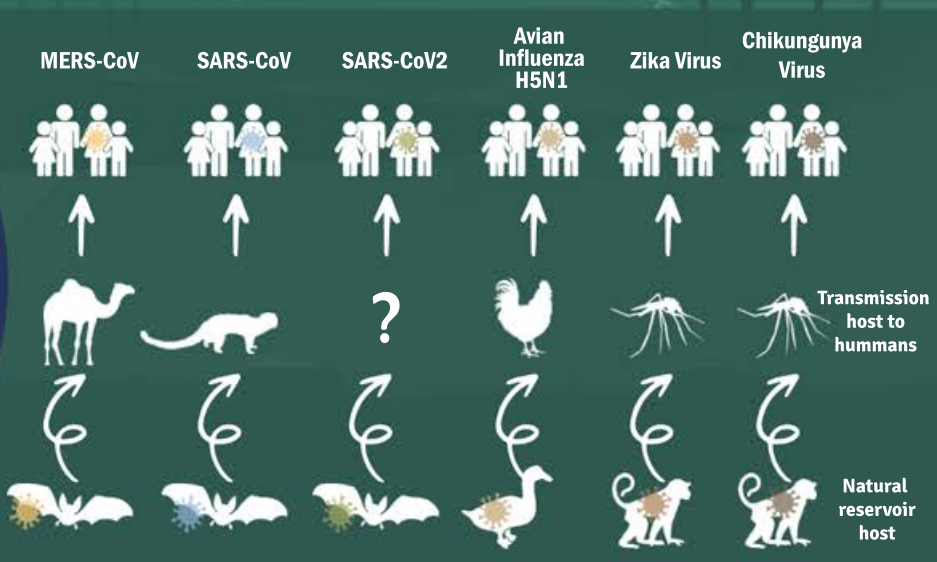
ONE HEALTH AND ZOONOTIC DISEASES

Compiled by Danielle Lynn Goh

Zoonotic diseases are infections that are transmitted between people and vertebrate animals. Examples include SARS, COVID-19, Yellow fever, Avian influenza (H5N1) and (H7N9) and the Middle East respiratory syndrome coronavirus (MERS-CoV). **The ASEAN One Health Declaration** has acknowledged the far-reaching impacts of the COVID-19 pandemic and other emerging infectious diseases and zoonoses, antimicrobial resistance (AMR) and climate change on animals, plants, the environment, and human health. As part of its response, ASEAN has committed to establish the ASEAN One Health network that will strengthen the coordination of One Health initiatives among its member states.



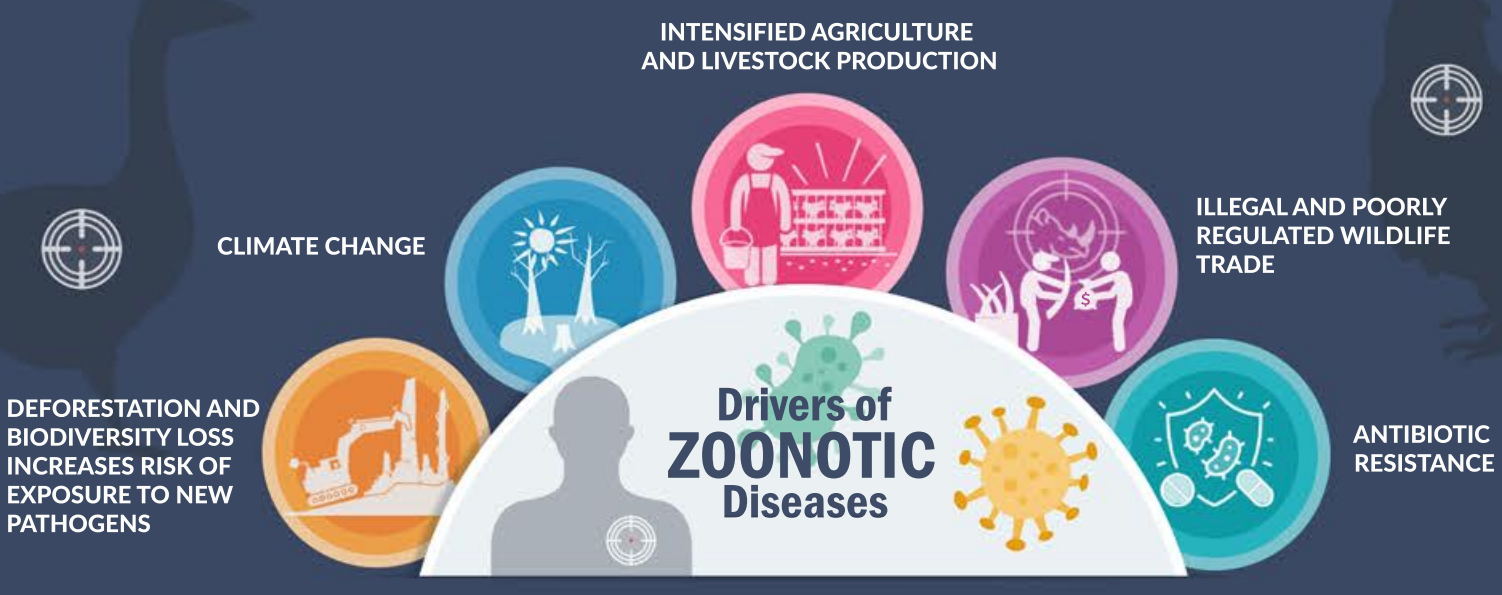


More than **60%** of emerging infectious diseases are zoonoses originating from domestic animals, poultry, livestock and increasingly from wildlife species.

Source: Compiled from Saba Villarroel, Paola Mariela, Nuttamonpat Gumpangseth, Thanaphon Songhong, Sakda Yainoy, Arnaud Monteil, Pornsawan Leaungwutiwong, Dorothée Missé, and Sineewanlaya Wichit. "Emerging and re-emerging zoonotic viral diseases in Southeast Asia: One Health challenge." *Frontiers in Public Health* 11 (2023): 1141483. URL: Emerging and re-emerging zoonotic viral diseases in Southeast Asia: One Health challenge - PMC (nih.gov)

What are the Drivers of Zoonotic Diseases?

Zoonotic diseases can occur when there are changes in patterns of contact between wild and domestic animals, direct human and wild animal contact and high rates of ecosystem disruption and biodiversity loss. Deforestation as a result of the increased demand for natural resources for human development and agriculture, has also led to a rise in infectious diseases. Additionally, both legal and illegal wildlife trade increases the risk of transmission. More demand for lifestock products has resulted in high-density domesticated animals within large commercial farms that further poses a risk of zoonotic disease outbreaks.

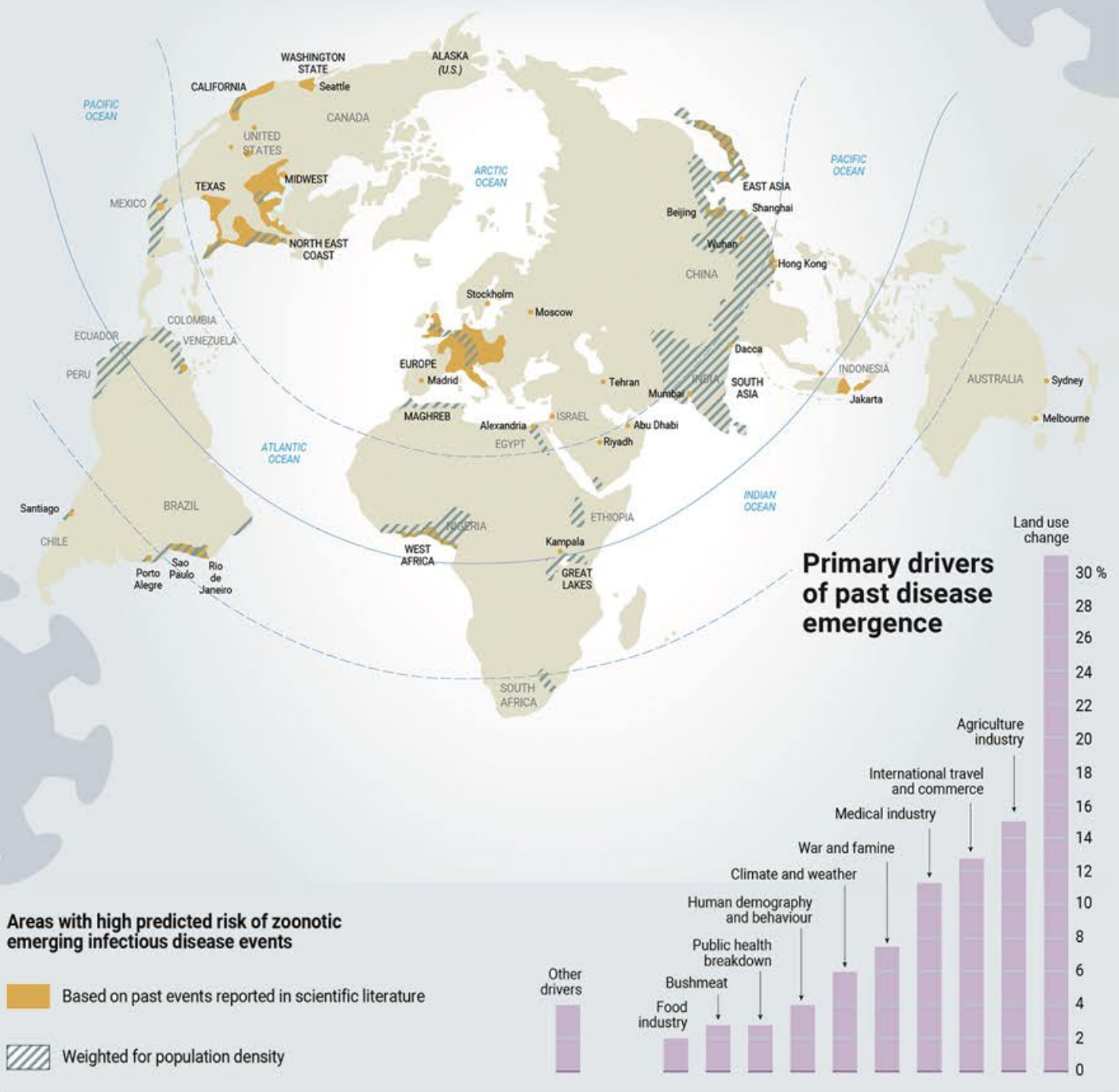


Source: Compiled from UNEP. Six nature facts related to coronaviruses. 8 April 2020. https://www.unep.org/news-and-stories/story/six-nature-facts-related-coronaviruses.

Predicted Global Hotspots of Emerging Zoonotic Diseases

A 2017 study projected that the risk of emerging infectious diseases would be more concentrated in tropical regions in North America, Asia, Central Africa and South America. However, certain urban areas with high population outside of the tropics in Europe, the United States, Asia and Latin America are also at high risk. The UNEP 2016 report highlighted that zoonotic disease events from 1940 to 2004 demonstrated an increase in the rate of emerging infectious diseases.

Predicted hotspots for zoonotic infectious diseases



Source: Compiled from Flickr Account of GRID-Arendal, via Creative Commons License CC BY-NC-SA 2.0 DEED.
Note: The image was developed by Philippe Rekacewicz and Georgios Fylakis. 2020. "Predictive hotspots for zoonotic infectious diseases (2020 update)." GRID-Arendal. https://www.grida.no/resources/13594, accessed 13 March 2024.