

Nourishing the Future: Sustainable Food Systems
for Nutrition and Dietetic Students

Module 1: Introduction to Sustainable Food Systems

Practice and Resources Booklet



JOHNS HOPKINS
CENTER *for* A LIVABLE FUTURE

FOOD + PLANET

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Case Study 1: FEAST

Background

[FEAST](#) was established in 2013. Its mission is to promote wellness and enrich lives through the power of healthy foods and human connection. Programs address wellness, family feeding, and perinatal support through education, support, and community engagement.

Assignment

Read the FEAST [case study](#). Also available on the Food + Planet [homepage](#).

Discussion Questions

1. How can human connection and relationships—such as the FEAST program’s approach of empowering caregivers—be used by you or your institution to encourage healthy and sustainable behavior changes?
2. FEAST’s program strives to support whole people, where people feel safe, supported, and connected to their bodies and themselves. In your role(s), how can you adopt a whole person approach to create healthy individuals and communities?

Case Study 2: ReFED

Background

[ReFED](#), with World Wildlife Fund, established the [U.S. Food Waste Pact](#), which is a national precompetitive collaboration between businesses across the food chain to share data and best practices on reducing wasted food.

Assignment

Read the ReFED [case study](#). Also available on the Food + Planet [homepage](#).

Discussion Questions

1. Dietitians typically address what we do eat rather than what we don't. Considering where you work in the food supply chain, how can you help broaden our approach among colleagues and consumers?
2. How might you compel the decision-making leaders in your institution to become signatories of the U.S. Food Waste Pact? What kind of appeals would they be most receptive to?

Supplemental Activity 1: Consumer Food Waste

Assignment

1. Visit [ReFED](#).
2. Track your own food waste for three days (two weekdays, one weekend day), recording the weight of each food group, if possible.
3. Make a pie chart of your food waste by food category.
4. Review the recommendations for reducing wasted food and evaluate them on how easy they are for a consumer to implement in your community.

Supplemental Activity 2: Global Systems Thinking

Assignment

1. Review the [Food Systems Dashboard](#).
2. Choose a country from the Global Dashboard map (under Global Data) or a region from the available countries listed (under Country Data).
3. Review one to three indicators from each of the main categories: Drivers, Food Supply Chain, Food Environments, Individual, Cross-Cutting Issues (using most current data available).
4. Select a few nutrition-related outcomes.
5. Write a description of the food system in your selected country based on the identified indicators and outcomes. How does a systems perspective inform your understanding of community and individual nutrition status?

Learn More

Sustainable Diets

- [Empowering Nutrition Professionals to Advance Sustainable Food Systems](#) (Food + Planet, 2021)
- [Food Systems Dashboard](#) (GAIN, The Columbia Climate School, Cornell University, and FAO, 2026)
- [Key Recommendation for Improving Nutrition Through Agriculture and Food Systems](#) (FAO, 2015)
- [One Blue Dot](#) (The Association of UK Dietitians, 2026)
- [Sustainable Food Systems \(SFS\) Toolkit](#) (International Confederation of Dietetic Associations, 2026)
- [Sustainable Healthy Diets Guiding Principles](#) (FAO & WHO, 2019)
 - See pages 10–11.

Food Waste

- [Food Forward](#) (Food Forward Inc., 2026)
- [Insights Engine](#) (ReFED, 2026)
- [Just Eat It: A Food Waste Story](#) (1091 Pictures, 2020)
- [Key Action Area: How Does Reshaping Consumer Environments Help Reduce Food Waste?](#) (ReFED, 2026)

Glossary

Biodiversity. The variability among living organisms from all sources, including terrestrial and aquatic ecosystems and the ecological complexes of which they are a part. ([Millennium Ecosystem Assessment, 2005](#))

Ecological health. The state of an ecosystem's balance and functionality, where the interactions between living organisms and their environment are sustainable and resilient, thereby able to better withstand disturbances and continue to provide essential services to all forms of life. ([The Centre for Conscious Design](#))

Eutrophication. The overabundance of nutrients in a body of water that results in harmful algal blooms, fish kills, and in some cases ecosystem collapse. ([National Centers for Coastal Ocean Science, 2007](#))

Food system. The entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption, and disposal of food products that originate from agriculture, forestry, or fisheries, and parts of the broader economic, societal, and natural environments in which they are embedded. ([FAO, 2018](#))

Greenhouse gas emissions (GHGe). The release of gases into the environment that absorb longer wavelength radiation and increase atmospheric temperatures. ([Encyclopedia of Physical Science and Technology, 2003](#))

Planetary health. The health of human civilizations and the state of natural systems on which they depend. ([The Lancet Planetary Health, 2017](#))

Reductionism. The concept that complex systems can be understood entirely in terms of their simpler, constituent parts. ([Popan, 2024](#))

Supply chain. A linked set of resources and processes between multiple tiers of developers that begins with the sourcing of products and services and extends through the design, development, manufacturing, processing, handling, and delivery of products and services to the acquirer. ([Ross & Copan, 2018](#))

Systems thinking. A framework for seeing interrelationships rather than things; for seeing “patterns of change” rather than static “snapshots.” (Senge, 2006)

Value chain. The full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use. ([Kaplinsky & Morris](#))

Wasted food. The food that was not used for its intended purpose and is managed in a variety of ways, such as donation to feed people, creation of animal feed, composting, anaerobic digestion, or sending to landfills or combustion facilities. ([U.S. EPA, 2025](#))

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Appendix A: Guiding Principles for Sustainable Healthy Diets

Food and Agriculture Organization of the United Nations & World Health Organization. (2019). *Sustainable healthy diets: Guiding principles*. Guiding principles for sustainable healthy diets [Infographic], pages 10–11.
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SUSTAINABLE HEALTHY DIETS...

REGARDING THE HEALTH ASPECT

1

...start early in life with early initiation of breastfeeding, exclusive breastfeeding until six months of age, and continued breastfeeding until two years and beyond, combined with appropriate complementary feeding.

2

... are based on a great variety of unprocessed or minimally processed foods, balanced across food groups, while restricting highly processed food and drink products.¹⁰

8

... contain minimal levels, or none if possible, of pathogens, toxins and other agents that can cause foodborne disease.

7

... are consistent with WHO guidelines to reduce the risk of diet-related NCDs, and ensure health and wellbeing for the general population.¹²

REGARDING ENVIRONMENTAL IMPACT

9

... maintain greenhouse gas emissions, water and land use, nitrogen and phosphorus application and chemical pollution within set targets.

10

... preserve biodiversity, including that of crops, livestock, forest-derived foods and aquatic genetic resources, and avoid overfishing and overhunting.

REGARDING SOCIOCULTURAL ASPECTS

16

... avoid adverse gender-related impacts, especially with regard to time allocation (e.g. for buying and preparing food, water and fuel acquisition).

15

... are accessible and desirable.

¹⁰ Food processing can be beneficial for the promotion of high quality diets; it can make food more available as well as safer. However, Some forms of processing can lead to very high densities of salt, added sugar and saturated fats and these products, when consumed in high amounts, can undermine diet quality. (Global Panel on Agriculture and Food Systems for Nutrition. 2016. Food systems and diets: Facing the challenges of the 21st century. London, UK. <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll5/id/5516/filename/5517.pdf>)

¹¹ Potatoes, sweet potatoes, cassava and other starchy roots are not classified as fruits or vegetables.

GUIDING PRINCIPLES FOR SUSTAINABLE HEALTHY DIETS

3 ... include wholegrains, legumes, nuts and an abundance and variety of fruits and vegetables.¹²

4 ... can include moderate amounts of eggs, dairy, poultry and fish; and small amounts of red meat.

6 ... are adequate (i.e. reaching but not exceeding needs) in energy and nutrients for growth and development, and to meet the needs for an active and healthy life across the lifecycle.

5 ... include safe and clean drinking water as the fluid of choice.

11 ...minimize the use of antibiotics and hormones in food production.

12 ... minimize the use of plastics and derivatives in food packaging.

14 ... are built on and respect local culture, culinary practices, knowledge and consumption patterns, and values on the way food is sourced, produced and consumed.

13 ...reduce food loss and waste.

¹² They include up to 30-35 percent of total energy intake from fats, with a shift in fat consumption away from saturated fats to unsaturated fats and towards the elimination of industrial trans fats; less than 10 percent of total energy intake from free sugars (possibly less than 5 percent) and not more than 5 g per day of salt (to be iodized). WHO. 2018. Healthy diet. WHO fact sheet No. 394 (updated August 2018). Geneva, World Health Organization, 2018. https://www.who.int/nutrition/publications/nutrientrequirements/healthydiet_factsheet/en/