

Chairs Letters

Dear Delegates,

My name is Penelope Fleischer, and I am honored to be serving as your Co-Chair for this conference. I am currently a junior, and started doing MUN three years ago in 8th grade. My very first conference was T&TMUN 2023, and I remember being so scared and intimidated. But since then, through MUN, and grown so much as a public speaker, leader, and teammate. I hope you all use this conference as an opportunity to take risks and step out of your comfort zone. It sounds cheesy, but it's true. Whether you're delving into a new topic, giving a speech for the first time, or looking at an issue from a different perspective, I believe the biggest thing you can do for yourself is to be scared. Be scared, but do it anyway, and fake it till you make it. Through this, I know you will grow and have so much fun while doing it.

Outside of MUN, I'm an active member of our technical theater program. I also enjoy baking and cooking, and founded the Science Behind Baking club. In my free time, I love watching Formula 1, Indycar, and all motorsport. I also enjoy history, fashion magazines, and as our Co-President, I am currently planning to stage a violent coup d'état and assassinate Dr Halloran with a gavel to grab all MUN power for myself. I'm looking forward to the conference, and can't wait to meet all of you and hear your wonderful ideas. Please don't hesitate to contact me if you have any questions, concerns or just want to yap.

Sincerely,

Penelope Fleischer

penelope.fleischer@ljcds.org

(858)209-1984

Dear Delegates,

My name is Katherine Bevash, and I'm so excited to be your Co-Chair at Torreymun this year! I'm currently a junior, and I've been participating in Model UN since ninth grade. I originally joined because I had friends who were involved, rather than out of any particular interest in diplomacy, but ever since my first conference, I was hooked.

It's completely normal to feel nervous- trust me, I still regret my life choices whenever I have to speak in front of a room- but, as my Co-Chair says, fake it till you make it! Even if you don't feel confident at first, the more you push the edges of your comfort zone, the easier it becomes. Remember, your speeches and resolutions don't have to be perfect. What matters is that you try your best, take risks, and have fun while doing it. Everyone starts somewhere, and MUN is all about pushing yourself to learn new skills.

I can't wait to meet all of you and see the creative solutions you bring to the conference! If you need anything beforehand, don't hesitate to email or text me. I am available for any and all questions, concerns, conspiracies, catastrophes, or cosmic revelations.

Sincerely,

Katherine Bevash

katherine.bevash@ljcds.org

+1 (858)-209-4131

Position Paper Guidelines

- a. 1 Page
- b. Times New Roman 12pt font
- c. 1-inch margins (note: Google docs default to 1.25)
- d. Header
 - i. Committee:
 - ii. Delegation:
 - iii. Delegate Name:
 - iv. School:
 - v. Date:
- e. Paragraphs:
 - i. Background of the issue (based on background guide)
 - ii. Character stance (How would your character view this issue?)
 - iii. Proposed solutions (How would your character find a solution to this issue?)

Committee Expectations

The United Nations Food and Agriculture Organization aims to achieve food security and nutrition globally. This committee will specifically focus on the latter goal, addressing food quality issues that arise due to contamination. This can range from regulating ready-to-eat packaging to preventing international zoonotic pandemics. The problems covered encompass a wide range of issues, and delegates must be prepared to propose a multitude of nuanced solutions. No single plan is a silver bullet, rather, delegates must work together to accommodate the unique problems presented to them. Needless to say, food safety looks very different in the United States versus Indonesia versus Kenya, and each delegation will have their own goals, issues to address, and perspectives. Thus, FAO must focus on facilitating international cooperation to address both local and global problems. Delegates should keep in mind a realistic scope and impact of their proposals, highlighting the practical means necessary. Details like timing, logistics, and funding are especially important. Additionally, setting specific goals and targets is essential. Most importantly, however, this committee should be creative, fun and not at all boring!

United Nations Food and Agriculture Organization

Founded in October 1945, The United Nations Food and Agriculture Organization (FAO) is the oldest permanent specialized agency of the United Nations. It aims to eliminate hunger, improve nutrition, and raise standards of living by increasing agricultural productivity. FAO coordinates the efforts of governments, non-governmental organizations, and technical agencies to develop agriculture, fisheries, forestry, and land and water resources. It also operates education programs, keeps statistics, publishes periodicals and research bulletins, and provides technical assistance on projects in individual countries. All 194 United Nations member states are also members of FAO, as is the European Union and several associate members. FAO also partners with many non-governmental organizations and intergovernmental organizations to promote its goals.

To do so, FAO works based on the Basic Texts of the Organization, including the FAO Constitution, which sets out all the critical elements of the Organization's governing structure. In the Conference, the main Governing Body of FAO, each member gets one equal vote, and the Commission, elected to act on behalf of the Conference in between sessions. The Governing Bodies also includes the Council Committees (The Programme Committee, the Finance Committee and the Committee on Constitutional and Legal Matters), the Technical Committees (COFO, COFI, etc.) and the Regional Conferences (five formally established). As set out by the Constitution, and reiterated by all Governing Bodies, The total FAO Budget comes from assessed contributions and voluntary contributions from Members and other partners. The Financial Regulations govern the financial administration of FAO and its resources, including funds, the regular budget, financial controls and external audits. As a matter of principle, the

Organization cannot accept voluntary contributions that imply or impose additional financial obligations on the Members, without the consent by the Conference.¹

This structure allows FAO to advance goals ranging from food security, data collection, cultural protection, and environmental sustainability. Namely, the *FAO Strategic Framework 2022-31* bases FAO's vision of a sustainable and food secure world for all in the context of the United Nations Sustainable Development Goals, divided into the "Four Betters". It aims for "sustainable agrifood systems for better production, better nutrition, a better environment, and a better life, leaving no one behind."² The Hand-in-Hand Initiative focuses on data-driven analysis to help plan and fund nationally-owned agri-food systems in the most vulnerable countries.³ For example, the Initiative and Nepal's Ministry of Land Management, Agriculture and Cooperatives (MoLMAC) jointly hosted The Madhesh Food Forum 2025. The Forum served as a strategic hub and platform for innovation, and announced a USD 37.9 million investment in Nepal's food systems.⁴ Similarly, FAO launched One Country One Priority Product (OCOP) to promote at global, regional and local levels the Special Agricultural Products (SAPs) with unique qualities and special characteristics. For example, OCOP promotes the transparent supply chain of Kazakh apples, positioning this unique crop as a key to preserving cultural heritages, encouraging sustainable farming practices, and increasing biodiversity in Central Asia.⁵ These are just a few of FAO's many, many, programmes, touching on just a few of the wide range of issues FAO

¹Food and Agriculture Organization of the United Nations, *FAO History Highlights* (Rome: FAO, September 17, 2020), 1–4, PDF file, accessed August 7, 2025,

² Food and Agriculture Organization of the United Nations, *FAO's Four Betters: A systems lens to accelerate the SDGs* (Rome: FAO, 2022), chap. 2, accessed August 7, 2025,

³Food and Agriculture Organization of the United Nations, "Core Concepts," *Hand-in-Hand Initiative*, FAO, accessed August 7, 2025, https://www.fao.org/hand-in-hand/core_concepts/en.

⁴Food and Agriculture Organization of the United Nations, "With Support from the Hand-in-Hand Initiative, the Madhesh Food Forum 2025 Secured a USD 37.9 Million Investment to Drive Agrifood Transformation in Nepal," *Hand-in-Hand Initiative (News)*, FAO, June 11, 2025, accessed August 7, 2025,

⁵Food and Agriculture Organization of the United Nations, "One Country One Priority Product (OCOP)," FAO, accessed August 7, 2025, <https://www.fao.org/one-country-one-priority-product/en>.

works on. FAO has repeatedly emphasised the importance of food safety, but has often been unable to make a real impact.

Food Safety and Public Health

Introduction

FAO defines food security as “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food,”⁶ This means that FAO must not focus not only on access to food and environmentally sustainable food sources, but also on promoting and ensuring the quality of that food. To truly advance its food security goals, FAO must double down on protecting food safety. Unsafe food containing harmful bacteria, viruses, parasites or chemical substances causes more than 200 diseases, ranging from diarrhoea to cancers. Safe food supplies are essential for health, contribute to food and nutrition security, support national economies, trade and tourism, and underpin sustainable development.

Food safety is a shared responsibility among different national authorities and requires a multisectoral, one health approach, to be addressed in all the steps of the food chain. Many NGOs and IGOs have taken action to do so. For example, in 2010, the World Health Organization resolved to research the effectiveness of food safety measures, improve international and national collaboration, and strengthen risk-based, integrated national systems for food safety.⁷ FAO, too, has done its part to address growing food safety challenges; In partnership with WHO, the Codex Alimentarius Commission sets out critical recommendations to harmonize food safety regulations. Moreover, FAO regularly provides technical assistance to governments, especially of developing countries, and facilitates access to information on food

⁶Food and Agriculture Organization of the United Nations, *Measuring Different Dimensions of Food Security*, in *The State of Food Insecurity in the World 2013: The Multiple Dimensions of Food Security* (Rome: FAO, 2013), PDF file, accessed August 7, 2025, <https://www.fao.org/4/i3434e/i3434e02.pdf>.

⁷World Health Organization, “Food Safety,” *WHO Fact Sheets*, October 4, 2024, accessed August 7, 2025, <https://www.who.int/en/news-room/fact-sheets/detail/food-safety>

safety.⁸ Despite these efforts, much still needs to be done. The international community has done little to bolster food safety. The issue of food safety has many components all across the food chain. In particular, contamination, new agricultural methods such as genetically modified organisms, and the risk of zoonotic diseases require immediate action.

Contaminated food threatens both public health and economic productivity, especially across the Global South. Contamination spreads throughout the food value chain, from environmental contamination, food processing, packaged food transportation, and even poor storage conditions. Resulting contaminants can include molds, microplastics, carcinogens, and even toxic heavy metals. Beyond this, the international community struggles to address the risk of zoonotic and foodborne illness. Food supply chains are economically critical in all pandemics, and they can act as vectors to spread both foodborne and non-foodborne diseases. Hygiene amongst workers and the sanitation of food preparation are alarming concerns, only worsened by an interconnected supply chain where one outbreak can reach far and wide. Climate change and environmental degradation also enables the emergence of new pathogens, and endangers safe agricultural practices. When wildlife must adapt to changing habitats, the risk of “spillover” of animal diseases to humans increases. Bushmeat, for example, presents significant challenges across West and Central Africa. Meanwhile, nations all over the world must act quickly to identify, prevent, and address food safety concerns.

Costs and Spread

Contamination of food presents a serious risk to human health. According to the World Health Organization, each year, one in ten people worldwide fall ill after eating contaminated food. Low- and middle-income countries in particular struggle with a loss of over \$110 billion in

⁸Food and Agriculture Organization of the United Nations, “Ensuring Food Quality and Safety and FAO Technical Assistance,” in *Food, Nutrition and Agriculture*, accessed August 7, 2025.

productivity and medical expenses resulting from unsafe food. Globally, contaminated food takes 420,000 lives each year, 125,000 of which are children under five.⁹ Despite this, food safety receives little attention from policymakers; the issue tends to only capture national attention during outbreaks of foodborne diseases and other public health crises. As a result, many countries have weak food safety systems, lacking reliable infrastructure, trained personnel, enforceable regulations, and food safety cultures. Food contamination also presents several economic risks. According to the World Bank,

“The total productivity loss associated with foodborne disease in low- and middle-income countries is estimated to cost \$95.2 billion per year, and the annual cost of treating foodborne illnesses is estimated at \$15 billion. Other costs include losses of farm and company sales, foregone trade income, the health repercussions of consumer avoidance of perishable yet nutrient-rich foods, and the environmental burden of food waste.”

The costs of unsafe food are particularly high in Asia and Sub-Saharan Africa, where incidence of foodborne diseases are the highest. Besides the incontrovertible public health costs, food safety issues also disrupt food markets, worsen economic productivity, and impede agribusiness.¹⁰

Contaminants can spread through every step of the food value chain, from multiple sources (Figure 1¹¹). Firstly, environmental contamination can cause external raw food contamination. Industrial growth and the variety of agricultural technologies can facilitate contamination; For

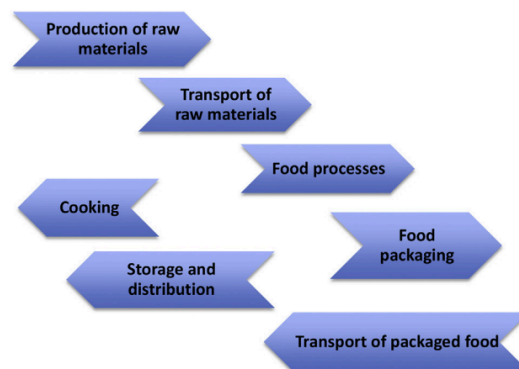


Fig. 1. The food processing steps.

⁹ WHO quick stats,

¹⁰ World bank

¹¹ Cristina Nerin, Margarita Aznar, and Daniel Carrizo, “Food Contamination during Food Process,” *Trends in Food Science & Technology* 48 (2016): 63–68, <https://doi.org/10.1016/j.tifs.2015.12.004>.

example, many studies detect pesticide residues in fruits and vegetables, and that certain fertilizers increase the presence of toxic heavy metals including lead and arsenic. Second, transportation of raw materials risks cross contamination in the vehicle. For example, in 1999, fungicide-contaminated pallets used for storage lead to a major illness in Europe. Third, manufacturers process over 90% of food in some way, and the majority of contamination takes place in this step. Microwaves are particularly dangerous, as uneven heating sterilizes poorly. Microwavable foods are usually prepackaged including plastics, paperboard, and composites, which during cooking can migrate contaminants into food. Fourth, while food packaging provides significant physical protection, low quality packaging exposes food to contamination. For example, any compound with a molecular mass lower than 1000 amu can migrate and cross the polymeric or paper layers, arrive at the food and dissolve in it. Fifth, storage and distribution of packaged food presents several problems; Certain storage conditions (e.g., high temperature and humidity) affect packaging material properties.¹² Poor storage, and poor handling at any step of the process presents significant risks of contamination by mycotoxins, microplastics, chemical hazards, heavy metals, carcinogens, and mutagens.

Particularly dangerous, molds and fungi naturally produce toxic compounds known as mycotoxins. Mycotoxins flourish in many foodstuffs, including nuts, spices, dried fruits, and cereals, especially in warm, damp, and humid conditions. They grow either before or after harvest, during storage, and in the food itself. Alarmingly, most mycotoxins are chemically stable and survive food processing. Thus, prevention and avoidance are essential. WHO advises people to:

¹²Nerin, Aznar, and Carrizo, "Food Contamination during Food Process," 65

1. “inspect [foodstuffs] regularly contaminated with aflatoxins for evidence of mould, and discard any that look mouldy, discoloured, or shrivelled;
2. avoid damage to grains before and during drying, and in storage, as damaged grain is more prone to invasion of molds [...]
3. make sure that foods are stored properly – kept free of insects, dry, and not too warm;
4. not keep foods for extended periods of time before being used”¹³

WHO, along with FAO, oversees the risk to humans of mycotoxins through the contamination of food. These assessments are done by the Joint FAO/WHO Expert committee on Food Additives (JECFA). Independent studies establish maximum levels for mycotoxins in food: For example, the Codex Alimentarius sets a range of 0.5 to 15 µg/kg as the maximum level for aflatoxins in milk.¹⁴

Microplastics are also becoming an increasingly common pollutant, owing to their growing usage and their ability to enter the food-value chain at the very beginning, with agriculture. Contamination begins at the very beginning of our food-value chain, with agriculture. Microplastic contamination is particularly common. Microplastics (MPs) can enter agriculture from a variety of sources, including mulch, film, tractor tires, compost, fertilizers, and even pesticides. Plastics are commonly used in agricultural technology because of their water resistance and low perishability. In 2022, worldwide production of plastic reached over four hundred million tonnes, while only nine percent of plastic was recycled. The United Nations has emphasized marine plastic pollution as one of the ten most important environmental problems, and highlighted the issue with SDG 14: Life Below Water. MPs pollute seafood, particularly through fish and through salt extraction. Combined with their use in agricultural activity, this spreads them into the human body. Toxicity tests show negative effects of MPs on

¹³ World Health Organization, “Mycotoxins,” *WHO News-Room Fact Sheets*, October 2, 2023, accessed August 7, 2025.

¹⁴ WHO, “Mycotoxins.”

the growth, reproductive, and endocrine systems of humans. Moreover, they can also act as carriers for microorganisms and increase the spread of diseases.¹⁵

Chemical Hazards

Besides microplastics, chemical hazards too easily contaminate agriculture. Almost all mass produced products contain chemical contaminants, including disinfectants, plastics, detergents, deodorants, pesticides, and, of course, foodstuffs. Several metals, including toxic heavy metals cadmium, mercury, lead, and polychlorinated biphenyl (PCB) enter through the industrial environment to contaminate food. For example, heavy metal smelting in Huludao in Northeast China contaminates nearby farmland with heavy metals such as lead, cadmium, zinc, copper, and mercury. Plants easily absorb such toxic substances from the soil. In the same way, pesticides – over 3 billion kgs of which are applied each year – used as protection agents also enter the food chain. Human exposure to these chemicals presents various health risks, including immune suppression, diminished intelligence, hormone disruption, cancer, and reproductive abnormalities. Chemical and heavy metal contaminants also pollute clean drinking water. Drinking water sourced from groundwater can be contaminated with heavy metals, potentially resulting in both carcinogenic and noncarcinogenic health defects, including fecal contamination.¹⁶

The second most common cause of death, cancer takes around 10 million lives each year, spurred in part by the proliferation of carcinogenic food contamination. According to the NIH, “More than 2,500 chemical substances are intentionally added to modify flavor, color, stability, texture, or cost. In addition, an estimated 12,000 substances are used in such a way that they may

¹⁵ Microplastics in agricultural crops - pmc

¹⁶ Irfan A. Rather, Wee Yin Koh, Woon K. Paek, and Jeongheui Lim, “The Sources of Chemical Contaminants in Food and Their Health Implications,” *Frontiers in Pharmacology* 8 (2017)

unintentionally enter the food supply.”¹⁷ As with mycotoxins, some carcinogens occur naturally. Salted fish, for example, inevitably produces a small amount of carcinogens. Nonetheless, best practices for handling, production, and storage are avoided. natural products. Human-made chemicals may also be created during the production process; They often contaminate surroundings, resist degradation, and build up in certain foodstuffs. Most alarmingly, some carcinogenic chemicals are intentionally added to foods.¹⁸ While many food ingredients have been identified and tested for carcinogenicity, much about their tumor-producing properties remains unknown.¹⁹ Similar symptoms and regulatory issues are presented by mutagens, substances that increase the rate of mutations in DNA or other cells. Many mutagens occur naturally, such as caffeine in coffee, and are considered safe. However, some are proven carcinogens, their significance continues to be debated.²⁰

Foodborne Illnesses

In addition to the long-term consequences of contaminants, foodborne illnesses and zoonotic diseases present their own dangers. In 2009, an outbreak of H1N1 swine flu dramatically disrupted pork supply chains. For the most part, researchers and policymakers have long assumed that a zoological global outbreak would directly infect livestock. However, after the Covid-19 pandemic, greater dangers became apparent. Infection of people who ran farms and food processing plants posed a greater risk, not only of further spread but also of plant closures. Not only would short-term productivity dwindle, but livestock and plants cannot be kept

¹⁷Christian C. Abnet, “Carcinogenic Food Contaminants,” *Cancer Investigation* 25, no. 3 (April–May 2007): 189–196, <https://doi.org/10.1080/07357900701208733>.

¹⁸Abnet, “Carcinogenic Food Contaminants,”

¹⁹ National Research Council (US) Committee on Diet, Nutrition, and Cancer, *Diet, Nutrition, and Cancer: Directions for Research*, chapter 8, “Food Additives, Contaminants, Carcinogens, and Mutagens” (Washington, DC: National Academies Press, 1983), accessed August 7, 2025.

²⁰National Research Council, “Food Additives,”

indefinitely: food and other expenses pile up, and equipment breaks down after disuse.²¹

Food workers are particularly vulnerable to infection and spread. Oftentimes, workers are asymptomatic and spread the pathogen unknowingly while working. Sometimes, they continue to prepare food even when ill, obviously to themselves, and sometimes others. Because of this, multi-ingredient foods with intense handling have increased chances of contamination.²² Large outbreaks tend to span several days surrounding a continuous source, such as festivals, resorts, or community events. Alternatively, contaminated products might ship to numerous spread out customers, for example undercooked icing on grocery store cookies. The majority of outbreaks occur in food service facilities, especially restaurants.²³

A variety of factors include hand hygiene, cleaning of equipment and utensils, cross-contamination of raw and ready-to-eat food, and temperature abuse.²⁴ Via hands, some pathogens are able to infect in doses as low as 1 to 100 units. Fecal, nose, throat, or skin pathogens are most likely to be transmitted this way, necessitating effective hand hygiene.²⁵ Also common is the fecal-oral route, where pathogens that originate from feces later contaminate food or water sources. This is often due to direct hand contact, contaminated fabrics, carpets, rings, currency, dust, aerosols or person-to-person transmission.²⁶ This contact should be avoided as much as possible, both by the use of gloves and other physical barriers. These may include walls and doors that minimize flow of outside particles and pests to food storage, preparation areas, shields to prevent aerosol contamination, work clothing and sterilized uniforms, and use of

²¹Meghan Davis and Jessica Fanzo, “The Threat of Zoonotic Diseases on the Global Food Supply: Preventing the Next Spillover,” *Nutrition Connect*, May 18, 2020, accessed August 7, 2025.

²²Judy D. Greig, Ewen C. D. Todd, Charles A. Bartleson, and Barry S. Michaels, “Outbreaks Where Food Workers Have Been Implicated in the Spread of Foodborne Disease. Part 1. Description of the Problem, Methods, and Agents Involved,” *Journal of Food Protection* 70, no. 7 (July 2007): 1752–61,

²³Todd et al., “Outbreaks... Part 2,”

²⁴Todd et al., “Outbreaks... Part 3,”

²⁵Todd et al., “Outbreaks... Part 4,”

²⁶Todd et al., “Outbreaks... Part 6,”

utensils such as spoons, tongs, and deli papers to prevent direct contact between hands and the food being prepared or served. Money and ready-to-eat foods should be handled as two separate operations, preferably by two workers. Chemical barriers include sanitizing solutions used to remove microorganisms (including pathogens) from objects or materials used during food production and preparation and to launder uniforms, work clothes, and soiled linens.²⁷ Managers of food operations often find it difficult to enforce such practices, and to identify infected workers. Even when workers do self-report their illness, they can shed pathogens before, after, and during the symptomatic period. For example, some patients spread *Salmonella* for 102 days. Thus, even when a sick worker immediately leaves the work environment, residue can contaminate food, surfaces, and other workers.²⁸

In our globalised world, identifying the source of emerging large-scale outbreaks of foodborne disease is challenging. For example, In the summer of 2011, an outbreak caused by Shiga toxin-producing *Escherichia coli* (STEC) O104:H4, spread by sprouts grown in Germany, caused 54 deaths and 4321 illnesses in 16 countries over just a nine-week period. Large-scale production and distribution practices increase both the prevalence and severity of outbreaks. From 2005 to 2014, the United States saw nearly 200 multi-state outbreaks, compared with 85 from 1995–2004; these multi-state outbreaks accounted for 3% of total outbreaks, but were responsible for 34% of hospitalizations and 56% of deaths. Most infections occur during one of four transformation stages: production, distribution, storage or consumption. The layered, directed structure of the food supply network creates a huge multiplicity of possible paths (see Figure 1). Despite this, one study found that:

“...Due to the existence of multiple competitors in food production, trade and retailing markets: any given food type will be distributed

²⁷Todd et al., “Outbreaks... Part 10,”

²⁸Todd et al., “Outbreaks... Part 10,”

through multiple larger retailers or wholesalers, each dealing with similarly large volumes of product... In the network model, this translates into homogeneity in path lengths and the existence of multiple paths of similar probability.”

This duality makes tracking, identifying, and addressing outbreaks incredibly difficult.²⁹

Thus, well constructed food safety programs essentially include effective surveillance systems. Surveillance must identify foodborne illnesses, their causes, and their socio-economic impact. Then, early alert of a disease should trigger quick reactions and prevention of further spread. Reports and data should track the spread, nature, symptoms of various outbreaks, especially of their trends in morbidity over a long period of time, and investigate the foods implicated. Case-control studies and laboratory analysis of stool and food samples may be carried out to obtain detailed information on the useful link between food and disease. Thus, “sentinel site studies” to an extent within one community that can be extrapolated to a larger region. However, lack of international and regional surveillance systems challenge their effectiveness. Many countries have their own national programs, but surveillance is often of low priority and difficult to coordinate. Thus, regardless of economic development, cases of mild diseases were more frequently reported in smaller countries. Effective surveillance systems must track which foods are most vulnerable to contamination, and identify where in the supply chain mishandling occurs through careful observation of ingredient sources, preparation, and health of workers. Non-industrialised nations face particularly dire issues, with most surveillance limited to extremely large, prominent, and common outbreaks such as salmonella. A limiting factor to foodborne disease surveillance is the microbiological expertise of the investigating laboratories. Nonetheless, the socio-economic impact of foodborne disease remains ignored by many policymakers, continuing lack of current, relevant, and recent data.

²⁹Abigail L. Horn and Hanno Friedrich, “Locating the Source of Large-Scale Outbreaks of Foodborne Disease,” *Journal of the Royal Society Interface* 16, no. 151 (February 27, 2019)

New Pathogens and Agricultural Spillover

This makes it increasingly difficult to accurately assess the risks of new pathogens emerging from developing countries. Oftentimes, environmental degradation endangers agricultural and food safety mechanisms. Despite limited data, the World Health Organisation and other NGOs agree that human diseases have been rapidly increasing in prevalence over the past decade; As threats to the environment increase, as does the risk of foodborne diseases. At present, about 40% of deaths worldwide are linked to environmental degradation, not least because 3.7 billion people are malnourished. Malnutrition weakens immune systems, leaving people increasingly vulnerable to diseases: malnourished young children are twice as likely to die from malaria compared to well-nourished children. Meanwhile, environmental changes often increase the prevalence of such dangerous diseases. For example, deforested parts of Africa converted to farmland develop temporary pools of water, facilitating the breeding of malaria-transmitting mosquitoes. Oftentimes, land development directly facilitates spread of disease: as wind erosion blows around exposed soil, it can carry over 19 different pathogens, including flu virus, hantavirus, anthrax, and tuberculosis. Similarly, the construction of dams and other alterations to water flow increases the number of snails, often carrying schistosomiasis, that infect fresh water and food sources.³⁰ While land development and urbanization, by expanding agriculture, can be incredibly useful in addressing food security concerns, it must be done cautiously to not endanger food safety.

These environmental changes force wildlife to adapt, shifting the nature of wildlife trade and contact rates between virus carrying animals and humans. As natural habitats shrink, wildlife must often move closer to human settlements. Moreover, shifting climate conditions, including

³⁰David Pimentel, "Ecology of Increasing Diseases: Population Growth and ...," *Human Ecology* 35, no. 6 (December 2007)

droughts, floods, and unpredictable seasons can lower crop yields, reduce arable land, and disrupt planting cycles. Thus, ecological changes also make traditional agriculture difficult and unpredictable.³¹ As a result of both opportunity and necessity, many communities turn towards a heavy reliance on hunting their new neighbors. In Central Africa, bushmeat is a common fallback when agriculture fails.

Many communities in the tropics and subtropics rely on harvesting bushmeat for both food security and basic income. However, the practice risks transmission of zoonotic pathogens through hunting, food preparation, and consumption. Over 150 million households rely on bushmeat, and estimates attribute nearly 90% of consumed animal protein in West and Central Africa to bushmeat. Bushmeat hunting tends to be most prevalent in areas with greater biodiversity indices, which frequently align with regions experiencing higher poverty, food insecurity, and vulnerability to ecological changes. Despite its prevalence, the practice is often outlawed due to health concerns. Human contact with wildlife is a major pathway for emerging and endemic infectious diseases, with 62% of all newly emerging infectious diseases being zoonotic and over 70% of those zoonoses implicating wildlife reservoirs. Besides direct human transmission, pathogens from hunted wildlife can also jump to domestic animal species, such as African swine fever, avian influenza, rabies, anthrax, and Rift Valley Fever.³²

Lack of awareness and caution exacerbates these risks. In Uganda, for example, dealers often disguise primate meat as another kind of meat. Despite this open secret amongst hunters and dealers, the majority of female cooks believe that this deceit is rare. As a result of this misunderstanding, one study found that more cooks took extensive precautions when preparing

³¹Meghan Davis and Jessica Fanzo, "The Threat of Zoonotic Diseases on the Global Food Supply: Preventing the Next Spillover," *Nutrition Connect*, May 11, 2020, accessed August 7, 2025,

³²BreeAnna M. Dell, Marcy J. Souza, and Adam S. Willcox, "Attitudes, practices, and zoonoses awareness of community members involved in the bushmeat trade near Murchison Falls National Park, northern Uganda," *PLOS ONE* 15, no. 9 (September 28, 2020)

domestic meat (around 27.1%) compared to when preparing bushmeat (only 23.3%). However, almost all respondents knew the real and present danger of disease spillover.³³ This case study perhaps speaks to confidence in traditional food safety measures. Alternatively, it illustrates abstract awareness does not always translate into action on a practical, day to day level. While almost everyone is aware in theory of the risks of foodborne or related illnesses, it rarely impacts everyday behavior.

The issue of foodborne illness is more complicated than it appears. On the surface, proper preparation of foodstuffs should prevent proliferation - but this preparation can sometimes act as a vector in and of itself. During even non-foodborne epidemics, food processing staff are particularly vulnerable to infection and spread. Large outbreaks of both viruses and foodborne illnesses often surround community food events. And transmission itself often occurs via food.

Moreover, foodstuffs themselves can become contaminated at all steps of the food chain. Microplastics, toxic heavy metals, chemical hazards and even intentionally added carcinogens all threaten food safety. The range of such factors makes tracking and identifying outbreaks difficult. This is especially true for developing countries, where the issue is exacerbated by lack of resources, organisation, and effective response apparatuses. Moreover, environmental degradation endangers agriculture, and environmental changes increase the risks of zoonotic diseases. Bushmeat, for example, is both increasingly critical in developing nations and increasingly dangerous to their food safety.

Past International Actions

Food safety and public health have long been matters of international concern. Risks from contaminated food, zoonotic spillovers, and large-scale outbreaks demand cross-border

³³Dell, Souza, and Willcox, “Attitudes, practices, and zoonoses awareness.”

coordination, yet responses have often been fragmented, with gaps in surveillance and enforcement. International organizations such as the United Nations (UN), the World Health Organization (WHO), the Food and Agriculture Organization (FAO), and the Codex Alimentarius Commission have each played central roles in building frameworks to address these challenges. This section reviews major precedents in international action, underscoring the importance of cooperation and institutional responses.

FAO has consistently emphasized strengthening veterinary infrastructure and disease monitoring capacity, particularly in countries with weaker regulatory systems. Its guidance highlights hygienic production, prevention of zoonotic transmission, and safe disposal of contaminated products. Through bulletins, consultations, and technical assistance, FAO has urged governments to adopt contingency plans, improve labeling and traceability, and prioritize early detection and response to priority diseases. Recent examples include 2024 FAO-led epidemiology training for veterinarians in the Democratic Republic of Congo, part of its broader mission to align developing states with evolving international norms.³⁴

WHO, meanwhile, elevated food safety from a niche issue to a core priority by the late 20th century. A turning point came with the International Health Regulations (1969; revised 2005), which expanded from controlling a handful of diseases to addressing “public health emergencies of international concern,” explicitly covering foodborne and zoonotic threats. The WHO Global Strategy for Food Safety (2002, WHA55.16) further institutionalized food safety as a global responsibility, calling for stronger surveillance, laboratory capacity, risk-based regulation, and consumer education. WHO also serves as a central coordinator among national

³⁴ Food and Agriculture Organization of the United Nations (FAO), “With Funding from USAID, FAO Trains Animal Health Professionals in Applied Veterinary Field Epidemiology in the Democratic Republic of Congo,” FAO, July 31, 2024,

health ministries, promoting transparency, rapid information-sharing, and consistent standards for zoonotic disease reporting.³⁵

Jointly administered by FAO and WHO, the Codex Alimentarius Commission has been a cornerstone of international food safety since its establishment in 1963. Its main goal is to harmonize global food standards to protect consumers and support fair trade. Codex produces guidance on hygiene, contaminants, food additives, and labeling. Over time, it has shifted from purely technical recommendations to broader guidance for managing risks across the food chain. While not legally binding on its own, Codex standards are widely used by national regulators and serve as the basis for international trade rules through the WTO. At the UN level, the 1974 World Food Conference connected food security with food safety, recognizing that unsafe food undermines nutrition and development goals. It led to the creation of the Committee on World Food Security (CFS) and spurred FAO to expand technical surveillance on contaminants and zoonoses. Though not binding, this marked a precedent for integrating food safety into global governance, paving the way for later resolutions on zoonoses, antimicrobial resistance (AMR), and pandemic preparedness.³⁶

The early 2000s saw a broader paradigm emerge linking human, animal, and environmental health. FAO, WHO, and the World Organisation for Animal Health (OIE, now WOAH) launched the “One World, One Health” initiative (2004), later developed into the “One Health” framework. The UN reinforced this shift, notably through the 2016 High-Level Meeting on Antimicrobial Resistance (A/RES/71/3), which explicitly connected agriculture and food production to AMR and called for integrated surveillance. Subsequent crises—from avian

³⁵ Carmen Joseph Savelli, Adam Bradshaw, Peter Ben Embarek, and Céu Mateus, “The FAO/WHO International Food Safety Authorities Network in Review, 2004–2018: Learning from the Past and Looking to the Future,” *Foodborne Pathogens and Disease* 16, no. 7 (July 2019): 480–488, <https://doi.org/10.1089/fpd.2018.2582>

³⁶ Food Safety Institute, “Historical Background of the Codex Alimentarius Commission,” accessed August 20, 2025,

influenza and the 2008 melamine milk scandal to the COVID-19 pandemic—underscored the need for coordinated, cross-sectoral governance. Today, One Health represents the culmination of decades of institutional learning: from basic technical standards to a holistic, multisectoral approach to food safety governance.³⁷

In short, food safety isn't just about what ends up on our plates—it's tied to public health, trade, and global cooperation. Over the decades, international organizations like FAO, WHO, and Codex have built systems, standards, and programs to prevent contamination, track diseases, and respond to outbreaks. From early technical guidelines to modern One Health approaches, history shows that tackling food safety requires coordination across countries, sectors, and even species. For delegates, this guide is meant to show both the complexity of the issues and the tools that exist to address them—highlighting that while the problems can be serious, careful planning, cooperation, and creativity can make a real difference in keeping food safe worldwide.

³⁷ World Health Organization (WHO), *The WHO One Health Initiative (OHI)*, September 2, 2024,

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