

Tradition in Transition: Rethinking the Role of Wet Markets in Modern African Societies

The phrase “wet market” has been synonymous with the COVID-19 pandemic ever since the spillover of the respective virus in Huanan Seafood Market in Wuhan, China. However, against common knowledge, some of the biggest wet markets are not located in China or even Asia, but notably in Africa. However, due to COVID-19, the world has been on edge with the increased possibility of the spread of new Emerging Infectious Diseases (EIDs) as the result of greater interaction between animals and humans, which may lead to zoonotic viruses jumping from the former to the latter. In response, western societies have called into question the practice of wet markets, through shaming and calling it barbaric, although wet markets currently play a crucial role in the economies of developing countries.¹ While the wet market controversy has been focused on places like Wuhan, China, there are wet markets in every major continent, excluding Antarctica.² Despite this, a worldwide wet market ban has gained serious traction, which threatens the ability of millions of civilians worldwide to find fresh produce. With evidence of inhumane practices, the potential of cross-contamination, and violations of basic food safety are key issues to solve, and policymakers must coordinate with wet markets to establish better health standards and maintain access to food sources for the most vulnerable in society. Instead of shaming a population, the international community should look to modernize the idea of wet markets, which not only fit current Western food safety standards, but also provide for vulnerable individuals who depend on fresh produce to survive.

¹ “Live Animal ‘Wet Markets’ in New York City Face Protests amid Coronavirus Pandemic.” 2020. Cbsnews.com. CBS News. May 9, 2020.

<https://www.cbsnews.com/news/coronavirus-pandemic-animal-wet-market-new-york-city-protests/>.

² “Wet Markets - American Humane.” 2021. American Humane. February 25, 2021.

<https://www.americanhumane.org/position-statement/wet-markets/>.

The broad definition of a wet market usually refers to a place that sells perishable items such as fresh meat, produce, and sometimes live animals.³ To fully understand the concern with wet markets, we must understand terms like wildlife markets and live-animal markets. While these terms are basically interchangeable in comparison to wet markets, the major difference is the presence or absence of live animals and/or “wild” animals, depending on the individual market. Wildlife markets often refer to the selling or killing of live wild animals that are not normally eaten, such as bamboo rats or wolf cubs.⁴ Live animal markets often refer to selling more or killing of more traditional domesticated animals.⁵ When comparing the three markets, wildlife markets have the highest risk of EIDs.⁶ The combination of the proximity of animals to each other and humans and unsanitary practices present creates the perfect recipe for the increased likelihood of EID.⁷

Wet markets hold a crucial position in African agricultural systems. In Kenya, Uganda, and Mali, small-scale farmers account for 80 percent, 90 percent, and 98 percent of each country's raw milk production, respectively.⁸ Wet markets allow for small-scale farmers to distribute their produce in large and highly populated areas with little to no restrictions. The competitive nature of wet markets, also known as informal markets, in which products tend to have a limited timeframe for storefront usage, drives down prices, allowing consumers to have affordable fresh produce. Another advantage of informal markets is the access they provide to

³ “Merriam-Webster Dictionary.” 2024. Merriam-Webster.com. 2024.
<https://www.merriam-webster.com/dictionary/wet%20market>.

⁴ Bing, Lin, Madeleine L. Dietrich, Rebecca A. Senior, and David S. Wilcove. 2021. “A Better Classification of Wet Markets Is Key to Safeguarding Human Health and Biodiversity,” *The Lancet Planetary Health* 5, 5 (6). Elsevier: e386–94. doi:10.1016/S2542-5196(21)00112-1.

⁵ Ibid

⁶ Ibid

⁷ Mahmoud, Naguib M., Ruiyun Li, Jiaxin Ling, Delia Grace, Hung Nguyen-Viet, and Johanna F. Lindahl. 2021. “Live and Wet Markets: Food Access versus the Risk of Disease Emergence,” *Trends in microbiology* 29, 29 (7): 573–81. doi:10.1016/j.tim.2021.02.007.

⁸ Roesel, K., & Grace, D. (Eds.). (2014). *Food Safety and Informal Markets: Animal Products in Sub-Saharan Africa* (1st ed.). Routledge. <https://doi.org/10.4324/9781315745046>

the poorest. In contrast to the norm of bulk buying in Western societies, informal markets allow for the purchase of large quantities of food in small installations, a concept called *kadogo economy*,⁹ enabling consumers to buy products like sugar or milk in amounts ranging from spoonfuls to milliliters of milk. In a region where food insecurity is rampant, and many people have inconsistent finances, informal markets provide some stability.

Nevertheless, there are significant health concerns found with wet markets, particularly in regards to their potential to generate new EIDs. The most recent example, COVID-19, held damaging and diverging impacts for African states. Although the continent's economic progress regressed by 2.1 percent in 2020, in specific regions like Southern Africa, progress regressed by 7.0 percent compared to 1.1 percent in Northern Africa, due to COVID-19.¹⁰ EIDs disproportionately affect and occur in underdeveloped countries, due to close contact with wild animals being more commonplace, but they can still easily spread and create a global pandemic. Because of this, developed countries are supporting policies and initiatives to leapfrog poorer nations, assisting in accelerating modernization through bypassing multiple traditional stages of development.¹¹ While viable on paper, there are numerous pitfalls to such measures. Many pitfalls include the lack of rural infrastructure, which often impedes economic and agricultural development. For example, the development of all-weather roads overall reduced infrastructure by 6.9%.¹² It is these basic infrastructure projects that Africa is missing that, while directly does

⁹ Ibid

¹⁰ John C, Anyanwu, and Adeleke O Salami. 2021. "The Impact of COVID-19 on African Economies: An Introduction," African development review = Revue africaine de developpement 33, 33 (Suppl 1). Côte d'Ivoire: S1–16. doi:10.1111/1467-8268.12531.

¹¹ Yayboke Erol, William Crumpler, and William A Carter. 2020. "The Need for a Leapfrog Strategy." Csis.org. 2020. <https://www.csis.org/analysis/need-leapfrog-strategy>.

¹² Moussa, Blimpo, Pouguinimpo, Mingos, Michael, Kouame, Wilfried Anicet Kouakou, Azomahou, Theophile Thomas, Lartey, Emmanuel Kwasi Koranteng, Meniago, Christelle, Buitano, Mapi M., Zeufack, Albert G. 2019. "Leapfrogging : The Key to Africa's Development - from Constraints to Investment Opportunities." World Bank. 2019.

<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/121581505973379739/leapfrogging-the-key-to-africas-development-from-constraints-to-investment-opportunities>.

not affect wet markets, indirectly lead to a higher quality of life in terms leads to a higher quality of protection against food-borne illnesses.

The dressed-up presentation of food in formal markets can hide its poor qualities; people can still be susceptible to foodborne illnesses in formal markets, while informal markets have been shown to be safer than initially presumed.¹³ Some parts of Africa have already started to modernize the wildlife and game meat market. In South Africa, where the wildlife and game meat market is a multimillion-dollar market, a wide range of professional hunters, veterinarians, and informal traders are brought together to decrease the amount of hazards present.¹⁴ From “dirty teams” that take care of products that might be contaminated or dirty, like feet or organs, to health inspectors who monitor and tag each carcass, the whole process is to ensure that only the safest meat reaches the market.¹⁵ Additionally, informal markets provide a communal safeguard system against infectious diseases, as consumers who likely have good knowledge about food quality can inspect the products being sold, calling out vendors who are trading less than suitable goods. This asserts market pressure on producers to maintain buyers’ expectations of quality.

Furthermore, while hazards can exist in informal markets, according to the International Livestock Research Institute, “the presence of hazards does not necessarily mean these food products are harmful to human health.”¹⁶ For example, studies in Kenya found that milk was often contaminated with bacteria, but if it was boiled, the risk of contamination was low.¹⁷ The proper analysis to separate hazards that exist in informal markets and the actual risk that will

¹³ Mahmoud, Naguib M., Ruiyun Li, Jiaxin Ling, Delia Grace, Hung Nguyen-Viet, and Johanna F. Lindahl. 2021. “Live and Wet Markets: Food Access versus the Risk of Disease Emergence,” *Trends in microbiology* 29, 29 (7): 573–81. doi:10.1016/j.tim.2021.02.007.

¹⁴ Roesel, K., & Grace, D. (Eds.). (2014). *Food Safety and Informal Markets: Animal Products in Sub-Saharan Africa* (1st ed.). Routledge. <https://doi.org/10.4324/9781315745046>

¹⁵ Ibid

¹⁶ Ibid

¹⁷ Ibid

harm human health has not yet been developed. What then happens is policymakers, who do not fully understand the idea that hazard and risk are different concepts, make wild sweeping policy changes against wet markets that are often anti-poor and ineffective.¹⁸ When determining if a risk is significant enough to effectively act upon, multiple questions need to be asked: Is this food safe? Is the risk big and important? What efforts are appropriate to reduce said risk?¹⁹ These questions are critical in determining the effectiveness of real policy changes that could improve wet market conditions. It is crucial that any major changes consider things like community engagement and social effects. Mistrust in science has reached an all-time high worldwide in recent years. The African continent especially has shown scientific mistrust through vaccine hesitancy during the COVID-19 Pandemic, and even uncertainty with the scientific community after the response to the Ebola Outbreaks in West Africa. For any progressive changes to combat and prevent foodborne diseases, the community and community leaders need to be closely involved.

The advent of social media and phones has created a society of interconnectedness that has increased awareness of things that typically would not be taught in school, such as food safety and illness prevention. It is essential to recognize that as technology in Africa steadily increases, average education will also continue to increase. In this systematic review of the continued use of digital health technologies, or DHT, in Ethiopia, further elaboration of this concept emphasizes this phenomenon. The systematic review says, “DHTs hold much promise tackling major clinical and public health backlogs and strengthening health systems in Ethiopia. Although they are a relatively recent phenomenon in Ethiopia, their potential harnessing clinical

¹⁸ Ibid

¹⁹ Ibid

and public health practices are highly visible.”²⁰ With strengthened and increased knowledge of clinical and public health problems, solutions will slowly become more popular and widely used. Simple solutions involving rudimentary training and technology could be employed effectively. In Kenya, this exact point is proven; “Economic assignment of the Smallholder Dairy Project in Kenya showed that recognizing the informal sector and training and certification of informal milk traders led to benefits worth US\$28 million per annum,”²¹ Juxtaposed from informal markets, formal markets are highly liable for any damages caused by improper preparation of food due to governmental restrictions and inspections that often keep them in check.

While informal markets have flaws, the alternative could be worse. ‘Bushmeat’ is the collective term used to describe meat from wild animals ranging from mammals to reptiles, for human consumption. Bushmeat, which could cause new EIDs, is currently regulated in many countries like the Democratic Republic of Congo to control and minimize illegal trade.²² However, bushmeat consumption will not go away even if it is banned. During the outbreak of Ebola from 2013-2016, West Africa initiated a bushmeat ban. While at first, this ban seemed like it would prevent future zoonotic viruses, it quickly backfired in multiple regions and the ban of wild meat and bushmeat, by order of public health officials, had the opposite and even more damaging effect.²³ Instead, it forced local markets underground and the purchase of bushmeat from illegal vendors. While the current system is far from perfect, cooperation with other

²⁰ Tsegahun, Manyazewal, Yimtubezinash Woldeamanuel, Henry M Blumberg, Abebaw Fekadu, and Vincent C Marconi. 2021. “The Potential Use of Digital Health Technologies in the African Context: A Systematic Review of Evidence from Ethiopia,” *NPJ digital medicine* 4, 4 (1). England: . The Author(s): 125-021-00487–4. doi:10.1038/s41746-021-00487-4.

²¹ Roesel, K., & Grace, D. (Eds.). (2014). *Food Safety and Informal Markets: Animal Products in Sub-Saharan Africa* (1st ed.). Routledge. <https://doi.org/10.4324/9781315745046>

²² Kenneth, Stansell. 2022. “Illegal Bushmeat Consumption in Africa | U.S. Fish & Wildlife Service.” *FWS.gov*. July 11, 2022.

²³ Jesse, Bonwitt, Michael Dawson, Martin Kandeh, Rashid Ansumana, Foday Sahr, Hannah Brown, and Ann H Kelly. 2018. “Unintended Consequences of the ‘bushmeat Ban’ in West Africa during the 2013-2016 Ebola Virus Disease Epidemic,” *Social science & medicine* (1982) 200, 200 (March). England: The Authors. Published by Elsevier Ltd.: 166–73. doi:10.1016/j.socscimed.2017.12.028.

systems allows for basic regulation since, currently, 90 percent of all bushmeat is passed through multiple hands, which could be beneficial for future regulation.²⁴

To solve the complex problem presented, a multilateral approach needs to be taken to understand and deal with the intricacies of the situation. A three-pronged solution could at least decrease the chances of EIDs in the future. First, a solution based on understanding cultural and social standing; the best course of action would be to take a gradual approach to changes while working with community and village leaders. Second, leveraging predictive models to calculate and prevent the further spread of food-borne illnesses before they get out of control. Finally, regulations on wildlife meat should be expanded, in particular, to slowly emphasize a change to a more domesticated, safe source of produce. Identifying the type of informal markets would be an initial step since some wet markets will require different attention than others. For example, very intertwined populations, like villages, often allow for gossip and small talk. Currently, there is no incentive for these traders to take part in training and certification. However, as expectations and standards continue to grow due to social media, so will the need for traders to adapt. This is not the first time gossip and small talk in Africa was used to solve public health issues. During the AIDS epidemic, frequently, surveys did not accurately portray what was going on in the population. A large amount of lying, especially relating to questions about adultery and having AIDS, was present. Researchers in Malawi decided to take gossip as data, scrapping survey questions in favor of formal approaches.²⁵

²⁴ National Research Council (US) Committee on Achieving Sustainable Global Capacity for Surveillance and Response to Emerging Diseases of Zoonotic Origin; Keusch GT, Pappaioanou M, Gonzalez MC, et al., editors. Sustaining Global Surveillance and Response to Emerging Zoonotic Diseases. Washington (DC): National Academies Press (US); 2009. 3, Drivers of Zoonotic Diseases. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK215318/>

²⁵ Susan Cotts, Watkins, and Ann Swidler. 2009. "Hearsay Ethnography: Conversational Journals as a Method for Studying Culture in Action," *Poetics* (Hague, Netherlands) 37, 37 (2). Netherlands: 162–84. doi:10.1016/j.poetic.2009.03.002.

Described as Hearsay Ethnography, through the usage of journals, researchers can collect information on cultural and social understandings unique to the region while also comfortably collecting data on a frightening topic, such as AIDS.²⁶ Compared to the original extensive population survey, the Hearsay Ethnography provided tangible results at a fraction of the price, making it possible to expand and still receive accurate, sensitive information. Another solution is using predictive modeling to detect, prepare for, and manage EIDs. Canada, at the moment, is already using these same resources to identify high-risk places and increasing surveillance and reactionary forces in case such an EID event were to happen.²⁷ Africa should take a similar type of action using risk management to determine which wet markets, especially those relating to wild animals, have significant risk of transmitting EIDs or food-borne pathogens. This triaging method would likely be the most effective way, with the available resources and data. While creating predictive models to accurately foresee the risk of each informal market would likely be a novel and challenging idea to implement, a model to accurately improve HIV treatment has already shown excellent results in South Africa. As emphasized, “Predictive modeling can improve the targeting of interventions through differentiated models of care before patients disengage from treatment programs, increasing cost-effectiveness and improving patient outcomes.”²⁸ This type of technology is crucial to how nations deal with EIDs; due to the fast-paced nature that infectious diseases can take, every second counts.

Finally, in conjunction with predictive modeling technology, the regulation is crucial in preventing the mass selling of bushmeat. Nothing better highlights this than a study conducted in

²⁶ Ibid

²⁷ N H, Ogden, P AbdelMalik, and Jrc Pulliam. 2017. “Emerging Infectious Diseases: Prediction and Detection,” Canada communicable disease report = Relevé des maladies transmissibles au Canada 43, 43 (10). Canada: 206–11. doi:10.14745/ccdr.v43i10a03.

²⁸ Mhairi, Maskew, Kieran Sharpey-Schafer, Lucien De Voux, Thomas Crompton, Jacob Bor, Marcus Rennick, Admire Chirowodza, et al. 2022. “Applying Machine Learning and Predictive Modeling to Retention and Viral Suppression in South African HIV Treatment Cohorts,” Scientific reports 12, 12 (1). England: . The Author(s): 12715-022-16062–0. doi:10.1038/s41598-022-16062-0.

the Democratic Republic of Congo, which shows a unique relationship between a group of women wholesalers and military officers who control a significant portion of the bushmeat market in the village.²⁹ However, due to a rebel group pushing the military officers back, the group of women wholesalers could not keep control of their portion of the bushmeat market, leading to the “absence of the control networks established by the military officers and wholesalers, there was no restraint on the number of individuals who could extract, transport, and sell bushmeat. The number of porters and market-stall owners thus increased nearly twofold, and the number of both hunters (soldiers) and bicycle traders increased more than sixfold during the wartime months.³⁰ However, once the war was over and officers and wholesalers were able to take back the market, rates fell back down to prewar numbers.³¹ This research paper shows the need for regulation and how effective, even essential, oversight can be. While it is unlikely that we can forever get rid of bushmeat in the African community, due to the cultural and social significance it has over communities, connecting with them is necessary to make sure that overhunting does not occur. However, a unique interaction showing the differences between rural and urban bushmeat markets was the difference in how rural communities were structured compared to urban ones. The same study highlighted that even in wartime rural communities, village leaders often play massive roles in the conservation and overall management of the market. Despite pressures from the military, poachers, and war, the general trade of bushmeat did not exceed normal levels because of the control village leaders had over their community.³² This

²⁹ EMMANUEL, De MERODE, and GUY COWLISHAW. 2006. “Species Protection, the Changing Informal Economy, and the Politics of Access to the Bushmeat Trade in the Democratic Republic of Congo,” *Conservation Biology* 20, 20 (4). John Wiley & Sons, Ltd: 1262–71. doi:10.1111/j.1523-1739.2006.00425.x.

³⁰ Ibid

³¹ Ibid

³² Ibid

control would later translate to taxes that would go to things like schools and infrastructure.³³

The study showed the crucial work that could be done with proper communication with leaders.

Ultimately, the threat of EIDs from bushmeat will decrease naturally as development allows people to move from rural to urban areas. As a Princeton University study emphasizes, “people in developing countries move from rural areas to cities, they consume less bushmeat over time, perhaps because other sources of animal protein are more readily available. They also found that children in urban areas generally have less of a taste for wild game than their parents. In the long term, this could be good news for conservation.”³⁴ Despite this, action must be taken against unregulated informal markets, which, while crucial for the economy, could potentially lead to EIDs and problems with existing pathogens. It is a highly delicate scale played out and provides even more reason to put resources into it. It is imperative that instead of punishing countries that have informal wet markets, world leaders should look to bring the idea into the modern world; one that not only stays true to its initial mission of providing vulnerable individuals fresh produce to survive but one that can hold to current public health standards.

³³ Ibid

³⁴Rose, Huber. 2020. “People in Developing Countries Eat Less Bushmeat as They Migrate from Rural to Urban Areas | Princeton School of Public and International Affairs.” Princeton School of Public and International Affairs. November 16, 2020.

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