
Contents

Foreword	xi
Preface	xv
Acknowledgments.....	xix
Editor	xxi
Contributors	xxiii

SECTION I Introduction and Contextualizing the Local Food Environment into the American Food System

Chapter 1	Introduction	3
	<i>Kimberly B. Morland</i>	
	Defining Local Food Environments.....	4
	Food Retailing in the United States	8
	Food Consumption Trends in the United States.....	13
	Hunger and Obesity in the United States	17
	Conceptual Models and Local Food Environments.....	20
	Factors Involved in Obtaining Food, Physical Activity, and Disease Development	20
	Causation in Local Food Environment Studies.....	22
	References	26
Chapter 2	U.S. Agricultural Policies and the U.S. Food Industry:	
	Production to Retail.....	29
	<i>Arlene Spark</i>	
	U.S. Government Oversight of Agriculture.....	29
	Food Industry Lobby	29
	U.S. Department of Agriculture	31
	U.S. Farm Bill	31
	Naming and Titles of the U.S. Farm Bills	32
	New Farm Bill Signed into Law in 2014	34
	Overview and History of the Farm Bill	35
	U.S. Commodity Crops and Subsidies	36
	Commodity Crops and Subsidies Result in “Cheap Food”	36
	Commodity Foods and USDA Nutrition Programs	38
	Imports and Exports.....	42

	Specialty Crops.....	44
	Strategic Initiatives.....	46
	Crop Insurance.....	46
	Healthy Food Financing Initiative.....	48
	Other Federal Agencies with Authority on the U.S. Food System.....	51
	U.S. Food Industry.....	53
	Consolidation of the U.S. Food Industry.....	53
	References.....	58
Chapter 3	Environmental Injustice Connects Local Food Environments with Global Food Production.....	63
	<i>Steve Wing</i>	
	Environmental Injustice and Industrial Food Production.....	64
	Industrial Farm Animal Production.....	66
	Health Effects of Industrial Hog Operations.....	69
	Health Effects of Industrial Animal Production Extend Beyond Local Communities.....	78
	Economic, Social, and Political Impacts of Industrial Animal Production.....	79
	References.....	82
SECTION II Local Food Environments: Research, Methods, and Analytical Issues		
Chapter 4	Geography of Local Food Environments: People and Places.....	87
	<i>Kimberly B. Morland</i>	
	Environmental versus Individual Causes of Disease.....	89
	Racial Segregation in the United States.....	90
	Segregation and Area Resources.....	92
	Developing a Conceptual Model.....	94
	Measuring the Effects of Local Food Environment to Target Interventions.....	94
	Simplified Causal Pathways.....	95
	Measurement of Geographic Boundaries of Local Food Environments.....	96
	Assigning Exposure and Types of Boundaries.....	97
	Measurement of Food Availability.....	104
	Presence of Stores/Restaurants.....	104
	Types of Food Stores/Restaurants.....	106
	Content of Stores/Restaurants.....	107

Evidence of Disparities in Access to Healthy Foods in the United States (1997–2013)..... 107
 References 117

Chapter 5 Local Food Environments and Dietary Intake..... 121
Barbara A. Laraia, Bethany Hendrickson, and Yun T. Zhang

Diet and Health 123
 Measuring Diet for Local Food Environment Research 127
 24-Hour Recall 128
 Food Frequency Questionnaires 131
 Brief Dietary Screeners 132
 Food Environment Measures and Methods 132
 Association Between Diet and Food Prices and Quality 152
 Food Prices 152
 Quality of Produce 152
 School Environment 153
 External School Environment 155
 Summary and Conclusions 157
 References 158

Chapter 6 Local Food Environments and Diet-Related Health Outcomes: A Systematic Review of Local Food Environments, Body Weight, and Other Diet-Related Health Outcomes 167
Shannon N. Zenk, Esther Thatcher, Margarita Reina, and Angela Odoms-Young

Causal Conceptual Model 171
 Study Selection 173
 Summary of Study Findings 174
 Methods Overview 174
 Evidence for Body Weight by Age 184
 Adults 184
 Children or Adolescents 187
 Supermarkets and Obesity, Adults 2006–2012 188
 Evidence for Other Health Outcomes 189
 Discussion 189
 Limitations 190
 Implications for Policy and Other Interventions 191
 Implications for Future Research 192
 Conclusions 196
 References 197

Chapter 7	Measurement and Analytical Issues Involved in the Estimation of the Effects of Local Food Environments on Health Behaviors and Health Outcomes	205
	<i>Latetia V. Moore and Ana V. Diez-Roux</i>	
	Conceptual Models.....	206
	Study Design	206
	Experimental Studies	207
	Observational Studies.....	208
	Natural or Quasi Experiments.....	209
	Measurement of the Local Food Environment	210
	Theoretically Relevant Local Food Environment Features	210
	Spatial Scale	212
	Data Sources Used to Characterize Local Food Environments.....	213
	Analytical Issues	218
	Measurement Error in Exposure and Outcome.....	218
	Accounting for Confounding at the Area and Individual Levels.....	222
	Effect Modification.....	223
	Time Lags and Time-Dependent Confounding.....	224
	Reverse Causation and Dynamic Relations.....	225
	References	226
Chapter 8	Local Food Environments Outside of the United States—A Look to the North: Examining Food Environments in Canada	231
	<i>Jennifer Black</i>	
	Introduction to Local Food Environments in Canada.....	231
	Brief Overview of Canadian Geography, Agriculture, and Food System Issues.....	232
	Nutrition-Related Health Outcomes in Canada.....	234
	Local Food Environment Research in Canada	236
	Where Has Local Food Environment Research Been Conducted in Canada and at What Scale?.....	236
	Evidence of Geographic Variation in Obesity.....	237
	Geographic Variation and Local Food Environments Characteristics	244
	Food Retailing in Canada	246
	Availability of Supermarkets, Grocery Stores, and Access to Nutritious Food in Canada	246
	Summary of Insights from the Canadian Literature	256
	Key Remaining Gaps in the Canadian Literature	258
	Conclusions	260
	Appendix	261
	References	261

SECTION III Moving Forward: Local Food Environment Now and in the Future

Chapter 9	State-Level Interventions: Pennsylvania’s Fresh Food Financing Initiative	273
	<i>Yael Lehmann, April White, Jordan Tucker, and Allison Karpyn</i>	
	Importance of Supermarkets	274
	Origins of the Grocery Gap	274
	Impacts of the Grocery Gap	275
	Supermarket Campaign in Pennsylvania	277
	Establishment of the Food Trust	277
	Advocating for Supermarkets	278
	Creation and Implementation of Pennsylvania’s Fresh Food Financing Initiative	282
	Structuring the Initiative	282
	Marketing the Initiative	283
	Determining Eligibility	284
	Impacts of Pennsylvania’s Fresh Food Financing Initiative	285
	Scaling Up: Replication of the Food Trust Framework and Pennsylvania’s Fresh Food Financing Initiative	286
	Phase 1: Prepare and Inform	287
	Phase 2: Engage and Empower Stakeholders	288
	Phase 3: Strategize and Develop Recommendations	290
	Phase 4: Change Policy	290
	Phase 5: Implementation	291
	Comprehensive Approach to Improving Food Access	292
	References	293
Chapter 10	Ecological Approaches to Creating Healthy Local Food Environments in the United States: Push and Pull Forces	297
	<i>Carol M. Devine and Jennifer L. Wilkins</i>	
	Objectives	298
	Approach and Definitions	298
	Ecological Framework: Multiple Levels of Action	299
	Multilevel Embeddedness of Local Food Access	301
	Push–Pull Interactions within and between Levels of an Ecological Framework	303
	Multiple Pathways to Local Food Access	303
	Food System Intersections within an Ecological Framework	304
	Approaches to Increasing Community Food Access	304
	Educational and Skill-Building Approaches	305
	Social Marketing Approaches	305

Direct-to-Consumer Approaches.....306
Healthy Retail and Direct-to-Retail or Institutional
Approaches306
Transportation Approaches308
Economic Approaches.....308
Planning and Economic Development Approaches309
Surveillance and Research Needs 310
Going Further 311
References 311

Index..... 317