

TABLE OF CONTENT

LIST OF FIGURES.....	x
LIST OF TABLES	xi
LIST OF PHOTOGRAPHS	xii
LIST OF TEXT BOXES	xiii
PREFACE.....	xv
1. INTRODUCTION.....	1
1.1 AIM OF THE STUDY	1
1.2 OUTLINE OF THE STUDY	3
2. NAVIGATING REAL MARKETS	7
2.1 GEOGRAPHY OF FOOD SYSTEMS	8
2.1.1 Food Production	8
2.1.2 Food Distribution	9
2.1.3 Food Systems	10
2.1.4 Resilience in Food Systems.....	12
2.2 SOCIAL RESILIENCE	13
2.2.1 What is Resilience?	13
2.2.2 What is Social Resilience?	15
2.2.3 Three Capacities of Social Resilience.....	18
2.2.4 Anchoring Resilience in Social Theory	19
2.3 EMBEDDED AGENCY	20
2.3.1 From Structural to Institutional Embeddedness	20
2.3.2 Institutions.....	22
2.3.3 Actors	24
2.3.4 Knowledge and Practice.....	25
2.4 REAL MARKETS	28
2.4.1 What are Markets?	28
2.4.2 Markets and Practice	30
2.4.3 Markets and Networks	32

2.4.4 Markets and Arenas.....	35
2.5 RÉSUMÉ.....	37
3. METHODOLOGY	40
3.1 TRIANGULATION.....	40
3.2 QUANTITATIVE METHODS.....	43
3.2.1 Locating Food Markets	43
3.2.2 Recording Sales Volumes	44
3.2.3 Surveying Wholesale Traders	44
3.3 QUALITATIVE METHODS.....	46
3.3.1 Observing the Food System	46
3.3.2 Interviewing Wholesale Traders	47
3.3.3 Using Participatory Tools.....	49
3.4 LIMITATIONS OF THE STUDY	51
4. THE FOOD SYSTEM OF DHAKA	52
4.1 THE MEGACITY OF DHAKA	52
4.1.1 History of Dhaka	52
4.1.2 From City to Megacity	56
4.2 RICE FOR THE MEGACITY	61
4.2.1 Rice Production in Bangladesh	61
4.2.2 Availability of Rice in Dhaka.....	66
4.2.3 Accessibility of Rice in Dhaka.....	71
4.3 FISH FOR THE MEGACITY	76
4.3.1 Fish Production in Bangladesh.....	76
4.3.2 Availability of Fish in Dhaka	81
4.3.3 Accessibility of Fish in Dhaka	85
4.4 RÉSUMÉ.....	90
5. FOOD WHOLESALE MARKETS IN DHAKA.....	93
5.1 DHAKA'S FOOD WHOLESALE MARKETS	93
5.1.1 The Emergence of Dhaka's Food Wholesale Markets.....	93
5.1.2 The Characteristics of Dhaka's Food Wholesale Markets	97
5.2 DHAKA'S VALUE CHAINS FOR FOOD.....	102

5.2.1 The Value Chain for Rice.....	102
5.2.2 The Value Chain for Fish.....	111
5.3 RICE AND FISH WHOLESALE TRADERS IN DHAKA	119
5.3.1 The Traders	119
5.3.2 The Stores.....	124
5.4 RÉSUMÉ.....	130
6. THE RESILIENCE OF FOOD WHOLESALE TRADERS IN DHAKA..	134
6.1 THE EMBEDDEDNESS OF FOOD WHOLESALE TRADERS	135
6.2 MARKETS AS PRACTICE: FOOD WHOLESALE TRADERS' COPING CAPACITIES	143
6.2.1 Delivery of Goods	143
6.2.2 Sale and Price Building	146
6.2.3 Accountancy and Restocking.....	152
6.3 MARKETS AS NETWORKS: FOOD WHOLESALE TRADERS' ADAPTIVE CAPACITIES	157
6.3.1 Exposure and Sensitivity to Business Risks.....	157
6.3.2 Trust in Business Relations	163
6.3.3 Diversification of Networks	170
6.4 MARKETS AS ARENAS: FOOD WHOLESALE TRADERS' TRANSFORMATIVE CAPACITIES	179
6.4.1 Food Wholesale Traders in the Urban Arena.....	179
6.4.2 Urbanization and the Problem of Place.....	183
6.4.3 Dealing with Informality.....	187
6.5 RÉSUMÉ.....	199
7. CONCLUSION	204
BIBLIOGRAPHY	211
APPENDIX.....	227

LIST OF FIGURES

Figure 1: Research framework.....	6
Figure 2: Actors-institutions loop	27
Figure 3: Geography of markets – Conceptual framework	39
Figure 4: Population growth of Dhaka (1901–2010).....	58
Figure 5: City size ranking of municipalities and SMAs in Bangladesh.....	60
Figure 6: Food grain production, import and requirement in Bangladesh (1971–2011).....	62
Figure 7: Cropped area and average annual yield of rice in Bangladesh (1971–2006).....	63
Figure 8: Food consumption in urban areas and in Dhaka City (from left to right).....	67
Figure 9: Rice consumption in Dhaka City	70
Figure 10: Total catch and net availability of fish in Bangladesh (1989–2009)....	78
Figure 11: Average annual catch of fish in Bangladesh (1989–2009)	79
Figure 12: National fish production and urban consumption in Dhaka City (from left to right)	82
Figure 13: Fish consumption in Dhaka City	84
Figure 14: Proportion of total rice turnover in Dhaka City by market	99
Figure 15: Distribution of rice wholesalers by market	100
Figure 16: Proportion of total fish turnover in Dhaka City by market	100
Figure 17: Distribution of fish wholesalers by market	100
Figure 18: The value chain for coarse rice to Dhaka	110
Figure 19: The value chain for carps to Dhaka.....	118
Figure 20: Distribution of rice and fish wholesale traders by age	119
Figure 21: Distribution of rice and fish wholesale traders by educational level .	120
Figure 22: Wholesale traders' residency in Dhaka.....	122
Figure 23: Distribution of rice wholesale traders by region of origin	123
Figure 24: Distribution of fish wholesale traders by region of origin	123
Figure 25: The personal network of Bashir	137
Figure 26: The personal network of Gilgad	140
Figure 27: Rice wholesale traders' exposure to business risks.....	159
Figure 28: Fish wholesale traders' exposure to business risks	160
Figure 29: Rice and fish wholesale traders' susceptibility to business risks	161
Figure 30: Wholesale traders' number of suppliers per year.....	171
Figure 31: Number of rice and fish types dealt by wholesale traders.....	174
Figure 32: Wholesale traders' number of customers	176
Figure 33: The structure of wholesale traders' business networks	178

LIST OF TABLES

Table 1: Three capacities of social resilience	18
Table 2: Rice market survey 2009–2010	44
Table 3: Fish market survey 2009–2010.....	45
Table 4: List of qualitative interviews	48
Table 5: Codes for the analysis of qualitative data	48
Table 6: List of participatory tools	50
Table 7: Gross food availability in Dhaka City	66
Table 8: Average annual rice wholesale prices in Dhaka (2009–2010)	69
Table 9: Seasonal changes in supply at Dhaka’s rice markets	72
Table 10: Seasonal price changes of major rice types at Dhaka’s wholesale markets	73
Table 11: Daily price changes of major rice types at Dhaka’s wholesale markets	74
Table 12: Recent price trends of major rice types at Dhaka’s wholesale markets.	75
Table 13: Average annual fish wholesale prices in Dhaka (2009–2010)	83
Table 14: Seasonal changes in supply at Dhaka’s fish markets	86
Table 15: Seasonal price changes of major fish types at Dhaka’s wholesale markets	87
Table 16: Daily price changes of major fish types at Dhaka’s wholesale markets	88
Table 17: Recent price trends of major fish types at Dhaka’s wholesale markets.	90
Table 18: Characteristics of food wholesale markets in Dhaka City.....	97
Table 19: Distribution of arising costs, net margin and consumers’ expenditure for domestically produced coarse rice (local variety) by value chain actors	109
Table 20: Distribution of arising costs, net margin and consumers’ expenditure for domestically raised <i>Rui</i> Carp by value chain actors.....	117
Table 21: Workforce of rice and fish wholesale stores	125
Table 22: Shop size of rice and fish wholesale stores	126
Table 23: Daily turnover of rice and fish wholesale stores	127
Table 24: Capital invested by rice and fish wholesale stores	129
Table 25: Annual sales of rice and fish wholesale stores	129
Table 26: Assessment of rice wholesale traders’ business relations	166
Table 27: Assessment of fish wholesale traders’ business relations	167
Table 28: Total annual turnover of wholesale traders via regular suppliers.....	168
Table 29: Total annual turnover of wholesale traders via regular customers.....	169
Table 30: Supplier diversity of rice and fish wholesale traders.....	172
Table 31: Spatial diversity of supplies of rice and fish wholesale traders.....	173
Table 32: Product diversity of rice and fish wholesale traders.....	175
Table 33: Customer diversity of rice and fish wholesale traders.....	177

LIST OF PHOTOGRAPHS

Photo 1: Paddy nurturing fields, Kushtia Municipality, 17.12.2007	102
Photo 2: Irrigated paddy fields, Jessore, Boro Bazar, 12.02.2009.....	102
Photo 3: Seasonal labor, paddy harvest, Kusthia Municipality, 17.12.2007	103
Photo 4: Paddy threshing cycle, Kushtia Municipality, 17.12.2007	103
Photo 5: Paddy steamer, Kushtia Municipality, 17.12.2007	104
Photo 6: <i>Chatal</i> , Kushtia Municipality, 17.12.2007	104
Photo 7: Rice milling machine, Kushtia Municipality, 17.12.2007	105
Photo 8: <i>Tush</i> and <i>kura</i> , Kushtia Municipality, 17.12.2007	105
Photo 9: Rice sorting machine, Kushtia Municipality, 17.12.2007	106
Photo 10: <i>Mora chal</i> (in the middle), Kushtia Municipality, 17.12.2007	106
Photo 11: Rice delivery by rickshaw, Dhaka City, Babubazar, 26.02.2008.....	107
Photo 12: Rice retail store, Dhaka, Tongi, 23.09.2007.....	107
Photo 13: Land port “Panama”, Dinajpur, Hili, 19.12.2007.....	108
Photo 14: Transshipment of import rice, Sirajganj Municipality, 20.12.2007	108
Photo 15: Carp breeding tank, Gov. Fish Seed Multiplication Farm, Khulna Municipality, 08.02.2009	111
Photo 16: Incubator with carp eggs, Jagaroni Chakra Foundation, Jessore Municipality, 11.02.2009	111
Photo 17: Carp post-larva, Jagaroni Chakra Foundation, Jessore Municipality, 11.02.2009	112
Photo 18: Cultivating fry in private hatchery, Jessore Municipality, 12.02.2009	112
Photo 19: Netting of fingerlings, Jagaroni Chakra Foundation, Jessore Municipality, 11.02.2009.....	113
Photo 20: Harvesting of carps, Jagaroni Chakra Foundation, Jessore Municipality, 11.02.2009	113
Photo 21: <i>Gher</i> , Khulna, Botiaghata Upazilla, 08.02.2009	114
Photo 22: Professional fish farm, Jessore Municipality, 12.02.2009	114
Photo 23: Transport of fish in drums, Savar, Banktown, 18.01.2009	114
Photo 24: Transport of fish in baskets, Jessore, Boro Bazar, 12.02.2009	114
Photo 25: Hawkers prepare for business, Dhaka City, Kawran Bazar, 31.03.2008	116
Photo 26: Retailer on kitchen market, Dhaka City, Khilgaon, 24.09.2007	116
Photo 27: Rice wholesale store, Dhaka City, Badamtuli, 13.11.2007	126
Photo 28: Rice wholesale store, Dhaka City, Kochukhet, 06.02.2008	126
Photo 29: Fish vending sites, Dhaka City, Kawran Bazar, 25.01.2008.....	127
Photo 30: Fish vending sites, Dhaka City, Merul Badda, 08.03.2009	127
Photo 31: Laborer rest for night turn, Dhaka City, Badamtuli, 25.01.2008	144
Photo 32: Laborer replenish rice stocks, Dhaka City, Badamtuli, 25.01.2008....	144
Photo 33: Laborer unload frozen fish, Dhaka City, Kawran Bazar, 29.01.2009.	145
Photo 34: Sleeping accommodation, Dhaka City, Kawran Bazar, 29.01.2009 ...	145
Photo 35: Displayed rice samples, Dhaka City, Badamtuli, 13.11.2007	147
Photo 36: <i>Godi</i> , Dhaka City, Badamtuli, 07.04.2009	147
Photo 37: <i>Bonga</i> , Dhaka City, Kawran Bazar, 04.02.2008	147

Photo 38: Hook, Dhaka City, Badamtuli, 13.11.2007	147
Photo 39: Laborer lifting bag of 85 kg, Dhaka City, Badamtuli, 25.01.2008	148
Photo 40: Delivery of rice bags, Dhaka City, Badamtuli, 26.02.2008	148
Photo 41: Displayed frozen fish, Dhaka City, Kawran Bazar, 31.03.2008	150
Photo 42: Displayed live fish, Dhaka City, Kawran Bazar, 31.03.2008	150
Photo 43: Weigher at work, Dhaka City, Kawran Bazar, 31.03.2008	151
Photo 44: Accountant at work, Savar, Bank Town, 18.01.2009.....	151
Photo 45: Helper amidst live fish, Dhaka City, Kawran Bazar, 31.03.2008	152
Photo 46: Auctioning of small fish, Dhaka City, Kawran Bazar, 31.03.2008....	152
Photo 47: Manager at work, Dhaka City, Jatrabari, 06.02.2008.....	153
Photo 48: Account books, Dhaka City, Krishi Market, 10.03.2008	153
Photo 49: Krishi Market before demolition, 25.12.2006	189
Photo 50: Krishi Market after demolition, 27.02.2010.....	189
Photo 51: Structure of store before demolition, Dhaka City, Krishi Market, 10.03.2008	189
Photo 52: Store after demolition, Dhaka City, Krishi Market, 10.03.2008	189
Photo 53: Warehouse under bridge, Dhaka City, Badamtuli, 07.12.2007.....	191
Photo 54: Warehouse under bridge, Dhaka City, Badamtuli, 07.12.2007.....	191
Photo 55: Workers' shelter at railway, Dhaka City, Kawran Bazar, 01.04.2008	193
Photo 56: Advertisement of hotel, Dhaka City, Kawran Bazar, 01.04.2008	193
Photo 57: Merul Badda, Wholesale Market, 17.01.2003.....	196
Photo 58: Merul Badda, Wholesale Market, 22.06.2006.....	196
Photo 59: Merul Badda, Wholesale Market, 12.07.2006.....	196
Photo 60: Merul Badda, Wholesale Market, 23.03.2010.....	196

LIST OF TEXT BOXES

Box 1: A paddy farmer in Jessore.....	103
Box 2: A rice miller in Kushtia.....	105
Box 3: A <i>gher</i> owner in Jessore.....	113
Box 4: Freight forwarding agents and truck drivers in Dhaka	115
Box 5: A rice wholesale trader in Dhaka and his business relations	136
Box 6: A fish wholesale trader in Dhaka and his business relations	139