Summary:

Zoonotic diseases present deep and dynamic threats to global health and risks of future pandemics. Animal industries are a dominant driver of spillover risk, linked to the emergence of SARS, MERS, H5N1 avian flu, Nipah virus infection, H1N1 "swine flu," COVID-19, and others. Human use of animals and animal parts occurs on an enormous scale, and supply chains that move animals allow for the aggregation, spread, and distribution of the pathogens that they carry. Along these supply chains are opportunities for pathogens to move between animals and human hosts. Animal markets, which sell live animals, parts, or products, are one high-risk site of particular concern for zoonotic spillover, but risk is present throughout supply chains and within the source industries that feed these markets—including the wildlife trade, livestock production, and wildlife farming industries.

Animal Markets and Zoonotic Disease Risk: A Global Synthesis of a 15 Country Study from the Brooks McCormick Jr. Animal Law & Policy Program at Harvard Law School and the Center for Environmental and Animal Protection at New York University analyzes these industries and the risks they carry across a diverse range of cultural contexts from civet farming in Vietnam to captive hunting operations in South Africa and industrial livestock facilities in the United States.

The report finds that both the general public and policymakers lack knowledge and data about a wide range of animal industries, as well as the risks they carry, and yet this information is essential to informing policy responses that aim to mitigate zoonotic risk. From remote roadside vendors selling the meat of wild animals to industrial animal production facilities that hold millions of animals together in vast indoor warehouses, many forms of animal industry are poorly regulated, while others remain unregulated altogether. This is true even as animal use and consumption continue to increase globally, and as zoonotic outbreaks are becoming increasingly common, with diseases emerging faster than ever before. Better regulation of the risks posed by animal markets and other forms of animal industries is urgently needed in order to safeguard public health and prevent future disease outbreaks.

The report states that globally, animal production and human–animal interactions are growing in magnitude and diversifying in form and structure, outpacing current regulation. And, at present, regulation is not proportional to risk. The problem is not only that the ways humans use animals drive zoonotic risk, but that often, policymakers act indifferently or recklessly with respect to these risks, casually writing off serious threats without consideration or without even recognizing them as threats. However, many zoonotic outbreaks are preventable and driven by non-subsistence animal uses.

The report urges policymakers to decide which zoonotic risks they are willing to accept and which practices are not worth the risks they carry, as well as how to make such determinations. It concludes that policymakers must act more deliberately with respect to the risks they take and to analyze and appreciate the dangers posed by different forms of animal industry in order to make informed decisions about when such risk is justified and when it is not. This report lays the groundwork for such decisions and for the kind of efforts required to reduce and mitigate global health risks posed by animal industries.

While the risk of zoonotic disease can never be totally eliminated, the global landscape of risk is continuing to evolve in ways that are both increasingly and unnecessarily dangerous. Patterns of disease emergence can be disrupted through more effective regulation, and the high-risk human activities that generate risk can be reduced, reformed, and better monitored.

High-Level Takeaways and Important Findings:

- **Animal industries drive zoonotic risk and present serious threats to global health security.**
    - Human-animal interactions in every country across the globe contribute to zoonotic risk.
        - Demand from wealthy consumer nations such as the US, also drives high-risk practices in much of the developing world.
    - In this globalized economy, risk itself is also globalized.
        - A threat anywhere is a threat everywhere, but too often nations respond to zoonotic outbreaks by sealing off borders and scapegoating other countries.
            - Rarely do they recognize the root cause of spillover risk and seek to address their own contributions to global risk.

- **Animal production and human–animal interactions are growing in magnitude and diversifying in form and structure, outpacing regulation.**
    - For example, wildlife farming poses serious, under-examined zoonotic risks, and carries possible connections to two of the most significant disease events of the 21st Century—SARS and COVID-19.
        - Relatively little is known about the nature and degree of zoonotic risks posed by wildlife farming or about the industry itself.
        - Data in this area is extremely scarce, and often wildlife farms operate with little to no oversight, falling in a regulatory gray area between wildlife and traditional livestock.
            - Still, this industry presents substantial risk combining high-risk species with the intensive high-risk production practices.
    - For example, online and digitally-enabled wildlife transactions are growing, offering an enormous range of species and anonymity for sellers, who are drawn to online retailers and social media platforms that allow them to operate largely outside the law.
        - These online forums have radically expanded the ability of sellers to market animals to new global audiences, connect with other sellers and traders, and collect payment for their transactions—all with little to no local, national or international regulation and enforcement.

- **At present, across much of the world, regulators lack even basic information about many forms of animal industries or the risks they pose.**
    - There is an urgent need for more data and better monitoring across many forms of animal industry and supply chains.
        - For example, although fur farms pose high risks of spreading influenza viruses and coronaviruses, many states in the U.S. do not know if, where, or how many fur farms exist within their borders, and there is no system to map or monitor these operations internationally.
    - Many forms of animal industry are underregulated or in some cases unregulated altogether, though they pose serious threats to public health.

        - Siloing between agencies and other regulatory problems can amplify these risks.

- **Current regulation is not proportional to risk, nor is the funding allocated to addressing zoonotic disease risk sufficient to protect public health.**
    - In many countries, there is a reluctance among policymakers to regulate animal industries even where practices jeopardize public health.
        - For example, no international law governs the disease risks posed by the wildlife trade, a multi-billion dollar industry that transports wild animals and their pathogens across the globe.
            - Many countries have few, if any, regulations to prevent the import of high-risk species through the wildlife trade.

- **Zoonotic risks are not random but occur in predictable patterns.**
    - Across diverse countries and cultural contexts, the patterns of human behavior that give rise to zoonotic spillover remain surprisingly similar from one country to the next, though the details and conditions of each vary.
        - However, there is currently no agreed-upon template or framework for zoonotic risk analysis.

- **Many zoonotic outbreaks are preventable and risk could be radically reduced through better regulation.**

- **Too often policymakers are acting indifferently or recklessly with respect to zoonotic risks.**
    - Many serious risks come from non-essential industries. For example:
        - Palm civets, the suspected animal source of the SARS epidemic, are farmed to produce expensive perfume or specialty coffee made from their droppings.
        - Raccoon dogs, who may have first spread COVID-19 to humans, are kept and killed in large numbers to make fur coats from their pelts.
    - Policymakers must work to right these scales and act more deliberately with respect to the risks they take and to decide when these risks are justified and when they are not .

- **Risk cannot be eliminated, but it can be reduced**— often in ways that would scarcely be felt by the public at large.
    - Law and policy are important tools for reducing risk.
        - The first step is to document and better understand the problem, but this should be followed by clear-eyed, candid conversations about whether each practice is worth the public health risk it poses, in an effort to reduce risk wherever possible.