



COMMITTEE A THEME GUIDE

Food Security, Safety and Sustainable Food Production



Food security, food safety, and sustainable food production play integral roles in the One Health approach, emphasizing the interconnections between human, animal, and environmental health. Addressing food security is essential in the context of One Health as it recognizes that access to safe and nutritious food is a fundamental human right and a prerequisite for overall well-being. By ensuring an adequate and reliable food supply, we can combat malnutrition and hunger, which not only directly impact human health but also have ripple effects on the health of animals and ecosystems. A secure food system that supports balanced diets contributes to stronger immune systems in both humans and animals, reducing the risk of disease transmission and enhancing community resilience against health threats. Through comprehensive food safety measures, such as proper handling, processing, and storage, we can minimize the risk of pathogens and toxins entering the food chain. This not only safeguards human health but also protects animals from zoonotic diseases that can be transmitted from animals to humans through the consumption of contaminated food. By promoting food safety across the entire food system, from farm to table, we can prevent disease outbreaks, reduce the burden on healthcare systems, and promote a harmonious relationship between humans, animals, and the environment. Sustainable food production is a vital component of One Health as it acknowledges the intricate connections between agriculture, the environment, and public health. Unsustainable agricultural practices, such as excessive use of chemicals or deforestation, can have devastating consequences for ecosystems, wildlife, and climate change. By adopting sustainable agricultural methods that prioritize biodiversity conservation, soil health, and water management, we can mitigate the environmental impact of food production while ensuring long-term food security. Sustainable agriculture also supports the health and welfare of animals by providing them with a natural and healthy habitat.



| Theme Guide Agenda for May 2 nd , 2024 | |
|--|--|
| Committee Session 1 – Foodborne pathogens and their impact on health | |
| <p>Foodborne pathogens are microorganisms causing illness when consumed, posing threats to human health with symptoms ranging from nausea to fatality. These pathogens also endanger animal health via the food chain, affecting livestock and wildlife. Inadequate disposal of contaminated food leads to environmental contamination, impacting ecosystems. Mitigation involves stringent food safety measures, encompassing hygiene, thorough cooking, proper storage, and effective waste management to alleviate the impact of foodborne pathogens on humans, animals, and the environment.</p> | |
| <p>Guiding Questions</p> <ol style="list-style-type: none"> 1. What are the challenges in detecting and preventing foodborne pathogens outbreak across the supply chain? 2. How do foodborne pathogens contribute to the global burden of disease, and what are the key challenges in estimating their impact on public health? 3. Analyze the effectiveness of international organizations such as the World Health Organization (WHO) and the Food and Agriculture Organization (FAO), in coordinating global efforts to combat foodborne pathogens. What improvements can be made in their approach? | |
| <p>Resources</p> <ul style="list-style-type: none"> - https://www.who.int/news-room/fact-sheets/detail/one-health#:~:text=One%20Health%20is%20an%20integrated,the%20number%20of%20malaria%20cases - https://www.sciencedirect.com/science/article/pii/S2666154322001752 - https://www.sciencedirect.com/science/article/abs/pii/S0167587706002716 | |
| Committee Session 2 – Urban Agriculture and Vertical Farming | |
| <p>Urban agriculture and vertical farming have emerged as vital solutions for enhancing food safety and sustainability in urban environments. Urban agriculture, involving growing crops and raising livestock within cities, reduces the carbon footprint of food transportation and fosters community resilience. Vertical farming, on the other hand, optimizes space by cultivating crops in stacked layers, using advanced technologies to provide controlled environments. Both approaches minimize pesticide use, conserve water, and enable year-round production, contributing significantly to a secure and sustainable food future.</p> | |
| <p>Guiding Questions:</p> <ol style="list-style-type: none"> 1. How does urban agriculture contribute to food security in densely populated urban areas, and what are the potential health benefits associated with increased access to fresh produce? 2. What are the key environmental sustainability challenges associated with urban agriculture and how can these challenges be balanced with the benefits it offers to global health and food systems? 3. Explore the potential of urban agriculture to reduce the environmental footprint of the food system, including issues related to food waste and resource use efficiency. How can urban agriculture contribute to a more sustainable global food system and lead to better public health outcomes? | |

Resources

- <https://link.springer.com/article/10.1007/s10460-013-9448-4>
- <https://www.sciencedirect.com/science/article/pii/S0169204621000189>
- <https://journals.sagepub.com/doi/abs/10.1177/095624789200400214>

Theme Guide Agenda for May 3rd, 2024**Committee Session 1 – Food Waste reduction, redistribution and recovery**

Efforts to reduce, recover, and redistribute food waste play a pivotal role in promoting food safety and sustainability. By minimizing food waste at various stages of the supply chain, from production to consumption, we conserve resources, reduce greenhouse gas emissions, and alleviate pressure on landfills. Recovering edible surplus and redistributing it to those in need addresses hunger and fosters community cohesion. This comprehensive approach not only ensures a more efficient use of resources but also contributes to a more resilient and sustainable food system.

Guiding Questions:

1. How does reducing food waste align with the United Nations Sustainable Development Goals, especially Goal 2 (Zero Hunger) and Goal 12 (Responsible Consumption and Production)? What are the global implications of achieving these goals?
2. How can surplus food recovery programs address the nutritional needs of vulnerable populations? What are the economical and environmental implications of redistributing food?
3. How does food waste exacerbate existing inequalities in health and well being?
4. Explore innovations in food preservation techniques, such as cold chain management and solar drying. How can these technologies reduce food waste and improve access to nutritious food globally?

Resources

- <https://www.sciencedirect.com/science/article/abs/pii/S0959652621000330>
- <https://ieeexplore.ieee.org/abstract/document/7580874>
- <https://www.sciencedirect.com/science/article/pii/S0959652619312156#sec5>

Committee Session 2 – Innovations in Sustainable Farming Techniques and Agriculture

Innovations in sustainable farming techniques have become indispensable for enhancing food sustainability, security, and safety. Practices like agroforestry, precision agriculture, and cover cropping optimize land use, conserve soil health, and minimize chemical inputs, thereby ensuring long-term food production. These techniques bolster food security by promoting diversified crops and reducing vulnerability to climate fluctuations. Additionally, by minimizing pesticide and fertilizer use, they bolster food safety, offering healthier options to consumers while safeguarding ecosystems and water resources for future generations.

Guiding Questions:

1. Explore innovative farming practices that enhance resilience to climate change, such as drought-tolerant crops and regenerative agriculture. How do these practices contribute to global health by addressing climate-related health risks?
2. Investigate sustainable practices in livestock farming, such as rotational grazing and antibiotic reduction. How can these innovations help mitigate the health risks associated with antibiotic resistance and zoonotic diseases on a global scale?
3. Discuss the use of genetic engineering techniques, like biofortification, to enhance the nutritional content of crops. How can these innovations address global health challenges related to malnutrition?

Resources

- https://link.springer.com/chapter/10.1007/978-94-007-1521-9_13
- <https://www.sciencedirect.com/science/article/abs/pii/S095965262100250X>
- <https://www.mdpi.com/2071-1050/12/22/9719> (really good article, focusing on Europe only though)