2026-2027
Walking Softer Education
3 - Sustainable Food Systems

Sustainable Food Systems

Learning Outcomes

- Define food systems
- Examine different types of food systems, and the impact of food systems on the environment
- Consider personal interactions with food systems, and the possibility of implementing a food systems based project in our community

Agenda

- Define a “food system” and learn the different components
- Learn how food waste impacts the environment
- Write a story about your food

Defining a Food System

What is a “system”?

- A group of interrelated and interdependent variables that function as a unified whole. Because systems are **interdependent**, a change in one variable affects every other variable in the system, directly or indirectly.
- Some examples of systems are the interstate highway system, the human body, and the food system.

What is a “food system”?

- A food system is how all people get fed in any number of different ways.
- It includes the environment where the food was grown, the workers who produced the food, the processing, packaging, and transportation of the food, all the people eating the food, and where the food goes once it’s disposed of.
- The food system itself interacts with other systems, such as ecosystems, transportation systems, marketing systems, and others.

Components of the Food System

Match the food system component with its definition.

Production	Helps protect food from spoilage and allows for easy transport and purchasing. Required inputs may include paper, plastic, cardboard, aluminum, glass, ink, and machinery.
Harvest	The collection of raw foods (fruits, vegetables, grains, meat, fish, milk, etc.) from its source. Required inputs may include labor, fuel, machinery and equipment, packing materials, etc.
Processing	Purchasing or eating food. The main input for this step is monetary since the consumers pay for the food item, but inputs also include labor, such as supermarket or restaurant employees.
Packaging	The altering of the structure or character of food, such as turning potatoes into French fries. Minimally processed foods typically maintain their nutritional value, while ultra-processed foods may have decreased nutritional value. Inputs vary depending on the level of processing and can include labor, machinery, water, fuel, sugar, salt, and other preservatives.
Retailing	The process of determining consumer wants or needs and making products available for public purchase at markets, restaurants, etc. Required inputs may include labor, physical and digital advertising, packaging, and transportation.
Distribution	The activities taking place on land and sea that grow and produce our food. Required inputs may include labor, soil, water, sunlight, seeds, labor, machinery and equipment, fertilizer, pesticides, etc.
Consumption	What we do with anything left over after eating, including throwing things in the garbage, composting, or recycling. Required Inputs may include land (for landfills, composting, or recycling facilities), transportation, labor, and machines.
Disposal	The process of dividing up and delivering food to various places, such as supermarkets, farmers' markets, or processing sites, where it is redistributed after processing. Required inputs may include fuel and labor.

Different Kinds of Food Systems

- **Global** - Products may come from anywhere in the world, from international or national distributors. Food in the global food system travels, on average, more than 1,000 miles from production to consumption.
- **Regional** - Serves a state or other region. Networks of farmers supply regional retailers and wholesale distributors.
- **Local** - Food is produced in a small area and may be sold directly to local consumers or institutions.
- **Community** - Based in a local area and works to integrate all aspects of the food system to ensure economic, social, and environmental sustainability.

Discussion

- If you could choose the kind of food system your food came from (global, regional, local, community), which one would you choose and why?

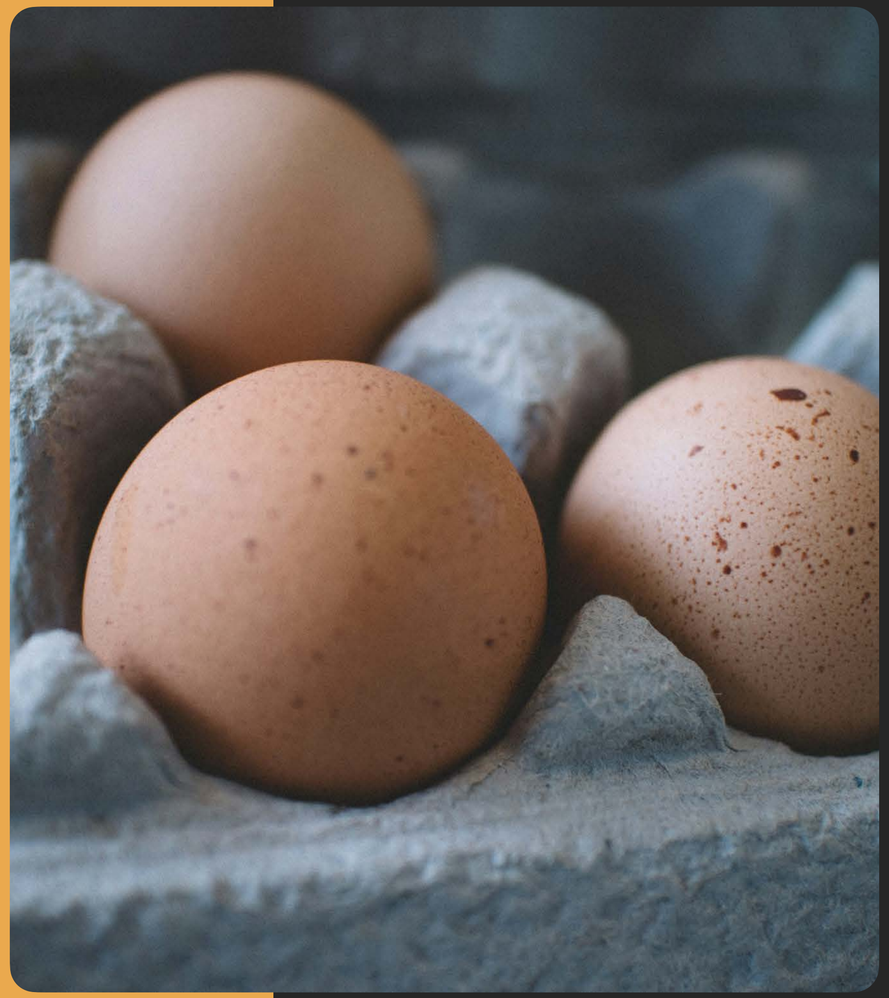
Food Systems and the Environment

- Food is **lost** or **wasted** in all parts of the food system: on farms, during harvest, processing, storage, distribution, retailing, and consumption.
  - *Food “loss” occurs before the food reaches the consumer as a result of issues during production, storage, processing, and distribution.*
  - *Food “waste” refers to food that is perfectly good to consume but gets discarded at the retail or consumption phases.*
- In the US, about 40% of all food produced goes uneaten, and about 90% of that uneaten food ends up in a landfill.
- Land-use change for food production is one of the significant environmental issues. 44% of the planet's habitable land is used for agriculture.
- 25-30% of ice-free land is dedicated to livestock and growing the food livestock consumes. This contributes to biodiversity loss and climate change by the destruction of native ecosystems and the carbon they sequester.
- Cattle, pigs, goats, and sheep produce methane during their digestive process. Methane is a potent greenhouse gas that contributes to climate change.
- About 70% of water consumed worldwide is for agriculture, either directly (watering crops we eat) or indirectly (water needed to keep, feed, breed, and raise livestock).
- Food packaging is mainly made of single-use plastics and often pollutes oceans and waterways.

Story Time!

Fill in the blanks to come up with a story about a food item of your choice:

Madlib Script: Hi, I am ___***(food item)***____, and I am made up of __***(#)***__ ingredients. The ingredients were produced in ___***(place)***____, and __***(place)***__, and __***(place)***___. Before the land where I was produced was agricultural land, it used to be ___***(type of ecosystem)***___, and ___***(plants, animals, and human culture)***___ used to thrive here, but now it's just ___***(ingredient crop)***___ fields as far as the eye can see! While being produced, farmers named Farmer __***(name)***__ and Farmer ___***(name)***___ made sure my ingredients were nice and juicy by ___***(list a farming technique i.e. using fertilizers, using organic compost, plowing fields, etc.)***___. It was hard work though, and Farmer ___***(name)***___ developed a health condition called ___***(health condition)***___. After all that work was done at the farm, I was sent to ___***(place)***___ to be processed. I traveled __***(#)***__ miles, mostly by __***(mode of transportation)***__. Part of my ingredients weren't properly packaged during the trip, so they got thrown away in ___***(place)***___. But the rest of my ingredients went to ___***(place)***___ after being processed. Once my ingredients got there, I got sent to ___***(grocery store)***___. I sat there with a bunch of other ___***(food item)***___ for a while, and some of us got thrown away by ___***(name)***___ because we weren't pretty enough or didn't get purchased fast enough. Luckily, I was one of the pretty ones, so you picked me! Now you get to eat me, and once you're done ___***(food waste items)***___ will be left as waste. And you'll throw it away in __***(type of waste receptacle)***__. Oh, what a life I have lived, the things you see as a __***(food item from the beginning)***__!



Thinking back

- How do you interact with the food system every day?
- How can we make our interactions with the food system more sustainable?

Additional Resources

- Food Justice: Fixing our broken food system: Oxfam America - Hunger is not about not having enough food. It's about inequalities in access to resources to grow food; it's about power and distribution.
- The Hunt by Sanjay Rawal: Gather (2020) This excerpt, "The Hunt," by Sanjay Rawal, follows two characters—Chef Nephi Craig of the White Mountain Apache Nation and master forager Twila Cassadore of the San Carlos Apache Nation—as they work with Indigenous foodways to promote processes of healing and recovery from historical trauma.
- Farm to School: a project of Esperanza Community Farms. Thanks Inspira Studios & Center For Ecoliteracy: Esperanza Community Farms - Farm to School is a project that tells the story of students partnering with Esperanza Community Farms to bring organic produce to their cafeterias.
- Palm Oil Scorecard: World Wildlife Fund - The 2024 Palm Oil Buyers Scorecard by WWF reveals a sobering truth: palm oil buyers are yet to step up to the challenge, leaving the fate of our planet hanging in the balance.

Contributors

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