# Food economics: Teaching for the future of agriculture, nutrition, and health

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## Abstract

This article introduces "Food Economics: Agriculture, Nutrition, and Health," a new open access textbook that helps equip students with the skills needed to analyze complex food systems issues and contribute to a sustainable, equitable, and healthy future of food. Recognizing that students enter courses with pre-existing beliefs about food and face barriers to sustained engagement in coursework, the textbook uses analytical diagrams, data visualizations, and real-world applications to spark and keep interest. Food economics education plays an important role for cultivating a skilled workforce, promoting evidence-based policy, and bridging cultural and disciplinary divides to address food system problems.



**JEL Codes:** A20, Q18, I18, I38

*Why food economics?*

This paper introduces a new open access textbook entitled *Food Economics: Agriculture, Nutrition and Health* (Masters & Finaret, 2024). The book aims to provide a comprehensive single-volume resource for advanced undergraduates, graduate students, food system professionals, and the general reader, offering instructors a harmonized approach to new or revised courses for students who might have no prior coursework in economics and no specialist knowledge.

Learning about economics through food, and learning about food through the lens of economics, helps students make sense of the world and gain professional skills by focusing on a universal human need and their own everyday experiences. The first half of the book offers a gentle introduction to economic principles and microeconomics, using food-related examples to show how standard analytical diagrams are used by economists to help explain, predict, and evaluate individual choices and societal outcomes. The second half introduces macroeconomics, then uses charts and tables with links to authoritative data sources on agriculture and consumer spending to describe trends and variation in U.S. and global food systems.

The new *Food Economics* text provides an accessible and friendly guide that can be skimmed for initial insights or used more intensively for in-depth analysis of more advanced concepts. Accompanying slides, weekly exercises, exams and course project instructions aim to help instructors use the book in a variety of settings. Having the book published as open access reduces transaction costs, allowing students to read, bookmark or annotate electronic copies on any device, or buy a paperback copy if they prefer. Instructors can easily incorporate links to specific pages or individual chapters in their class materials, allowing the book to be used for a variety of courses in agribusiness and food marketing, agriculture and natural resource

management, or food systems, sustainability, nutrition and health. The book covers both individual or business decisions and government policy choices, and has an even split between U.S. and international examples to interest students in all regions of the world.

Economics as defined in the book concerns how individual people, firms, and governments choose from their available options, and how interactions among them give rise to societal outcomes. The book's topic is the causes and consequences of food-related choices, from consumer behavior to farm production, agribusiness decisions, and retail marketing as well as policy and program choices made by governments, international organizations and civil society. The book teaches economic principles using only two-dimensional diagrams with consistent notation and concrete examples that can be understood visually, without algebra or calculus. In these diagrams, predicted outcomes for individual choices are shown as a point of tangency between a line and a curve, representing the logical consequences of people having chosen whichever of their available options is the best (or least bad) for them. In contrast, societal outcomes are shown as a point of intersection between two lines, representing the result of interactions between people who have learned from experience and are making forward-looking predictions about how others will respond.

Food choices are deeply personal and familiar for our students. All of the world's 8 billion people make countless decisions every day about what to eat, and many people think a lot about the health and environmental impacts or cultural significance of their food choices. But the share of university students with direct experience in agriculture and food production has fallen for decades, and is often a small minority. Globally, an estimated 3.8 billion live in households supported by farming or employment in the agrifood sector (Davis et al., 2023). When we ask our students about their own family's experience, many can describe where and when their

parents or grandparents left farming, and how their own contact with agriculture is through farms that are located in or near big towns and cities. Most students' understanding of agriculture comes primarily from social media and the news, which often provide an unrepresentative picture. Studying food economics in the more structured approach of the new textbook offers students a logical framework with which to interpret national and global data. The result can be a challenging but enjoyable process of discovery, especially when applied to questions of personal and professional importance relating to agriculture, food, nutrition and health.

In this paper we introduce *Food Economics* as a resource for instructors, students and the public. We first summarize the book's overall framing and purpose, then describe how the book addresses individual food choices, market dynamics, the role of government, sustainability and equity, the psychology of food decisions, macroeconomic forces impacting agriculture and food spending, international trade and value chains, and the drivers of technological and institutional change over time.

*Food as a catalyst for connection and understanding*

As a universal human experience, food provides common ground and a common topic of interest which facilitates meaningful education in contrast to rote learning (Galt et al., 2013). Sociologists have long noted how food can bring people together (Dunbar 2017), while also differentiating communities based on shared dietary practices and approaches to food production. Similarities and differences give rise to a large literature about agricultural transformation and dietary transition, recently surveyed by Masters, Finaret and Block (2022). The new *Food Economics* book draws on empirical findings from this large literature to teach economics in an

inclusive manner designed to help bridge the mutual misunderstanding and potential disagreement between individuals and groups about dietary choices, culinary methods, taste, or methods of farming. These topics can spark curiosity, ignite passion, and provide a transformative educational experience as well as practical skills for a variety of career paths.

To encourage productive conversations in a wide range of settings, the book aims to avoid jargon and use plain English to describe our analytical diagrams and charts of data, intending to help students see causal mechanisms and empirical evidence in light of their own experiences anywhere in the world. Students enter courses about the food system with a lifetime of experience and deeply ingrained beliefs about food, but the stories that students often have in mind are often based on unrepresentative samples and misunderstandings about agriculture and the food system. By focusing on the logic of economics, and then zooming out to show the widest possible range of data, the book aims to help readers leverage their pre-existing ideas to an expanded understanding.

Some of those pre-existing ideas are a kind of optical illusion created by a student's perspective on the food system. For example, most urban students' personal experience of the food system occurs through interaction with large corporations that buy ingredients from farmers far away, or with small direct-to-consumer farms that emphasize their ties to the local community and benefits for the local environment. These experiences often lead students to believe that the farms they don't see are controlled by corporations, and that only small direct-to-consumer farms can be sustainable and equitable. Conversely, students who grew up on farms may not have much direct experience with life in other places within their country or around the world .

Teaching food economics can lead all kinds of students to transformative moments of insight, first through the logic shown in our analytical diagrams and then in the data shown in our charts and tables. Weekly exercises accompanying the book help bring about many insights, asking students to find news stories that illustrate each week's economic principles with the corresponding diagrams, and later asking students to download raw data from authoritative sources that they can transform into their own charts and tables on U.S. or global patterns in farm production, food enterprises, and dietary patterns. By empowering students to think critically and analyze data, food economics education can help students understand the world and engage in informed dialogue towards a more effective and resilient food system.

*Food economics for food system careers, food policy and beyond*

Nearly all students are concerned about how their education will affect their employment prospects and career progression, driving broad interest in ensuring that degree programs meet student needs both now and in the future (Dorfman et al., 2024). The content of *Food Economics* helps instructors deliver the kind of course that students want, with practical training in critical thinking and data analysis to solve problems they are likely to encounter in everyday life and their jobs. A major purpose of practical training is to help instructors who might use the book to teach students from outside of specialized agricultural economics programs, including for example students in nutrition and dietetics who seek a better understanding of social and environmental aspects of the food system (Harmon et al., 2011). Case studies and news analysis assignments as well as data visualization exercises help build practical skills suited to a wide range of contexts, including new degree programs in food systems and sustainable agriculture that cut across disciplines (Valley et al., 2018). These programs aim to serve students with

diverse interests and meet employer demand for professionals with new skills (Townsend et al., 2017; Food Security Portal, 2018).

A clear focus of the *Food Economics* book is to help students build a logical framework through which to identify fallacies and inconsistencies, and to strengthen their empirical understanding of trends and patterns in U.S. as well as global agriculture and food systems. This content is reinforced by weekly exercises that are not mentioned in the book, but instructors can adopt if they wish. The exercises are explicitly designed to help students learn the skills needed to complement use of generative large language models and artificial intelligence tools such as ChatGPT. The first weekly exercise, entitled *Keeping up with AI*, asks students to practice using generative artificial intelligence by deliberately creating poor quality content whose flaws they identify and discuss. Students are asked to generate content in which they find at least one hallucination, meaning plausible generated text that appears correct but is factually wrong, and at least one logical inconsistency where the model writes text with individual sections that could be valid on their own, but cannot all be true at once. These artifacts are accompanied by recommendations about how to use generative AI to spur creativity, for example by creating multiple very different drafts of the same thing, thereby helping students build the discernment and editing skills they will need in professional life (Mollick 2024).

*Food Economics* provides a toolkit for modeling the assorted kinds of individual choices and market structures that students might encounter, recognizing how interconnectedness is represented by a system of simultaneous equations drawn as lines or curves on each diagram. The lines and curves in each diagram are clearly explained as representing the choices of real-life farmers, business managers, and individual consumers, leading to the points we might observe in surveys or other data sources. This viewpoint, coupled with data analysis skills honed by

gathering, interpreting, and visualizing information from credible sources, enables students to make more informed and helpful decisions with updated intuition based on much more evidence and careful logic than the prior beliefs with which students might have before embarking on higher education.

*Food Economics: Learning objectives and visual style*

After reading the book, students will be able to:

1. Describe causal mechanisms behind observed production, consumption, market and trade outcomes using analytical diagrams that illustrate economic principles;
2. Apply economic principles to assess the consequences for wellbeing of market failures, government policies, regulations and external shocks to the global food system;
3. Obtain, use and explain available data on food, agriculture, nutrition and health;
4. Imagine, describe and analyze the effects of individual actions and systemic changes in agriculture, food and nutrition, taking account of resource constraints, available technologies and how people respond to incentives.

Instructors can use news analysis and data visualization assignments posted on the textbook's website (https://sites.tufts.edu/foodeconomics) to help students practice these skills. In the following sections, we describe how each chapter helps instructors and students achieve those learning objectives, as illustrated by the core messages from each chapter listed in Table 1.

[Insert Table 1 about here]

The first half of the book introduces analytical diagrams that illustrate economic principles, without the need for algebra, calculus or other advanced math. For example, we show how consumer optimization can be described as people having chosen the best (or least bad) of their available options, based on their goals and preferences as represented by a family of indifference curves shown in Figure 1. Similar notation is used throughout the book, with quantities of interest shown along the horizontal axis for individual choices in this example, or an entire market as in diagrams illustrating supply and demand.

[Insert Figure 1 here]

The second half of the book introduces macroeconomics and data analysis, using line graphs of historical data or scatterplots for global comparisons, as well as bar charts and tables for comparisons where needed. An example is our introduction to Gini coefficients and analysis of inequality across countries, using all available data plotted at each level of national income per person from 1967 to 2018, with colors to highlight different geographic regions and detailed notes allowing instructors and students to reproduce our charts from publicly available data as shown in Figure 2.

[Insert Figure 2 here]

Each of the book's 12 chapters uses a variety of U.S. and global examples to convey its key messages discussed below, and summarized in Table 2.

[Insert Table 2 about here]

The content of each chapter builds on previous sections and leads into subsequent material so that the book as a whole can be used in one-semester survey, but chapters can also be used separately in the context of other courses. Each one is briefly explained here.

*Chapter 1. Introduction:*

*Food economics is important for the future of agriculture, nutrition and health*

This chapter motivates the study of economics through food, and of food through economics. We explain how lines and curves leading to points on a two-dimensional diagram can help us explain, predict and assess individual choices and market outcomes, as well as the consequences of policy interventions. We then show how household surveys and other data sources give us observational data on actual outcomes, which we can represent visually as scatter plots or line graphs and bar charts to see trends and patterns that would not otherwise be visible. We emphasize that analytical diagrams like Figure 1 represent the causal forces behind observed outcomes, with each line or curve showing alternative options that were not chosen due to the factors represented by the other lines or curves. In contrast, data visualizations like Figure 2 show a large number of observed outcomes, with each point having been created by variation in circumstances not shown on the chart. This approach allows instructors to discuss how the material being taught in class relates to other courses that students might take, for example statistics or econometrics, to quantify patterns and potentially infer causality in data such as Figure 2, as well as potentially estimating lines and curves that might permit simulation modeling of counterfactual scenarios as in Figure 1.

*Chapter 2. Individual choices:*

*People usually learn from mistakes, and choose the best of their options for them*

Chapter 2 explores the factors influencing individual choices in food consumption and production, using economic models to explain how people select their preferred choice from a

limited set of options. It examines how prices, incomes, preferences, and production capabilities shape these choices, highlighting the concept of diminishing returns, whether in terms of indifference curves and utility for consumers or production possibilities and profit for producers. Students do not need the mathematics of optimization to understand how useful it can be to expect that each person has aspirations and preferences that guide their choices from their available options, given their individual circumstances. Other peoples' choices may not always be what we imagine we would have chosen if we'd been in their circumstances, but whole populations often have sufficiently similar preferences for economists to estimate average elasticities of demand, and from observed production we can estimate elasticities of supply.

An important aspect of food choice emphasized in the book is that people usually cannot see, taste or smell how an item will influence their future health. Consumers can detect rancidity or mold and some other aspects of food safety before or soon after eating, and the total energy from each eating occasion is experienced within minutes or hours, but other aspects of food's nutritional value must be inferred from a product's packaging, labeling and other contextual clues. Consumers will pay for better health, so vendors sell items with health claims at a premium price, but the actual health effects of choosing one item instead of another is typically unknown to the buyer and may also be unknown to the seller. The fact that consumers cannot know and may be misled about each item's nutritional value is fundamental to the economics of food choice, and is introduced from the start of this book's explanation of consumer behavior.

*Chapter 3. Societal outcomes:*

*The outcomes we see come from interactions between people, and can be changed*

Chapter 3 examines how market prices and quantities are determined through the interactions of producers and consumers, represented graphically through supply and demand curves as well as the external price in trade for any imports or exports. We derive those market diagrams from the previous chapter's individual choice diagrams, leading to the elasticities by which producers and consumers respond to changes in prices and incomes. From the start we distinguish between market structures for tradables and non-tradables, showing how production meets consumption at each location for food services and bulky or highly perishable products, while foods that enter long-distance trade have production separated from consumption by the quantity traded.

In chapter 3, explanation of market diagrams focuses on how predicted outcomes in terms of quantity and price are points of intersection between lines, using but not emphasizing economics jargon such as marginal quantities and equilibrium outcomes. Avoiding jargon and defining terms carefully can be helpful because students who are new to economics already have other meanings in mind for key terms and concepts. For them, 'marginal' usually means excluded or unimportant (whereas in economics the marginal unit is central to the analysis), and 'equilibrium' usually means a desirable or well-balanced outcome (whereas in economics the equilibrium may involve very low levels of wellbeing).

*Chapter 4. Social welfare:*

*We can use observed choices to infer changes in wellbeing, and account for externalities*

Chapter 4 introduces the concept of economic surplus as a measure of wellbeing that can be derived from observed behavior. One distinctive feature of this book is to teach economic surplus by starting with a toy model of an imaginary beachside village with five individual consumers named Ana, Bob, Cat, Deb and Ed, and also three fish producers called Fio, Gio and Hijo. This 'Alphabet Beach Village' allows us to explain how each person's willingness to pay and marginal cost of production determines both their choices and their economic surplus derived from each market outcome. Using this setup we start with the outcome of perfectly competitive interactions among only the eight villagers, and then show how each of them would react and is affected by scenarios in which foreigners offer to buy or sell fish, resulting in exports or imports that create gains from trade and also alter the community's income distribution.

The second half of chapter 4 uses economic surplus to introduce externalities and government interventions. Introducing these aspects of economic analysis immediately as soon as possible is helpful for the economics of food, because it allows us to consider both positive and negative externalities from both production and consumption. We show that these externalities around supply and demand curves do not alter predicted market prices and quantities unless there is some kind of government intervention. We start with Coasian interventions based only on enforcing property rights over the externality, and then illustrate real-world regulations on quantity using the examples of a city's food truck licenses (for a nontraded service) and U.S. sugar import quotas (for a traded commodity).

*Chapter 5. Market power and strategic behavior:*

*Lack of competition and coordination problems can reduce economic surplus*

Chapter 5 introduces market structures other than perfect competition, starting with a single seller (monopoly) or single buyer (monopsony) who controls the quantity traded in a market. Our treatment of this topic begins with the observation that food systems are characterized by many farming households and individual consumers in each region, while farm inputs or food processing and distribution services are typically provided by larger enterprises (Figure 3). From the start we emphasize how those larger nonfarm enterprises might grow through innovation and scale economics, gaining market share and competing with each other over a larger geographic area. We use the toy model of Alphabet Beach to show how a monopolist's choices would differ from the outcome of each individual acting independently, and then use the example of Walmart to describe how their cost reductions could to small local grocery stores being replaced by larger regional chains. We also use the example of the raisin marketing board to show how a nation-wide monopoly can be created by government policy, which in the case of a tradable product also requires controlling imports and exports at the border. The second half of chapter 5 extends the analysis to strategic interactions between individuals, introducing the concept of a payoff matrix using the simple case of two people choosing between two options. This allows us to show how the payoff matrix of a classic prisoner's dilemma has been set by the police and the judiciary to elicit confessions, while other kinds of payoff matrixes would lead to other outcomes.

*Chapter 6. 6. Collective action and the public sector:*

*Well targeted policies and programs can offset market failures and improve wellbeing*

Chapter 6 introduces the role of government, in the form of collective action leading to policies and programs that alter market outcomes, often motivated by market failures and demand for public goods and services. The chapter begins with classification of goods and services as being excludable or nonexcludable, and rival or nonrival, leading to the foundations of public choice based on aggregation of consumer willingness to pay for each kind of thing. We then introduce concepts of free ridership and rational inattention, and discuss challenges and complexities of collective action are emphasized. The second half of chapter 6 introduces the toolkit used by economists to guide the provision of public goods and services, in terms of cost-effectiveness analysis and preference elicitation using choice experiments and other tools for estimation of willingness to pay in nonmarket settings.

*Chapter 7. Poverty and risk:*

*Insurance and redistribution are closely related, and can help meet social goals*

Chapter 7 is the midpoint of the book, where we pivot from economic principles to empirical observation. The first six chapters include many examples illustrated by analytical diagrams, while the remainder of the book introduces data visualization of findings from population surveys and administrative information. We begin that description of the food system with analysis of deprivation, and the close link between inequality, inequity, and risk over time. The text begins with describing how Mollie Orshansky and others developed the U.S. poverty line in the early 1960s based on diet costs and household surveys from the 1950s, and proceeds with discussion of each type of data with links to their source so that students and instructors can make updated charts in future years. This work includes both inequality among individuals or households and inequity between groups, highlighting how innovations in measurement drive

understanding over time. The second half of the chapter introduces risk and insurance, and how food price dynamics create brief but extreme spikes during periods of scarcity. We show how and why food consumption in terms of energy per day changes relatively little over time, leading to analysis of food insecurity and access to healthy diets.

*Chapter 8. Food and health:*

*Food choices are made for many reasons, often without knowing how foods affect health*

Chapter 8 extends the framework of consumer behavior introduced in Chapter 2, introducing the toolkit of behavioral economics to address preference reversals between each person and their future self. The chapter begins with the cognitive challenge of overcoming confirmation bias in selection of what we observe, and motivated reasoning in how we interpret those observations. We then describe how those cognitive challenges contribute to both status-quo bias when comparing existing conditions to a potential alternative, and present bias when choosing between things now and things in the future. These aspects of behavioral economics are drawn graphically, while data visualizations about actual food choice and health are presented in later chapters after the introduction of macroeconomics and development over time.

The second half of chapter 8 is devoted to interventions for behavior change, using indifference curves to show the relationship between in-kind food aid and cash transfers for recipients who do or do not spend some of their own money on each product in addition to the quantities provided by aid. An important feature of our diagrams showing program impacts for infra- and extra-marginal recipients is to draw them for both desirable products that are given to recipients, as in fruit and vegetable consumption by SNAP and WIC recipients, and also

exclusion of potentially harmful products from eligibility, such as rules against use of SNAP benefits for unhealthy foods.

*Chapter 9. Food in the macroeconomy:*

*Agriculture and food is part of a circular flow of money for things within each country*

Chapter 9 introduces macroeconomics, which then allows us to address how periods of growth and recession influence use of nutrition assistance and other social safety nets. Like other economics textbooks we use the standard circular-flow diagrams to show how national income accounting tracks value added, income and expenditure, but then provide numerical examples and data from the food system including cost shares for consumer spending in the United States. The second half of Chapter 9 shows how trends and fluctuations in the U.S. economy relate to use of SNAP benefits, connecting growth and recessions to unemployment. We include detailed data on U.S. employment at and around minimum wages to show its importance for food system jobs, and show detailed data on U.S. jobs in each subsector of the food economy to show seasonality and trends in the number of workers in agriculture, food manufacturing, retailing and food service, followed by data U.S. labor force participation, earnings, and unemployment to address trends and fluctuations in wellbeing and disparities between demographic groups.

*Chapter 10. International development:*

*Demographic and other changes drive agricultural transformation and dietary transition*

Chapter 10 examines long-term economic growth and the four major transitions that are associated with it: demographic, structural, food system, and nutritional. We use tables and

charts to show how these transitions from lower to higher incomes, schooling and longevity relate to agriculture, food and nutrition. Our text explains how innovation and accumulation of capital in all its forms, stimulated by potential returns to new investment, leads to a declining share of employment in farming, as populations to use their time and natural resources to produce and consume a wider range of goods and services in the food sector as well as other domains. The second half of Chapter 10 focuses on how economic development plays out in terms of trends in food consumption and diet quality, globally and within the United States.

*Chapter 11. International trade and value chains:*

*Trade and investment can help countries meet their needs, altering income distribution*

Chapter 11 focuses on spatial interconnections between countries and regions, including how globalization and trade policies create linkages between local and global food systems. This analysis begins with comparative advantage, and how prices in trade are formed by the interaction of supply and demand between exporters and importers. We show how transport costs influence trade, and provide example data on costs for bulk grain shipments to various destinations by truck, train and boat, as well as illustrative price data for a country that might oscillate between self-sufficiency and importing or exporting a particular crop. That leads to actual data on the extent of international trade in agriculture and food, and data on policy interventions as monitored by the OECD, WTO and other organizations. The second half of this chapter turns to value added along supply chains, describing how food flows from producing regions to consumers through terminal markets and distribution networks. This section also provides farm census data on farm sizes around the world, in terms of both land area and the number of employed or family workers per farm. These data reveal how each region has farm

sizes determined by what family members can afford to operate in that place, which may also influence what foods are grown and how they are produced. The chapter concludes with an accounting framework through which to add external costs and benefits to market values, and thereby consider net social values and cost/benefit ratios of each product in each place.

*Chapter 12. The future of food:*

*Innovations are induced by changing needs, linking climate and sustainability to health*

Our concluding chapter addresses the process by which new technologies and institutional arrangements arise and spread. We start with the concept of induced innovation, by which we explain the pace and direction of change in terms of inventors and entrepreneurs attempting to develop new things they believe will be increasingly valuable in the future. We then describe the tension and complementarity between agroecology and agribusiness, as farmers seek to manage both natural resources and purchased inputs, and policy interventions might or might not address externalities associated with various kinds of agricultural activity. The second half of Chapter 12 describes the somewhat similar challenge for food markets to meet nutritional needs, emphasizing the challenge of collective action and the opportunities for individuals to help improve outcomes by aligning consumer demand with requirements for long-term health, climate resilience and environmental sustainability.

*Conclusion*

The new textbook described in this article offers a comprehensive and accessible exploration of food economics, providing students with the tools to analyze the complex

interplay of the many decisions that occur within food systems every day. The book arises from experience teaching introductory principles of economics through examples from agriculture and food consumption, and presenting data about the food system to a wide range of audiences especially those interested in primarily in sustainability and health (Hawkes et al., 2024). The textbook equips readers with the skills to understand how individual choices and societal actions impact agriculture, nutrition, and health, empowering them to contribute to the development of more sustainable and equitable food systems. Food economics lies at the intersection of all these fields, and use of this book could help instructors demonstrate these interconnections and build on each student's own experiences.

The book is aimed at advanced undergraduates and graduate students, with open access to the electronic version to help overcome the various barriers to higher education faced by many students (Cloete et al., 2018; Parker, 2019; Salmi & D'Addio, 2021; Wilson, 2023). Future policy advancements in food, agriculture, nutrition and health will be made possible by attracting a students from all over the world and making applied economics education relevant to as broad a range of students and learners as possible (Nayga et al., 2024). Integrating open educational resources and open teaching practices into food economics education could play a vital role in preparing future generations of economists to conduct research and advocate for effective food policies. By using open access course materials we can equip students with the tools to contribute to a more transparent and collaborative research environment. This would, in turn, help broadcast research findings to policymakers and the public, enhancing the impact of food economics research on policy decisions. By adopting these strategies, we can reshape food economics education to empower future generations of economists to make a tangible difference in shaping more equitable, sustainable, and healthy food systems.

**References cited**

Cloete, N., Bunting, I., & van Schalkwyk, F. (2018). *Research Universities in Africa*. Cape Town, South Africa: African Minds Publishing. https://doi.org/10.5281/zenodo.1479114

Davis, B., Mane, E., Gurbuzer, L. Y., Caivano, G., Piedrahita, N., Azhar, N., Benali, M., Chaudhary, N., Rivera, R., Schneider, K., Ambikapathi, R., & Winters, P. (2023). *Estimating Global and Country-Level Employment in Agrifood Systems* (FAO Statistics Working Paper Series Issue 23/24; Food and Agriculture Organization of the United Nations). https://www.fao.org/newsroom/detail/almost-half-the-world-s-population-lives-in-households-linked-to-agrifood-systems/en

Dorfman, J. H., Irwin, S. H., Gopinath, M., & Zilberman, D. (2024). The future of agricultural and applied economics departments. *Applied Economic Perspectives and Policy*, *46*(3), 834–844. https://doi.org/10.1002/aepp.13432

Dunbar, R. I. M. (2017). Breaking Bread: The Functions of Social Eating. *Adaptive Human Behavior and Physiology*, *3*(3), 198–211. https://doi.org/10.1007/s40750-017-0061-4

FAO (2023). *The State of Food Security and Nutrition in the World 2023*. Rome: Food and Agriculture Organization of the UN. https://openknowledge.fao.org/items/445c9d27-b396-4126-96c9-50b335364d01

Food Security Portal (2018). The Global Food System and Employment. https://www.foodsecurityportal.org/blog/global-food-system-and-employment

Galt, R. E., Parr, D., Van Soelen Kim, J., Beckett, J., Lickter, M., & Ballard, H. (2013). Transformative food systems education in a land-grant college of agriculture: The importance of learner-centered inquiries. *Agriculture and Human Values*, *30*(1), 129–142. https://doi.org/10.1007/s10460-012-9384-8

Harmon, A., Lapp, J. L., Blair, D., & Hauck-Lawson, A. (2011). Teaching Food System Sustainability in Dietetic Programs: Need, Conceptualization, and Practical Approaches. *Journal of Hunger & Environmental Nutrition*, *6*(1), 114–124. https://doi.org/10.1080/19320248.2011.554272

Hawkes, C., Gallagher-Squires, C., Spires, M., Hawkins, N., Neve, K., Brock, J., Isaacs, A., Parrish, S., & Coleman, P. (2024). The full picture of people's realities must be considered to deliver better diets for all. *Nature Food*, *5*(11), 894–900. https://doi.org/10.1038/s43016-024-01064-0

Masters, W. A., & Finaret, A. B. (2024). *Food Economics: Agriculture, Nutrition, and Health*. Palgrave Macmillan. https://doi.org/10.1007/978-3-031-53840-7

Masters, W. A., Finaret, A. B., & Block, S. A. (2022). Chapter 90 - The economics of malnutrition: Dietary transition and food system transformation. In C. B. Barrett & D. R. Just (Eds.), *Handbook of Agricultural Economics* (Vol. 6, pp. 4997–5083). Elsevier. https://doi.org/10.1016/bs.hesagr.2022.03.006

Mollick, Ethan (2024). Co-Intelligence: Living and Working with AI. New York: Penguin.

Nayga Jr, R. M., Liu, J., & Kassas, B. (2024). The looming demographic cliff: A wake-up call for the agricultural and applied economics profession. *American Journal of Agricultural Economics*, *106*(2), 468–484. https://doi.org/10.1111/ajae.12457

Parker, K. (2019). The Growing Partisan Divide in Views of Higher Education. *Pew Research Center*. https://www.pewresearch.org/social-trends/2019/08/19/the-growing-partisan-divide-in-views-of-higher-education-2/

Salmi, J., & D'Addio, A. (2021). Policies for achieving inclusion in higher education. *Policy Reviews in Higher Education*, *5*(1), 47–72. https://doi.org/10.1080/23322969.2020.1835529

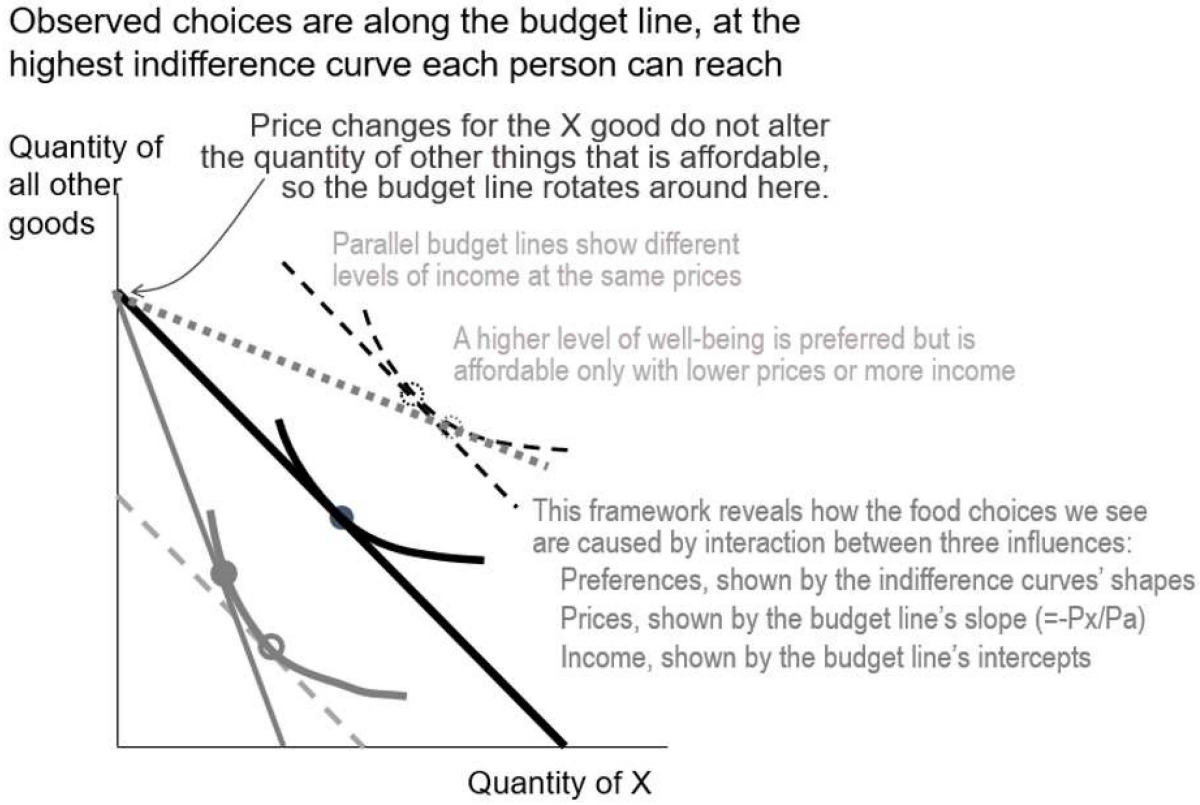
Townsend, R., Benfica, R. M., Prasann, A., Lee, M., & Shah, P. (2017). *Future of food: Shaping the food system to deliver jobs* (114394). The World Bank. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/406511492528621198/Future-of-food-shaping-the-food-system-to-deliver-jobs

Valley, W., Wittman, H., Jordan, N., Ahmed, S., & Galt, R. (2018). An emerging signature pedagogy for sustainable food systems education. *Renewable Agriculture and Food Systems*, *33*(5), 467–480. https://doi.org/10.1017/S1742170517000199

Wilson, N. L. W. (2023). A call for justice work in agricultural and applied economics. *American Journal of Agricultural Economics*, *105*(2), 393–408. https://doi.org/10.1111/ajae.12386

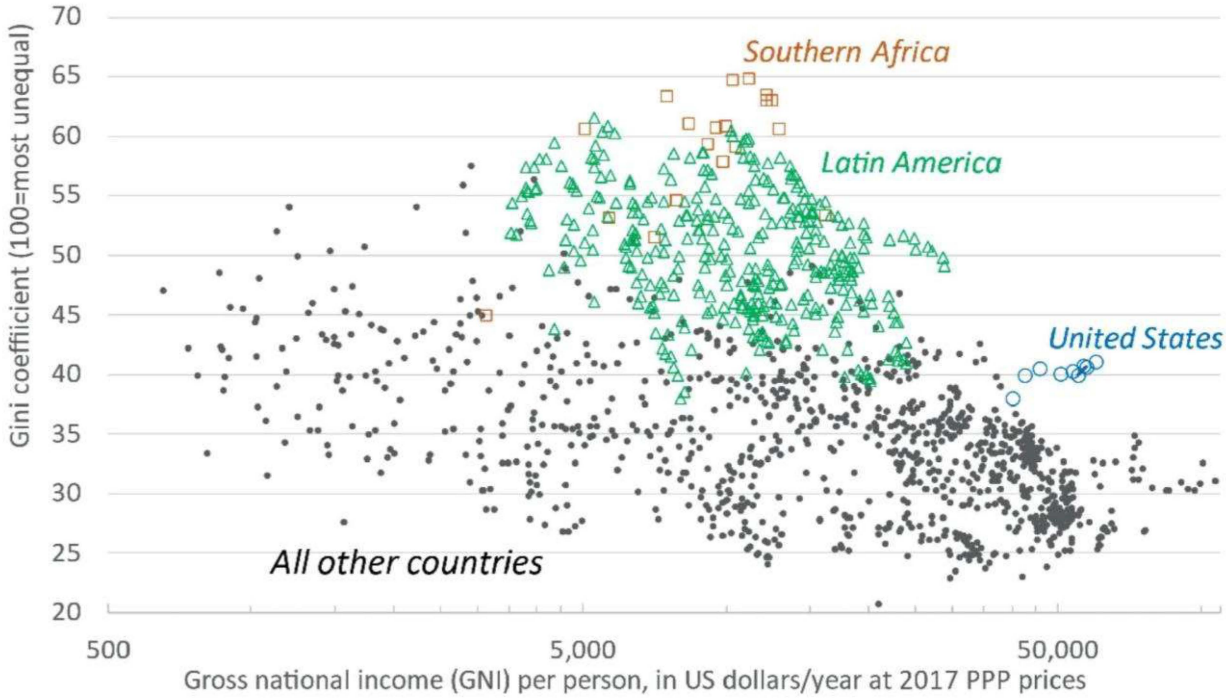
**Tables and Figures**

**Figure 1: What we observe is each person's preferred choice from what they can afford**




Source: Figure 2.4 from Masters, W.A. and A.B. Finaret (2024), *Food Economics: Agriculture, Nutrition, and Health*. Cham: Palgrave Macmillan. Open access, at https://bit.ly/FoodEconBook.

**Figure 2: Income inequality at each level of national income per person, 1967-2018**




Source: Figure 7.9 from Masters, W.A. and A.B. Finaret (2024), *Food Economics: Agriculture, Nutrition, and Health*. Cham: Palgrave Macmillan. Open access, at https://bit.ly/FoodEconBook. Authors' chart of data from World Bank estimates, from https://databank.worldbank.org. Data shown are a total of 1353 observations from 137 countries in each year for which both Gini coefficients and GNI are available. Gini coefficients are estimated from household survey data by World Bank researchers and denoted SI.POV.GINI. Gross national income per person at PPP prices is estimated from national accounts and denoted NY.GNP.PCAP.PP.KD.

**Figure 3: Double hourglass structure of the food economy**


Source: Figure 5.1 from Masters, W.A. and A.B. Finaret (2024), *Food Economics: Agriculture, Nutrition, and Health*. Cham: Palgrave Macmillan. Open access, at https://bit.ly/FoodEconBook.

**Table 1. Core messages from each chapter**

| Core messages from each chapter |
|---|
| 1. **Introduction**<br>*Food economics is important for the future of agriculture, nutrition, and health* |
| 2. **Individual choices**<br>*People usually learn from mistakes, and choose the best of their options for them* |
| 3. **Societal outcomes**<br>*The outcomes we see come from interactions between people, and can be changed* |
| 4. **Social welfare**<br>*We can use observed choices to infer changes in wellbeing, and account for externalities* |
| 5. **Market power and strategic behavior**<br>*Lack of competition and coordination problems can reduce economic surplus* |
| 6. **Collective action and the public sector**<br>*Well targeted policies and programs can offset market failures and improve wellbeing* |
| 7. **Poverty and risk**<br>*Insurance and redistribution are closely related, and can help meet social goals* |
| 8. **Food and health**<br>*Food choices are made for many reasons, often without knowing how foods affect health* |
| 9. **Food in the macroeconomy**<br>*Food is part of a circular flow of money for things within each country* |
| 10. **International development**<br>*Demographic and other changes drive agricultural transformation and dietary transition* |
| 11**. International trade and value chains**<br>*Trade and investment can help countries meet their needs, altering income distribution* |
| 12. **The future of food**<br>*Innovations are induced by changing needs, linking climate and sustainability to health* |

Source: Masters, W.A. and A.B. Finaret (2024), *Food Economics: Agriculture, Nutrition, and Health*. Cham: Palgrave Macmillan. Open access, at https://bit.ly/FoodEconBook

**Table 2. Topics covered in *Food Economics***

**Chapter title and section heading**

1. **Introduction**
    - *1.1 From farming to eating, research and teaching*
    - *1.2 Why study food through economics, and economics through food?*
2. **Individual choices**: Explaining food consumption and production
    - *2.1 Consumer choices: Food preferences and dietary intake*
    - *2.2 Producer choices: Agriculture and food manufacturing*
3. **Societal outcomes**: Predicting food market prices and quantities
    - *3.1 Market equilibrium with perfectly competitive interactions*
    - *3.2 Market elasticities: Measuring how people respond to change*
4. **Social welfare**: Evaluating change in food markets
    - *4.1 Economic surplus: Who gains from market transactions?*
    - *4.2 Externalities: Unintended side effects of market activity*
5. **Market power**: Imperfect competition and strategic behavior
    - *5.1 Monopoly and monopsony: When one seller or buyer sets total quantity*
    - *5.2 Strategic behavior: Game theory for two-person interactions*
6. **Collective action**: Government policies and programs
    - *6.1 Public goods and social choice: Property rights, taxes and subsidies*
    - *6.2 Cost-effectiveness and nonmarket goals in food and agriculture*
7. **Poverty and risk**: Variation among people and over time
    - *7.1 Inequality, inequity and disparities in agriculture and nutrition*
    - *7.2 Vulnerability, resilience, and safety nets in the food system*
8. **Food and health**: Behavioral economics and response to intervention
    - *8.1 Behavioral economics of food choices for future health*
    - *8.2 Interventions for behavior change*
9. **Food in the macroeconomy**: The whole is more than the sum of its parts
    - *9.1 National income and the circular flow of goods and services*
    - *9.2 Recessions and unemployment, with links to food jobs and the social safety net*
10. **International development**: Systemic change over time
    - *10.1 Agricultural transformation: Demography, urbanization and farm size*
    - *10.2 Food systems and dietary transition: From inadequacy to excess and health*
11. **International trade and value chains**: From local to global
    - *11.1 How trade and policies link local markets to global food systems*
    - *11.2 Value chains, social accounting and institutions in the food system*
12. **The future of food**: Meeting human needs with systemic change
    - *12.1 Agribusiness and agroecology: The environment, climate, and resources*
    - *12.2 Nutrition and health: Food environments, retail markets, and diet quality*

Source: Masters, W.A. and A.B. Finaret (2024), *Food Economics: Agriculture, Nutrition, and Health*. Cham: Palgrave Macmillan. Open access, at https://bit.ly/FoodEconBook