Forum: Economic and Social Council (ECOSOC)

Issue: Establishing policies and procedures for adequate and sustainable food chains

Chair: Aruzhan Zatayeva (Head Chair), Xun Chiang (Deputy Chair), Jaslene Ho (Deputy Chair)

Introduction

Over decades, human food production and food chains have greatly advanced technologically and technically, allowing a greater amount and variety of food to be produced and consumed around the world. However, with the rise of global challenges, the urgency for robust policies and procedures to establish adequate and sustainable food chains is becoming increasingly prevalent. The world grapples with challenges including climate change, population growth, and resource limitations, making the need for an improved structured framework for the current food systems more dire than ever. The sustained food chains necessitate a comprehensive approach that allows nutritional and adequate meals, to enhance and sustain the overall health and well-being of the people, whilst making the food chains long-lasting and eco-friendly.

Throughout history, many countries and organizations have created policies to tackle this complicated issue. These were in many forms, including food banks, improved infrastructure, education programs, dietary guidelines, and more recently, renewable energy adoption and conservation programs. These were vital in improving the food chain, but hunger, health concerns, unsustainable practices creating pollution, and depleting resources are still widespread to this day. This initiates thorough consideration and exploration of potential solutions to establish policies to effectively address the issues within food chains and improve them so that health, sustainability, and equity within the community are ensured as people forge for a greener future.

Definition of Key Terms

Food chain

Food chains are simple models of feeding relationships between organisms in an ecosystem. In this committee's issue, the focus is on food chains for humans, which includes the production and processes food goes through to be consumed by people.

Sustainability

Sustainability includes the maintenance of natural resources, and the ability to be preserved for continuously over time. Regarding food chain sustainability, it encompasses the conservation of food systems for a long period of time while considering its environmental effects.

Sustainable Development Goals (SDGs)

The Sustainable Development Goals aim to tackle a number of issues, including poverty, hunger, health and wellbeing, clean water, sustainable communities, responsible consumption and production, and climate action.

Food Security

Food security refers to the ability to access nutritious and safe food. Contrarily, food insecurity is the inability to meet one's basic needs due to food insufficiency.

Agriculture

Agriculture is significant to food production and environmental aspects, as it accounts for around twenty-five percent of the world's greenhouse gas emissions, and necessitates large amounts of fresh water and land while making up major parts of many countries' economies.

Biodiversity

Biodiversity refers to the variety of living organisms in specific habitats. This is a major part of sustainable food, as production often harms the habitats in which biodiversity thrives.

Greenhouse Gas (GHG)

Greenhouse gases trap heat in the atmosphere, raising the temperature of the Earth and contributing to global warming. Their emissions come from human activities, like using nonrenewable energy resources like fossil fuels. Systems in food production often account for much of these emissions, working against sustainable development.

Carbon Footprint

Carbon footprint is very relevant and related to greenhouse gases. It measures the amount of harmful gases produced, including carbon dioxide and methane.

Less Economically Developed Countries (LEDCs)

Countries with a lower GDP and level of living than MEDC (More Economically Developed Country) countries are included in the LEDC (Less Economically Developed Country) sector. LEDCs often do not have the resources to fundamentally change their food systems and therefore the sustainability and adequacy of them. This reveals a huge issue in malnutrition and hunger globally.

Climate Change

Climate change can disrupt food chains, reducing the availability and affordability of food for households in many communities. Especially given the world's reliance on agriculture, unpredictable and volatile climate can negatively impact sustainability and adequacy.

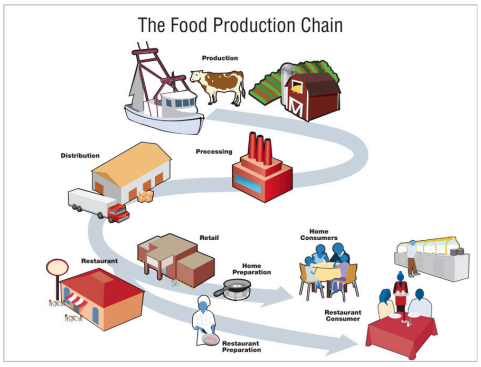
Background Information

Food chain

With the growing global population and innovative technology, more and more food is being produced, making it possible to feed more people and increase the variety of food people eat. Yet the food chain that food follows to arrive at people's tables is not without its problems. Throughout the process, the environment is often negatively impacted, food is unequally distributed and health concerns are raised. This emphasizes the importance of consolidating a sustainable and adequate food chain, especially coupled with the current global problems like climate change which may create challenges for farming because of changes of weather patterns and heat.

Food production & food industry

No matter where in the world, farming is almost always the first step to producing food. Farmers everywhere have to tend to crops and livestock which require water, sunlight, nutrients, and space to grow. The food is then harvested and processed in farms, factories, or corporations. This may include cleaning, sorting, milling grains, or butchering animals. The food then travels by trucks, trains, or ships to stores, restaurants, and markets. In this process, many factors lead to inadequate or unsustainable food, such as soil degradation, accidents and contamination, spoilage, and unsustainable practices causing pollution, and food waste. Also, note that deforestation often takes place to create space for agriculture and farming.



Food production chain

Food adequacy

Globally, food adequacy has improved in recent decades with increased food production, improved calorie availability, and reduced undernourishment. At the same time, persistent hunger, nutrient deficiencies and the unequal access people have to food have not yet been properly addressed. According to the World Health Organization (WHO), 828 million people worldwide experienced hunger in 2021, which not only signifies the number of people with a lack of access to an adequate food chain, but also shows how far the world has to go in achieving its 2030 target of eradicating hunger, food insecurity, and malnutrition in all of its manifestations. Many people around the world don't have access to safe food, especially in developing countries, even when there is enough food for everyone. This may be due to several factors, including limited access to clean water and sanitation, poor storage and handling practices, and lack of awareness about food safety. In many cases, people in poverty may be forced to eat food that is spoiled or contaminated, simply because they cannot afford anything else. The World Health Organization (WHO) estimates that unsafe food causes an estimated 420,000 deaths and 600 million cases of foodborne illness every year.

Many countries have established policies in an attempt to handle this issue which played an important role in improving food safety. These may include setting guidelines for food production, processing, and storage, and licensing and inspecting food businesses. However, it is difficult for governments to ensure that all food businesses are complying with food safety regulations, especially in countries with limited resources. Furthermore, new foodborne pathogens and contaminants are constantly emerging and can occur even with policies if people are unable to store food properly at home.

Food sustainability

Food sustainability is a complex issue with many factors to consider. It's about ensuring that the food system meets the needs of the present without compromising the ability of future generations to meet their own needs. This involves balancing environmental, social, and economic factors. Some key

issues of the current food system is how it's negatively impacting the environment through pollution, agricultural practices, and waste.

Pollution

Pollution is produced in many steps of food production. During farming, pesticides and fertilizers can run off into waterways, harming aquatic life and polluting drinking water. Food processing facilities emit pollutants into the air and water. It also generates solid waste, such as packaging and food scraps. Transporting food over long distances releases greenhouse gasses that contribute to climate change. The Food and Agriculture Organization of the United Nations (FAO) estimates that agriculture is responsible for about 12% of global greenhouse gas emissions while the food sector as a whole contributes about 30% of the total global emission.

Agricultural practices

Many agricultural and farming practices can be unsustainable, meaning they can harm the environment, deplete resources, and be difficult to maintain in the long term. Practices that harm the environment include excessive use of pesticides, which pollute water sources and harm wildlife, and deforestation for agriculture, which increases soil erosion, releases greenhouse gasses and harms ecosystems. Monocrop farming, which is estimated to cover between 70% and 80% of global agricultural land, is known to enable farmers to use machinery and increase efficiency, can also deplete soil nutrients, increase pest problems, and reduce biodiversity. Unsustainable agricultural practices can also include overusing groundwater, which leads to agriculture accounting for 70% of global water use.

Food waste

1.3 billion tons of food are wasted globally every year, worth around $1 trillion. This waste happens at all stages of the food system, from farms to households. In developed countries, much of the waste happens at stores and homes, while in developing countries, it often occurs at earlier stages like harvesting and storage. When food decomposes in landfills, it releases methane, a potent greenhouse gas 25 times more effective at trapping heat than carbon dioxide. This contributes to climate change, leading to extreme weather events and rising sea levels. Producing food requires a lot of water, land, and energy. Wasting food means squandering these precious resources, putting strain on our planet's already limited supplies.

Major Countries and Organizations Involved

World Health Organization (WHO)

The World Health Organization aims to promote health around the world, leading global efforts to expand universal health coverage. Regarding food safety, the WHO aims to improve the extent to which public health threats based on dangerous foods are prevented, detected, and responded to. The WHO Global Strategy for Food Safety 2022-2030 plans for the reduction of foodborne illnesses by guaranteeing safe and healthy food consumption everywhere regardless of location. Furthermore, it has published multiple reports on food security, including a manual published in October of 2022 titled “How together we can make the world’s most healthy and sustainable public food procurement” which surrounds procurement practices that promote healthy and sustainable diets.

Food and Agriculture Organization of the United Nations (FAO)

The FAO aims to accomplish food security for everyone, ensure standard access to high-quality food, and lead international endeavors to overcome hunger. The FAO established the Food Chain Crisis Management Framework (FCC), with key goals of preventing animal and plant diseases; addressing root problems such as chemical, bacteriologic, or epidemiological issues that occur in food production, transportation, or distribution, and; increasing collaboration through increasing political investment and financial assets. The FAO works with governments, partners, and regional networks through the FCC, while focusing on the Sustainable Development Goals of No Poverty, Zero Hunger, Good Health and Well-Being, Responsible Consumption and Production, and Life On Land.

Finland

As of 2022, the Global Food Security Index has ranked Finland as the most food-secure country out of a set of 113 countries, which reached an 83.7 overall score out of 100 based on the categories of affordability, availability, quality and safety, and sustainability and adaptation. Its key national objectives are achieving a net-zero climate target by 2035, with the agricultural sector given a 29% target for reduction of greenhouse gas emissions by 2035 from 2020, ceasing biodiversity loss by 2030 while maintaining food security, and promoting national nutrition guidelines and recommendations.

China

Given China’s large population, food chain adequacy and sustainability are a major part of its sustainability goals, especially with the fact that it is responsible for the world’s largest food system. As of a report from 2020, disease outbreaks exposed unsafe regulatory enforcements regarding food, and, in 2019, the food system accounted for 13.5% of its greenhouse gas emissions. The government has stressed the importance of food security and self-sufficiency. China has established a target to reach maximum carbon emissions before 2030 and reach carbon neutrality by 2060.

Canada

Canada's food system is focused on aquaculture, agriculture, and food processing and aims to provide safe and healthy food as well as maintain long-term security. Its agriculture and agri-food system generated around seven percent of Canada's gross domestic product in 2022, while employing around 2.3 million people. Canada has set goals to reduce, by thirty percent from 2020 data, emissions from fertilizer by 2030 and to support the Global Methane Pledge. It has also enacted a 2030 Emissions Reduction Plan which involves the discussion of sustainable and adequate food systems.

United States

As the United States ranks as the third most populated country, the issue of food chain sustainability and adequacy is essential to address for its population. The United States has the resources to ensure food security for all of its citizens and has numerous programs aiming to reduce hunger. However, nearly fourteen million households did not have an adequate amount of food to meet their needs in 2020. As of June 2022, the U.S. Department of Agriculture (USDA) declared a Food System Transformation framework, with objectives of increasing the resilience of the food supply chain which also reduces carbon emissions, creating a more equitable food system, and increasing the affordability and accessibility of nutritious food.

India

In 2022, India was the third-largest producer of greenhouse gas, with the agricultural sector making up eighteen percent of it. Its role as a major agricultural producer influences food chains both domestically and internationally. Also, in April of 2021, malnourishment was classified in over 205 thousand children under five years old based on the weight-for-age index. The 2023 Global Hunger Index placed India as the 111th country out of 125, indicating a serious level of hunger with a score of 28.7. Given India's rank as the most populated country in the world, this issue is very prevalent in the country. There have been actions taken to address this, such as a paper from the Department of Agriculture Cooperation and Farmers Welfare which suggests working towards the Sustainable Development Goals by implementing them into its policy.

Brazil

Brazil is a competitive agricultural exporter due to its abundance of land and natural resources. Its agriculture sector plays an important role in the country's economy as well as internationally as a leader in coffee, sugar cane, soybean, and orange production. Brazil has developed a variety of food systems to address different types of farming, with investments in science and technology, sustainability, family farming practices, and equitability in trade. However, data from the 2022 2nd National Survey on Food Insecurity in the Context of the COVID-19 Pandemic revealed that almost fifty-nine percent of the population were facing some extent of food insecurity.

Nigeria

From January to March of 2021, agriculture accounted for over twenty-two percent of its GDP. However, this sector faces challenges with land, irrigation, climate change, low-quality technology, high production costs, and limited access to markets. The Nigerian government has attempted to address these issues with numerous plans. For example, the Nigeria-Africa Trade and Investment Promotion Programme, the Agriculture Promotion Policy, and the Reducing Emission from Deforestation and Forest Degradation. There have been reports of predictions stating that Nigeria is not on track to reach the SDGs by 2030 due to its current trends and conditions.

European Union (EU)

The European Union has established strategies to work towards sustainable food systems in LEDCs, which include the general ideas of food chains having neutral or positive impacts on the environment, mitigating climate change, guaranteeing food security and public health, and maintaining affordability in food while preserving the economy. The EU has announced its support for the implementation of a sustainable agri-food system globally, reinforcing the Sustainable Development Goals. Other goals set are established in, for example, the EU Biodiversity Strategy and the EU Circular Economy Action Plan, which all work for the sustainable development of food.

Timeline of Events

Date	Description of Event
1986	Sustainable diets introduced, help address issues of malnutrition, and other health problems.
1996	At the World Food Summit, the Head of State and the Government reaffirmed, “the right of everyone to have safe and nutritious food, consistent with the right to adequate food and the fundamental right for everyone to be free of hunger.”
June, 2002	Reaffirmed the importance of abiding the human rights laws and “the FAO Council to establish an Intergovernmental Working Group to develop a set of Voluntary Guidelines to support Member States’ efforts to achieve the progressive realization of the right to adequate food in the context of national food security”
2015	The United Nations General Assembly adopted 17 sustainable development goals, in hopes to positively impact our world by 2030. SDG 2 aims to end

	hunger, achieve food security, improve nutrition, and promote sustainable agriculture.
2015	SDG 12 aims for Responsible Consumption and Production, directly relating to sustainability.
September 23, 2021	The UN Food System Summit has brought together all UN Member States and stakeholders worldwide, including thousands of youth, food producers, indigenous peoples, civil society, researchers, and the private sector to seek out improvements to be made for healthier and more sustainable food systems.

Relevant UN Resolutions and Treaties

- The Future We Want, 27 July 2012 (**A/RES/66/288**)
- Right To Food, 7 August 2014 (**A/69/275**)
- Transforming our world: the 2030 Agenda for Sustainable Development, 25 September 2015 (**A/RES/70/1**)
- International Treaty on Plant Genetic Resources for Food and Agriculture, 29 June 2004 (**43345**)
- State of global food insecurity (**A/76/L.55**)
- Agriculture development, food security and nutrition (**A/RES/76/222**)

Possible Solutions

Investing in social safety net programs. Social safety net programs for food assistance have been implemented in various forms throughout history. These programs, from governments or non-profit organizations, provide financial assistance or other forms of support to individuals and families experiencing food insecurity. This can help ensure everyone has access to adequate and nutritious food, even when facing challenges. This has a direct impact on the issue, it alleviates hunger and improves dietary intake for vulnerable populations, can help individuals and families break the cycle of poverty and improve their overall well-being and can even boost local food businesses and farmers markets since people will have more to spend on food. On the other hand though, funding social safety net programs can be expensive, especially for governments with limited resources. Long-term funding and political commitment are needed for sustained impact. In the past, the programs have indeed greatly improved food insecurity but have also brought unintended consequences like creating dependence on assistance and inefficiencies due to fraud, administrative costs, and targeting errors.

Incentives for farmers to adopt sustainable farming practices. Providing incentives for farmers to adopt sustainable farming practices is a widely proposed solution to address the challenges of inadequate and unsustainable food chains. These incentives can include financial assistance through grants, subsidies, or tax breaks to offset the initial costs of switching to sustainable methods, technical assistance through providing farmers with training, resources, and expertise to implement sustainable practices effectively, or even certification through offering premium prices or access to new markets for products grown using sustainable methods. Through these incentives, more sustainable practices can be implemented, which can not only reduce the environmental impact of agricultural farming, but also improve food quality and safety and make farms more resistant to climate change and other shocks. Unfortunately, designing and implementing effective incentive programs can be complex, expensive, and time-consuming. Ensuring that all farmers have access to and can benefit from incentive programs can be difficult.

Creating healthy and sustainable local food systems. These systems focus on sourcing food grown and produced close to where it's consumed which helps prioritize freshness, quality, sustainable practices, community engagement, and strengthening the local economy. Through local food systems, people can have greater control over food sources and reduce dependence on long-distance transportation, which can be vulnerable to disruptions. Moreover, local production greatly lowers transportation emissions and encourages sustainable farming practices that benefit the environment. Creating these production systems, though, requires investments in processing facilities, distribution networks, and cold storage infrastructure. A limitation of this solution includes how local production may not be able to meet year-round demand for all food items, especially in regions with limited growing seasons. Scaling up local production to meet broader needs can be challenging, requiring investment and support systems and Not everyone has equal access to affordable, fresh local food, particularly in low-income communities.

International development assistance. International development assistance (IDA) can play a crucial role in supporting developing countries to establish policies and procedures for adequate and sustainable food chains. This can be achieved through various forms, including financial aid, technical assistance, and technology transfers. To implement this solution, identifying the specific needs and challenges faced by each developing country will be important. It will then involve collaborations across international development agencies, national governments, non-governmental organizations (NGOs) and the private sector to equip local communities and institutions with the knowledge and skills needed to manage and sustain food systems and regularly assess progress and impact. This can help developing countries achieve food security and reduce reliance on food imports, encourage practices that enhance the nutritional value of food produced, and protect soil health, water resources, and biodiversity.

However, development assistance may create difficulties in preventing misuse of funds and avoiding dependence on aid.

Questions for Further Research

Food chains can be considered on a global, regional, national or local scale, how do the challenges and solutions differ in each scale?

How can it be ensured that everyone has access to safe, nutritious food, regardless of their income or location?

How can food systems be created that are both sustainable and profitable for farmers and businesses?

What role should governments play in regulating and supporting sustainable food chains?

What new technologies and practices can help us achieve our goals for a sustainable food system?

How can trade policies that promote sustainable food production and fair labor practices be ensured?

How will climate change affect food production, distribution, and consumption?

Bibliography

"Official Document System of the United Nations." Un.org, 2024, documents.un.org/prod/ods.nsf/home.xsp. Accessed 28 Jan. 2024.

"About WHO." Who.int, 2024, **www.who.int/about**. Accessed 28 Jan. 2024.

NAO), Obesity. "How Together We Can Make the World's Most Healthy and Sustainable Public Food Procurement." Who.int, World Health Organization, 5 Oct. 2022, www.who.int/europe/publications/i/item/WHO-EURO-2022-6178-45943-66333. Accessed 28 Jan. 2024.

World. "Food Safety." Who.int, World Health Organization: WHO, 16 May 2019, **www.who.int/health-topics/food-safety#tab=tab_1**. Accessed 28 Jan. 2024.

"About FAO | FAO | Food and Agriculture Organization of the United Nations." AboutFAO, 2020, **www.fao.org/about/about-fao/en/**. Accessed 28 Jan. 2024.

"Food Chain Crisis | Policy Support and Governance Gateway | Food and Agriculture Organization of the United Nations | Policy Support and Governance | Food and Agriculture Organization of the United

Nations." Fao.org, 2023, www.fao.org/policy-support/policy-themes/food-chain-crisis/en/. Accessed 28 Jan. 2024.

"UN World Food Programme (WFP)." Wfp.org, 2024, www.wfp.org/. Accessed 28 Jan. 2024.

Water. "Food System." Food & Water Watch, 16 Mar. 2023, **www.foodandwaterwatch.org/issues/food-system/**. Accessed 28 Jan. 2024.

"Food." World Resources Institute, 2024, www.wri.org/food. Accessed 28 Jan. 2024.

Global Food Security Index (GFSI. "Global Food Security Index (GFSI)." Economist.com, 2022, impact.economist.com/sustainability/project/food-security-index/. Accessed 28 Jan. 2024.

"Finland - Food, Agriculture, Biodiversity, Land-Use, and Energy (FABLE) Consortium." Fableconsortium.org, 2020, fableconsortium.org/finland/. Accessed 28 Jan. 2024.

You, Xiaoying. "Where China's Food Policies and Climate Goals Meet." China Dialogue, 26 Apr. 2023, chinadialogue.net/en/food/where-chinas-food-policies-and-climate-goals-meet/. Accessed 28 Jan. 2024.

"SCMP." South China Morning Post, 4 Dec. 2023, www.scmp.com/economy/china-economy/article/3243798/chinas-2030-carbon-reduction-goal-spare-food-industry-reforms-security-takes-priority. Accessed 28 Jan. 2024.

"Overview of Canada's Agriculture and Agri-Food Sector." Agriculture and Agri-Food Canada, Government of Canada, 6 July 2023, www.agriculture.canada.ca/en/sector/overview.

Government of Canada, Natural Sciences and Engineering Research Council of Canada. "NSERC - NSERC-SSHRC Sustainable Agriculture Research Initiative." Natural Sciences and Engineering Research Council of Canada (NSERC), 20 Mar. 2023, www.nserc-crsng.gc.ca/Innovate-Innover/SARI-ISRAD/index_eng.asp.

Jarsulic, Marc. "The United States Can End Hunger and Food Insecurity for Millions of People." Center for American Progress, 4 Nov. 2022, www.americanprogress.org/article/the-united-states-can-end-hunger-and-food-insecurity-for-millions-of-people/.

"USDA Announces Framework for Shoring up the Food Supply Chain and Transforming the Food System to Be Fairer, More Competitive, More Resilient." USDA, 1 June 2022, www.usda.gov/media/press-releases/2022/06/01/usda-announces-framework-shoring-food-supply-chain-and-transforming.

"India." Global Hunger Index (GHI), 13 Oct. 2023, www.globalhungerindex.org/india.html.

Athare, Tushar Ramchandra. “India consists of multiple food systems with socioeconomic and environmental variations.” PloS, National Library of Medicine, 26 Aug. 2022, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9416984/.

Minhas, A. “India: Malnourished Children Based on Weight-for-Age Index by Area 2021.” Statista, 12 July 2023, www.statista.com/statistics/1317106/india-malnourished-children-based-on-weight-for-age-index-by-area/.

Ozbun, T. “Agriculture in Brazil.” Statista, 10 Jan. 2024, www.statista.com/topics/5838/agriculture-in-brazil/#topicOverview.

“Nigeria at a Glance.” FAO in Nigeria | Food and Agriculture Organization of the United Nations, www.fao.org/nigeria/fao-in-nigeria/nigeria-at-a-glance/en/. Accessed 28 Jan. 2024.

“Achieving Sustainable Food Systems in a Global Crisis: Nigeria.” IISD, Sept. 2022, www.iisd.org/system/files/2022-09/sustainable-food-systems-global-crisis-nigeria.pdf.

“EU Policies on ‘Sustainable Food Systems.’” Knowledge For Policy, European Commission, 5 Dec. 2023, www.knowledge4policy.ec.europa.eu/global-food-nutrition-security/topic/sustainable-food-systems/navigation-page/eu-action-sustainable-food-systems/eu-policies-sustainable-food-systems_en.

“General Assembly Adopts Resolution Addressing Global Food Crisis | UN Press.” United Nations, United Nations, 23 May 2022, www.press.un.org/en/2022/ga12421.doc.htm.

“Transforming Our World: The 2030 Agenda for Sustainable Development | Department of Economic and Social Affairs.” United Nations, United Nations, www.sdgs.un.org/2030agenda. Accessed 28 Jan. 2024.

Ritchie, Hannah, et al. “Environmental Impacts of Food Production.” Our World in Data, 2 Dec. 2022, www.ourworldindata.org/environmental-impacts-of-food#:~:text=It%20needs%20water%20as%20input,to%20its%20enormous%20land%20use.

Nations, United. “The Summit | United Nations.” United Nations, United Nations, 2021, www.un.org/en/food-systems-summit/summit. Accessed 28 Jan. 2024.