

SKILLS EXPLORATION DAYS DESIGN CHALLENGE

Sustainable Food Systems Solutions



Overview

Do you ever look in your fridge and wonder where your food comes from? Every piece of food has a story to tell. Corn that starts its life in Argentina may travel thousands of miles away to the U.K. to be made into breakfast cereal which might even end up in your pantry.¹ Grapes and strawberries grown in Peru are shipped across continents to fill grocery store shelves in Canada year-round. Those carrots on your plate might have come from the United States or maybe from a local farmer down the road.

All of the food we eat has its own journey to make within the food system. “But profound changes in the way food is grown, processed, distributed, consumed, and wasted over the last several decades have led to increasing threats to a future of food that is sustainable, equitable, and secure. Today, food systems are at the center of many of the critical challenges we face.”²

Design Rationale

Food is essential to our lives. It not only keeps us healthy and fuels us to do the things we love, but it is central to our cultures, families, and communities. With our world population projected to reach 9.8 billion in 2050³, we need to be creative about how we’re going to produce enough food for people around the globe and create a future of food that is good for people and the planet.

Unfortunately, from growing to consumption, our current food systems and food practices are unsustainable to meet the needs of our changing world. “Each part of a food item’s journey produces greenhouse gases — whether it’s the carbon emissions from the forests that are mowed down to grow crops, or the methane gas released from livestock such as cows and goats. There’s also the exhaust from the trucks, trains, ships and planes that transport food across borders, and the fluorinated gases that seep from the refrigerators that keep food cool and fresh until it’s purchased.”¹ That’s not all! We as Canadians waste 40% of the food we produce, costing us \$31 billion yearly and further contributing to greenhouse gas emissions.⁴ Food systems are not only major contributors to climate change, but they are also severely impacted by it. Extreme weather events caused by global warming such as floods, droughts, and fires all affect how and where we can produce food.⁵

Climate change isn’t the only negative impact our food systems have on our planet. Over the past few decades, the goal of producing more food at a lower cost has resulted in a loss of biodiversity, a greater impact on land and water usage, as well as a heavy reliance on fertilizers and pesticides.⁶ As a result, our food and our soil is less nutritious making future growing more challenging.

So here’s the big question: How do we create a better food future for everyone, everywhere?⁷

Problem Scenario

It’s time for us to lead the charge in a food systems revolution! Implementing the principles of sustainable development, your team has been selected to look at a food systems issue either locally or globally. The issue that you choose can exist in any area of the food system (farming/production, processing, packaging, transportation, consumption, or waste). Using your powers of creativity and innovation, your team must choose an issue that resonates with you and develop a prototype to address the concerns raised by the issue. Your prototype must ensure environmental sustainability and contribute to a food future that is healthy for people and the planet.

Success Determinants

Success will be determined by the degree to which your design solution:

- Addresses the design challenge
- Addresses an identifiable need
- Is original** (not an exact copy of something that already exists) **and as realistic as possible.**
- Utilizes the tools and materials provided in a creative and safe manner
- Aligns to the design motto: *Make it smaller, stronger, do more, be easier to use, be cheaper.*

***Prototype:** a model that illustrates the functionality of an idea or design. It may be life sized or scaled to a model that fits in your hand.

***Food system:** all of the steps a food goes through from being grown to being consumed, including packaging, transporting, and selling⁸

***Sustainability:** the ability of a system to last or endure; meeting current human needs without endangering our descendants⁸

SUGGESTED RESOURCES TO GET YOU STARTED

Food Systems Information:

- Farming First: Innovations for Sustainable Food Systems: <https://farmingfirst.org/food-systems#home>
- Food Systems Infographic: https://www.foodspan.org/_pdf/lesson-plan/JohnHopkins_info_0714.pdf
- How Much Are Our Food Systems Responsible for Climate Change?¹:
<https://www.weforum.org/agenda/2021/04/study-food-systems-drive-an-estimated-one-third-of-greenhouse-gas-emissions>
- Food Secure Canada: Five Big Ideas for a Better Food System: <https://foodsecurecanada.org/policy-advocacy/five-big-ideas-better-food-system>
- Food and Agriculture Graphic Connected to 17 Global Goals:
https://www.fao.org/fileadmin/user_upload/codexalimentarius/photo-archive/Infographics/SDG-Wheel.jpg
- Our Global Food System is the Primary Driver of Biodiversity Loss⁶:<https://www.unep.org/news-and-stories/press-release/our-global-food-system-primary-driver-biodiversity-loss>

Videos:

- What is Sustainable Development? <https://vimeo.com/144354623>
- What is the Environmental Impact of Feeding the World?:<https://www.calacademy.org/educators/what-is-the-environmental-impact-of-feeding-the-world>
- Food Sustainability Basics: <https://video.link/w/uPHzd>

Food Systems Innovations:

- The Futuristic Farms That Will Feed the World: <https://video.link/w/8NHzd>
- Top 7 Sustainable Food Innovations from 2020: <https://www.springwise.com/innovation-snapshot/sustainable-food-business-ideas-2020>
- Self Sustainable Zero Waste Productive Home in Melbourne Demonstrates Future:
<https://video.link/w/uOHzd>

References:

[Global Alliance for the Future of Food ²](#)

[Support for Sustainable Food Systems⁴:](#)

[United Nations Department of Economic and Social Affairs³](#)

[Climate Change and Food Systems⁵](#)

[Exploring the Impacts of Feeding the World⁸](#)