



# Feeding Dar es Salaam: a symbiotic food system perspective

Marc C. A. Wegerif



**Feeding Dar es Salaam:  
a symbiotic food system perspective**

**Marc C. A. Wegerif**

## **Thesis committee**

### **Promotor**

Prof. Dr J.S.C. Wiskerke  
Professor of Rural Sociology  
Wageningen University & Research

### **Co-promotor**

Dr P.G.M. Hebinck  
Associate professor, Sociology of Development and Change Group  
Wageningen University & Research

### **Other members**

Prof. Dr D.F. Bryceson, University of Edinburgh, United Kingdom  
Prof. Dr M.A. Koelen, Wageningen University & Research  
Prof. Dr M.R.S Mlozi, Sokoine University of Agriculture, Morogoro, Tanzania  
Dr J. Battersby-Lennard, University of Cape Town, Rondebosch, South Africa

This research was conducted under the auspices of the Wageningen School of Social Sciences (WASS)

# Feeding Dar es Salaam: a symbiotic food system perspective

Marc C. A. Wegerif

## Thesis

submitted in fulfilment of the requirements for the degree of doctor  
at Wageningen University  
by the authority of the Rector Magnificus,  
Prof. Dr A.P.J. Mol,  
in the presence of the  
Thesis Committee appointed by the Academic Board  
to be defended in public  
on Thursday 22 June 2017  
at 11 a.m. in the Aula.

Marc C. A. Wegerif

Feeding Dar es Salaam: a symbiotic food system perspective

291 pages.

PhD thesis, Wageningen University, Wageningen, the Netherlands (2017)

With references, with summary in English

ISBN 978-94-6343-206-1

DOI <http://dx.doi.org/10.18174/414390>

## Table of Contents

Table of Contents .....	i
Tables of Photographs, Figures and Tables.....	vii
Abbreviations .....	ix
Kiswahili words .....	xi
Chapter One – Introduction.....	1
1.1. Thesis outline .....	1
1.2. My journey to this PhD .....	2
1.3. Dar es Salaam .....	5
1.4. The challenge of feeding the world is feeding the cities .....	7
1.5. Food systems under siege .....	8
1.6. Taking on the challenge through learning from Dar es Salaam.....	11
1.7. Conclusion .....	12
Chapter Two – Grounding and Applying Theory .....	13
2.1. Introduction .....	13
2.2. Grounded theory; addressing the research problem and research questions.....	13
2.3. Post structural, economics and the peasantry.....	18
2.3.1. Orthodox economics.....	18
2.3.2. Political economy and the peasantry.....	20
2.3.3. <i>Wakulima</i> and rural class formation or the lack of it .....	22
2.4. Of formality, the supermarket and value chain paradigms.....	26
2.4.1. Informal and formal.....	26
2.4.2. Supermarkets, the most formal.....	27
2.4.3. Chained to formality.....	28
2.5. City regions and alternative food networks.....	29
2.6. Common pool resource management and nested markets.....	33
2.7. African studies of city food systems and markets.....	35
2.8. Conclusion .....	39
Chapter Three – Methodology .....	41

3.1. Introduction .....	41
3.2. Study sites .....	42
3.3. Gathering the data .....	43
3.3.1. Data gathered from who and where?.....	46
3.3.2. Introducing the research and the researcher.....	48
3.3.3. Which foods to follow?.....	48
3.4. Analysing the data .....	49
3.5. Limitations .....	50
Chapter Four – Eaters’ Perspectives.....	51
4.1. Introduction .....	51
4.2. Statistics.....	52
4.3. Common concepts and inherent assumptions.....	53
4.3.1 Consumer .....	53
4.3.2. Household.....	55
4.4. Ethnographies of eaters.....	55
4.4.1. Mama Lina .....	55
4.4.2. Magdalene.....	58
4.4.3. Sharifa .....	61
4.4.4. Husna.....	64
4.4.5. Tabu .....	66
4.4.6. Ashura .....	67
4.4.7. Abasi .....	69
4.4.8. Jamil .....	70
4.4.9. Caroline .....	72
4.4.10. Dale .....	74
4.5. Conclusion .....	75
4.5.1. Access to food.....	75
4.5.2. Gender .....	78
4.5.3. Tenure security and physical space.....	79
Chapter Five – Trading Places.....	81
5.1. Introduction .....	81

5.2. Dukas .....	81
5.2.1. Mangi’s Duka.....	81
5.2.2. Other dukas.....	85
5.3. People’s markets.....	86
5.3.1. Mikoroshoni: local people’s retail market .....	86
5.3.2. Kibaigwa: regional grains market.....	90
5.3.3. Ubaruku: regional rice market .....	95
5.3.4. Beef slaughtering and selling .....	98
5.3.5. Chicken selling and slaughtering .....	101
5.4. Speciality shops .....	104
5.4.1. Egg shop.....	104
5.4.2. Grain shop.....	105
5.5. Supermarkets.....	106
5.5.1. Shoppers.....	107
5.5.2. Shoprite.....	108
5.5.3. Supermarket differences .....	109
5.6. Kentucky Fried Chicken.....	109
5.7. Conclusion .....	111
Chapter Six – Staple Foods: Maize, Rice and Potatoes .....	115
6.1. Introduction .....	115
6.2. Following the maize .....	117
6.2.1. The eaters and retailers .....	117
6.2.2. The millers and distributors .....	119
6.2.3. Producers’ perspectives.....	121
6.2.4. Producers who are not suppliers to Dar es Salaam.....	125
6.2.5. Producers in other areas.....	128
6.2.6. Maize traders and transporters at Kibaigwa Market.....	131
6.3. Following the rice.....	139
6.3.1. Rice eaters and retailers.....	139
6.3.2. Rice producers and traders.....	142
6.3.3. Transporters and transport organisers.....	145

6.4. Following the potatoes .....	146
6.4.1. Potato eating and cooking .....	146
6.4.2. Source of potatoes .....	147
6.4.3. Urafiki market in Dar es Salaam .....	149
6.5. Land rights and farm size .....	150
6.6. Conclusion .....	153
Chapter Seven – Examples of Foods from the Urban, Peri-urban and Beyond: Eggs and Green Vegetables.....	157
7.1. Introduction .....	157
7.2. Egg eaters .....	158
7.3. Following the eggs .....	158
7.3.1. Mangi’s Duka.....	159
7.3.2. Selling from home .....	159
7.3.3. Chip seller .....	160
7.3.4. Egg delivery door to door .....	160
7.3.5. The supermarket .....	161
7.3.6. Egg wholesaling .....	162
7.3.7. The egg as remedy .....	162
7.4. Egg distribution and production .....	163
7.4.1. Bicycles .....	163
7.4.2. Peri-urban egg producers .....	165
7.4.3. Public transport .....	166
7.4.4. Supermarket suppliers .....	166
7.5. Egg pricing and accessibility .....	167
7.5.1. The eggs.....	167
7.5.2. Prices for the eaters .....	167
7.5.3. Accessibility .....	170
7.5.4. Price for the egg producers.....	171
7.6. Green vegetables .....	172
7.6.1. Vegetable sellers .....	172
7.6.2. <i>Mchicha</i> farmers .....	176
7.7. Conclusion .....	180

Chapter Eight – Milk and the Value Chain .....	183
8.1. Introduction .....	183
8.2. Dairy and Dar: an overview from the literature, statistics and policies.....	184
8.3. Findings for dairy in Dar .....	187
8.4. Tanga Fresh.....	194
8.4.1. Milk producers and collection centres .....	194
8.4.2. Tanga Fresh: the beginning.....	195
8.4.3. The structure .....	196
8.4.4. Collecting and distributing: the benefits and challenges .....	198
8.5. Milking it for lessons .....	202
8.5.1. Support and build on the existing dominant raw milk based system.....	202
8.5.2. What of the value chain approach? .....	204
8.5.3. Addressing some challenges .....	206
8.5.4. Women’s power and participation .....	207
8.5.5. Land pressure .....	208
8.6. Conclusion .....	208
Chapter Nine – Discussions and Conclusions. ....	209
9.1. Introduction .....	209
9.2. Developing the ‘ride-along’: considering transport in research methods .....	209
9.2.1. Introduction .....	209
9.2.2. Existing literature or the lack of it.....	210
9.2.3. Experiences of the ride-along from research for this thesis .....	212
9.2.4. Lessons learned on the ride-along.....	217
9.2.5. Strengths and considerations summarised .....	223
9.3. The Symbiotic food system.....	226
9.3.1. Getting started .....	227
9.3.2. Common pool resource management and the symbiotic food systems.....	230
9.3.3. Are these nested markets? .....	232
9.3.4. Symbiosis: a core ordering principle .....	234
9.3.5. Competitiveness of the symbiotic food system .....	240
9.3.6. On formality, survivalism, proto-capitalists and struggle .....	243

9.4. Policy and development planning considerations for a sustainable food system.....	244
9.4.1. Alternative food networks and city region food planning .....	244
9.4.2. Reflections on sustainability .....	247
9.4.3. Supermarket model as an option.....	251
9.4.4. Women and the symbiotic food system.....	252
9.4.5. Land and property .....	256
9.4.6. City planning for sustainable food supplies .....	259
9.4.7. Value chains .....	260
9.4.8. Social safety nets.....	262
9.5. New directions in research .....	263
9.6. Conclusion .....	266
References .....	269
Summary .....	287
Acknowledgments .....	291

## Tables of Photographs<sup>1</sup>, Figures and Tables

Photograph 1 - The activities of mamantilie; a source of food and income .....	63
Photograph 2 - Husna cooking on charcoal stove behind her house and eating in corridor..	65
Photograph 3 - Mangi's Duka in the street.....	83
Photograph 4 - The author in the main building at Mikoroshoni Market.....	88
Photograph 5 - Nassor's shop with sacks of grains and pulses.....	106
Photograph 6 - Shoppers Plaza where Shoppers Supermarket is found. ....	108
Photograph 7 - A couple harvesting rice from their field in Morogoro Region.....	117
Photograph 8 - Mama Lina cooking ugali for her extended family, sembe bag at her feet. .	118
Photograph 9 - The author with one of the Enjo sembe owners and Mama Bibi. ....	119
Photograph 10 - Fanana in his maize fields planted at different times.....	124
Photograph 11 - Trader buying half a sack of maize from a woman farmer in Kiteto. ....	129
Photograph 12 - Maize traders at Kibaigwa Market. ....	133
Photograph 13 - Collecting maize in Mbande and finalising the sale in Kibaigwa.....	136
Photograph 14 - Trucks being loaded with maize at Kibaigwa Market.....	137
Photograph 15 - Rice trader at Mwananyamala market and a rice field in Ubaruku. ....	141
Photograph 16 - Local rice traders with sacks of rice queueing outside the rice mills. ....	142
Photograph 17 - Juma's chip spot. ....	147
Photograph 18 - Potato field and sacks of potatoes waiting to be collected in Mbeya. ....	148
Photograph 19 - Trucks waiting in Isyonje village and Land Rovers bringing potatoes. ....	149
Photograph 20 - Trucks loaded with potatoes at Urafiki Market and <i>gota</i> transporters. ....	150
Photograph 21 - Mariam carrying eggs as she goes door to door to sell them. ....	160
Photograph 22 - A bicycle loaded with eggs passes Julius Nyerere International Airport...	164
Photograph 23 - Lingo on his bicycle selling green vegetables to a customer. ....	174
Photograph 24 - Agriculture in valley land in Dar es Salaam and harvesting mchicha.....	177
Photograph 25 - Peri-urban dairy and egg farming in Dar es Salaam. ....	188
Photograph 26 - Dairy cows and the delivery bay at the Tanga Fresh dairy. ....	201
Photograph 27 - Woman wakulima on her motorbike outside a rice mill in Ubaruku. ....	256
Figure 1 - Iterative grounded theory approach as applied to this research.....	17
Figure 2 - Map of Tanzania indicating the wide geographic spread of production areas.....	154
Figure 3 - Simplified diagram showing amounts paid for eggs.....	171

---

<sup>1</sup> All photographs by Marc C. A. Wegerif

Figure 4 - Simplified diagram showing relationships to the urban market. ....	172
Figure 5 - Baba Simon milk supply model. ....	190
Figure 6 - Ubungo wholesale milk supply model. ....	191
Figure 7 - Mama Christina milk supply model. ....	193
Figure 8 - The motorbike distribution model. ....	193
Figure 9 - Decision Making in Tanga Fresh. ....	197
Figure 10 - Tanga Fresh milk supply model. ....	200
Table 1 - Key statistics urban Tanzania and Dar es Salaam living conditions. ....	52
Table 2 - Key factors affecting access to food for typical urban residents. ....	77
Table 3 - Top three sources of and destinations for maize to and from Kibaigwa Market. ....	93
Table 4 - Key statistics from Kibaigwa Market. ....	94
Table 5 - Lowest purchase prices for one kilo of <i>sembe</i> in different outlets, March 2015. ....	119
Table 6 - Prices received by different actors per kilo of maize. ....	138
Table 7 - Prices received by different actors per kilo of rice. ....	144
Table 8 - Retail prices for eggs in Dar es Salaam, November 2011 to October 2013. ....	168
Table 9 - Prices to producers and eaters for fresh milk supplied through different models. ....	202

## **Abbreviations**

- AFN - Alternative Food Network
- CPR - Common Pool Resource
- DRC - Democratic Republic of Congo
- GDP - Gross Domestic Product
- GM - General Manager
- KFC - Kentucky Fried Chicken
- NGO - Non-Government Organisation
- PhD - Doctorate of Philosophy
- TRA - Tanzania Revenue Authority
- TFDA - Tanzania Food and Drug Administration
- TSh - Tanzanian Shilling
- UK - United Kingdom
- UN - United Nations
- USA - United States of America



## Kiswahili words

There are a number of Kiswahili words and a few other terms that are not strictly Kiswahili, but that are frequently used in Tanzania and in this thesis. These are used because there is no equivalent English word or they more accurately describe the particular thing than an equivalent word in English. For example, the word shop in English evokes images that are quite different from the word *duka* in Kiswahili. This use of Kiswahili words does involve a certain abuse of the Kiswahili language as Kiswahili uses prefixes and suffixes to signify different forms of the word, which may sound awkward and be confusing to many readers of this thesis that is otherwise written in English. Thus, for example, I refer to *dukas*, whereas the correct plural form is *maduka*.

Below are some of these words commonly used in this thesis and their meanings in this thesis. Please take a little time to memorise them or have them easily available to refer to as you read.

Bodaboda	- Motorbike used to provide a form of taxi service.
Dagaa	- Small sardine/anchovy fish found in Tanzania's lakes and widely eaten.
Daladala	- Bus; normally a medium sized bus used for urban public transport on set routes.
Dalali	- Agent; these agents set up deals between people for a small commission.
Dona	- Whole meal maize flour made from grinding maize without first husking it.
Duka	- Shop; used here to refer to small grocery/general dealer stores.
Genge	- Vegetable stall; normally on the side of the road, not in the market place.
Gota	- Three-wheeled vehicle, pedal powered or motorised, used for transporting goods.
Kiswahili	- Swahili, the official language and lingua franca in Tanzania
Maandazi	- Doughnut like deep fried sweetened flour based snack.
Mamantilie	- A woman who cooks and sells street food.
Mchicha	- An amaranth green leaf crop.
Mkokoteni	- Push cart with two bicycle wheels used for carrying goods.
Mtindi	- Buttermilk or sour milk.
Pumba	- Chaff or bran produced during the husking of maize and other grains, in this case it is mostly maize bran. This is often used as animal feed.
Sembe	- Maize flour mostly used for cooking ugali.

- Semi - Truck trailer combinations that are the largest allowed on Tanzanian roads and are capable of carrying a load of around 30-33 tons.
- Ugali - Maize flour based stiff porridge; similar to maize porridge dishes eaten as staple food across eastern and southern Africa.
- Vitumbua - Rice flour based sweet bun cooked with oil in a special pan (This is the plural form).
- Wakulima - Farmers. This is the plural form, but I shall use it for the singular and plural.

## Chapter One – Introduction

### 1.1. Thesis outline

This thesis is an empirically and ethnographically grounded analysis of the nature of the main food system that produces and delivers most of the food eaten by residents of the city of Dar es Salaam. I call this a symbiotic food system and shall use most of this thesis to describe and analyse parts of that food system including in the elaboration of my main conclusions and lessons in Chapter Nine.

This chapter starts with an overview of the whole thesis and then moves on with a brief summary of the personal journey that led to my interest in this topic. That is followed by a description of Dar es Salaam, where the research for this thesis started. The value of the topic and Dar es Salaam as a site for such research is contextualised within the global challenge of achieving food security given, among other issues, rapid urbanisation and the broken agro-industrial food system.

Chapter Two explains my theoretical approach which moved from empirical research to theoretical analysis and conclusions through applying a combination of ethnography and the grounded theory approach. The chapter also touches on existing theoretical perspectives of relevance to my topic, some of which are important, but beyond the scope of this thesis to adequately address and others which I do address in the body and conclusion of the thesis in relation to my empirical findings.

Chapter Three sets out the methods used in gathering data. This is a qualitative and ethnographic study that has used a primary approach of following the food. This research started with the eaters of food in Dar es Salaam. What food they ate and where they got it from gave focus to the rest of the research.

Chapter Four starts to share the research findings with descriptions of a selection of eaters in Dar es Salaam, their circumstances and their food choices and food sources. The findings from these eaters raises important lessons for food accessibility and informed the continuation of the research through assisting to determine which food to follow and where.

Chapter Five gives a picture of important trading places, including *dukas* (small grocery/general dealer shops), markets and abattoirs that are key sources of food for eaters and key nodes within the food system. The supermarket system is touched on for comparative lessons, although supermarkets have not been found to be a dominant source of food for the majority of residents of Dar es Salaam, so it is a range of other trading places that receive more attention.

The following chapters tell the story of a cross-section of different foods studied. Chapter Six deals with the staple foods of maize, rice and potatoes. These are a core part of the eaters' diets and are grown, in most cases, quite far from the city. Chapter Seven looks at examples of high nutrition value foods, eggs and green vegetables, that are an important source of

protein and vitamins. These foods are well suited to urban and peri-urban production and local distribution, but they are also brought in from outside the city. Milk supplies are the focus of Chapter Eight, which looks at peri-urban milk production as well as the case of one of Tanzania's largest dairies that buys from small-scale *wakulima* (farmers) and delivers milk to the city. This provides an opportunity to explore the comparative advantages of the symbiotic and local food system versus a value chain development intervention.

Chapter Nine engages with the findings from the preceding chapters to draw out methodological, theoretical and policy lessons. The concept of the symbiotic food system, based on a multitude of interdependent actors who together deliver food at a city feeding scale is elaborated as a core part of the lessons. Based on these lessons and conclusions I share some considerations and recommendations on how we could work towards establishing more just, inclusive and sustainable food systems.

## **1.2. My journey to this PhD**

Before I started this PhD I had worked on rural development issues for about 24 years with a focus for much of that time on land and agrarian reform. In 1994, soon after our first democratic elections in South Africa (where I am from), I got involved in research to inform the development of new land reform policies for post-Apartheid South Africa. I went on to establish, along with others, a land rights and land reform non-government organisation (NGO), Nkuzi Development Association, that started operating in 1997. Nkuzi started out focussed on helping people claim land in terms of the Restitution of Land Rights Act (Act 22 of 1994). I believed land reform was part of the unfinished business of the liberation struggle and essential for equitable rural development. Visiting villages around the Limpopo Province of South Africa, explaining the right to land restitution and investigating the historical dispossessions of black South Africans from their land due to racial laws of the past, my colleagues and I started to be approached by people who were not talking about historical land dispossessions, they had recently been evicted or were facing the threat of eviction as we spoke to them. We felt bound to respond to that current plight of people with insecure land rights and so developed a programme working with farm dwellers and farm workers. The highlight of this work, for me, was the publication in 2005 of "Still Searching for Security", the report of a national survey of evictions from farms and still the only one to quantify the scale of these evictions in post-apartheid South Africa (Wegerif et al., 2005). I was shocked to find that in the first ten years of the 'new South Africa' more black South Africans had been evicted from farms - still largely white owned farms - than had received land through the government's land reform programme. I should point out that a similar number of people were evicted in the last ten years of the apartheid South Africa, nevertheless the research findings were a stark illustration of how seriously land reforms in South Africa were failing. Far from broadening ownership of land in the country, there was an increasing concentration of land as commercial farms consolidated into even larger units. The evictions were the ugly outcome of the increasing concentration of ownership in the agri-food sector from the farms to the retailing that in South Africa is dominated by a few

large supermarket groups. This concentration of ownership, from the land to the retailing, not only resulted in evictions, but also made it very hard for small-scale farmers to succeed and thus hard for the majority of black farmers (Greenberg, 2015; Manyelo et al., 2014; Heijden and Vink, 2013; Greenberg, 2013). Alongside the failure to transform the ownership and access to land, we were also seeing very disappointing outcomes in terms of production on land that the few land reform beneficiaries had received (Lahiff et al., 2012; Lahiff, 2008; Lahiff et al., 2008).

A ray of hope for me was in finding groups of people who, having lost patience with the government's land reforms, occupied land illegally and were producing food crops on that land. I presented a paper on the Mahlahluvani case at the conference "Land, Memory, Reconstruction and Justice: Perspectives on Land Restitution in South Africa" held in September 2006. My presentation showed how, in this case at least, people were themselves redistributing land, farming on the small pieces of land they gained and were creating or improving their own livelihoods (Wegerif, 2010). Sitting at the back of the hall was the renowned academic and founding editor of the *Journal of Agrarian Change*, Henry Bernstein. He said he appreciated my input, but somewhat sardonically stated that the production I was reporting was all very well, but it would not feed the cities. Indeed, the production I had seen at Mahlahluvani was not going to feed the cities, the farmers were producing for their own consumption and some local sales in the villages where they lived. Bernstein's question, more of a statement really, was not only a commentary on the particular case, but part of a wider critique of small farmers. It captured the views of many academics and policy makers from a wide spectrum of ideological positions, both neo-liberal and like Bernstein, Marxist. What I had found at Mahlahluvani was seen as 'nice', it was some 'poor' people in a rural area improving their lives in important, but humble ways. It did not, however, look like it could possibly represent or become an alternative mode of production to the dominant food system, in South Africa and globally. It was not seen as being able to compete with the large-scale capital intensive farms linked to a small number of food companies and corporate supermarket retail chains which are fully integrated into a global food system that is increasingly controlled by a few enormous corporations (Patel, 2007).

In 2008 I found myself moving to Dar es Salaam in Tanzania where I was taking up the job of Economic Justice Campaign Lead for Oxfam in horn, east and central Africa. My 16-year-old daughter Maya and I set out from our home in Tshwane in South Africa and took five days to drive to our new home. Along the way, we observed the substantial changes in scenery and modes of land use. There were the expansive farms, with very few people on them that we drove through for 100s of kms in northern South Africa and large parts of Zimbabwe. We started to see changes in Mozambique and then in Malawi and Tanzania. We found ourselves going through village after village surrounded by fields with food being produced. We passed bicycles carrying charcoal, agricultural produce and sometimes local beer in 25-litre containers. This was a pattern that we continued to observe even in Dar es

Salaam, where maize and green vegetables could be seen growing on any piece of land available and bicycles carrying agricultural produce were still a common sight. Soon after entering Tanzania we happened to go through a village where there was a vibrant market underway, spilling out dangerously into the road, with a range of foods and fruits on sale as well as colourful cloths and household goods. It was very different from villages in rural South Africa that hardly have a shop in them, where people, rather than producing food, travel to supermarkets to buy food in the nearest towns when they are paid or receive pensions or other state grants (Hebinck and van Averbeke, 2013; Hebinck, 2007).

Maya and I settled into our new home, eagerly explored, looking around to find out where we could get food and other basics we needed. Less than 100 metres from where we lived was a *duka* on the corner. A friendly woman ran the *duka* and was patient with us as we tried to explain what we wanted. Assisted with some Kiswahili books and dictionaries we used our, at first, very broken Kiswahili to request the items we needed and started to understand the counting as she passed our goods to us and asked for the Tanzanian Shillings (TSh) in return. Invariably there were a few other people from the neighbourhood buying as well or simply hanging out at the *duka*, making use of the few rough benches outside and chatting to people who passed by. They were quite amused by our Kiswahili efforts, but some also assisted us and we got to know them. We were buying eggs, milk, bread, juice, rice, maize meal, water, cooking oil and more from the *duka*. Not far from where we lived we found the Kawe Market and enjoyed the narrow streets lined with small shops and traders. There we got fresh vegetables, fruit, meat and various kinds of beans that were strange to us. There were also stores in the market area where we could get household items, such as cleaning equipment that we needed as we set up home.

New colleagues and acquaintances, both expatriate and Tanzanian, directed us to some of the few supermarkets in Dar es Salaam where I suppose they thought we would be more comfortable shopping. As I had a car I could get to the supermarkets fairly easily and indeed there were some things I wanted that were available at the supermarket that I could not get in the *duka*, for example real butter instead of margarine. It was soon clear, however, that the prices we paid at the *duka* were about the same as the supermarket on some items, even imported items like South African fruit juice, and actually cheaper on many things, especially the locally produced foods. A convenience, but also down-side of shopping at the supermarket, was that we could pick what we wanted from the shelves by ourselves; there was no need to ask for them. We would put them on the counter by the cashier who would enter them on the teller machine, which would display the amount that we had to pay. All of this without having to exchange one word. Clearly our Kiswahili was not going to improve much like that, nor would we meet any of our neighbours.

The vegetables at the supermarket, especially the Shoprite (a South African chain of supermarkets) did not look fresh at all and were considerably more expensive than the much more appetising produce at the Kawe market. After a few visits we stopped going to

the Shoprite and before the end of the year (2008) the nearest Shoprite store to us had closed down, leaving just two in the city.

After a month we moved to a new house. Opposite the gate of our new house was another small *duka* selling a similar wide range of goods as the one we had come to enjoy going to in our old neighbourhood. We soon got to know the young man who worked in the *duka*, met people in the area and carried on our impromptu Kiswahili lessons. We also met the owner of the *duka* who spent quite a bit of time there. When the *duka* owner got married we were invited and witnessed our first cutting of the wedding goat. A year later we moved again and there was another *duka* within a few metres of our new house that became a supplier for many of our food needs. That *duka* and the young men, twin brothers, who own and run it are some of what I miss most about Dar es Salaam after more than a year back in South Africa.

For my work in Tanzania I looked at, amongst other things, information related to agriculture and food security and found that the country produced most of its own staple foods and most of the agricultural production was done by small farmers (National Bureau of Statistics, 2012a). I became fascinated with understanding how this food system worked. Clearly it was very different from what was happening in South Africa and perhaps it offered an answer of sorts to Bernstein's challenge of feeding the cities with small-scale production. Working on a PhD seemed to be a good way to explore these issues in more depth and Dar es Salaam an ideal place to do this from, thus the journey of this PhD began.

### 1.3. Dar es Salaam

“As one of Africa's fastest growing cities in the second half of the twentieth century, it is an historical exemplar of socio-economic and cultural change associated with rapid urbanization. Moreover, both this historical context and dramatic political and (especially) economic liberalization in the recent past makes the city equally representative of contemporary trends in urban Africa, notably those associated with 'globalization' and the indigenous response” (Brennan et al., 2007: 1).

Dar es Salaam was founded in the 1860s, first as a main land base for Zanzibar's sultan in an area that up to that point had been occupied by small farming and fishing communities. After a slow start it revived as the capital for the German colonial rulers in the 1890s and from there grew rapidly becoming an important regional centre and harbour run by the Germans and then the British, before liberation of then Tanganyika in 1961 (Brennan et al., 2007). Historically trade stood at the centre of most people's livelihoods in Dar es Salaam, whether *duka* owners, hawkers, or visiting *wakulima* (farmers). Markets were an important part of the city's life and “[t]he Indian bazaar and two market halls, all in the Indian quarter, stood as the focal point of local business” (Brennan and Burton, 2007: 28). Many aspects of the food system in 1930s Dar es Salaam continue today, such as the important role played by urban and peri-urban agriculture in income generation and food supply. There has also

always been a need to bring food from other regions. Many of Brennan and Burton's descriptions of food in the city in those times could have been written today, for example, how "[c]ooked food items were also available for sale from people's verandahs, and from itinerant hawkers perambulating Kariakoo's dusty streets" (ibid: 32-33).

Contemporary Dar es Salaam is the ninth fastest growing urban centre in the world with a population of around 4.6 million today, up from less than 2.5 million in 2002 (National Bureau of Statistics, 2013a; City Mayors). Dar es Salaam is a prime example of the urban centres where almost all new population growth is going and where two thirds of the world's 9 billion population will be in 2050 (Wiskerke and Viljoen, 2012). Sustainably feeding such cities, where many of the residents live precarious lives in poverty, is an increasing challenge that any food system will have to meet (Lang, 2010; Davis, 2006). Dar es Salaam is within a country where agriculture still provides the primary income for around 80% of the population and food production is dominated by small-scale *wakulima* and pastoral production systems producing enough to make the country marginally food secure (FAOSTAT, 2016; TNBC, 2009). Urban agriculture also contributes to food security and provides particular opportunities for women (Lee-smith, 2010; Masashua et al., 2009; Jacobi et al., 2000). There are, however, pressures on food production, such as food price increases, 'land grabbing' and more erratic weather linked to climate change (Nolte et al., 2016; IPCC, 2014; Anseeuw et al., 2012; Gordon-Maclean, 2009; Division of Environment, 2006; Sulle and Nelson, 2013; REPOA, 2009b; REPOA, 2007a; REPOA, 2007b).

Economic liberalization has contributed to economic growth, including growth in agricultural outputs, and international investors including supermarket chains have begun to establish themselves in Tanzania (Crush and Frayne, 2011; National Bureau of Statistics, 2012a; Abrahams, 2009). Along with the improvements there are also challenges such as growing inequality and continued poverty which leaves many still dissatisfied (REPOA, 2007b; Coudouel et al., 1997). Food is available across the Dar es Salaam and nutrition indicators have improved steadily for the last ten years, however, despite improvements, chronic undernutrition continues. For example, stunting in children under five was 32% in 2015, with the rates highest in rural areas (Global Hunger Index, 2015; REPOA, 2009a; FAO, 2011b; REPOA, 2009b).

Tanzania is on the frontline of agrarian change, especially in the interface between the largely agrarian society and rapidly growing Dar es Salaam, yet there is a lack of empirical information on rural urban links and the nature of changes underway. Food security research has largely focused on rural areas and production, while urban planning has tended to ignore food and the rural links (Sonnino, 2009). There is little detailed information available on how Dar es Salaam is being fed and by whom. There is even less information on the behaviour (doing, thinking, feeling), of the actors involved in food provisioning. Without greater knowledge of these systems and the behaviour underpinning them we are unable to assess the level of enjoyment of the right to food and we are not well positioned to identify

possible interventions to improve the situation for the eaters of food or for the producers and others involved.

#### **1.4. The challenge of feeding the world is feeding the cities**

“As the world’s population rises to three-quarters urban by 2050, new, city-centric approaches to understanding global and local food systems are needed to ensure the production, distribution, and delivery of food to the growing number of urbanites” (Birch and Keating, 2013: 4)

“We will promote the integration of food security and the nutritional needs of urban residents, particularly the urban poor, in urban and territorial planning, in order to end hunger and malnutrition” (UN General Assembly, 2017: 22).

The challenge of ensuring food security is increasingly a challenge of feeding the cities and this is gradually encroaching the agendas of policy makers, donors and others with an interest in food security (UN General Assembly, 2017; Brinkley et al., 2013; Wiskerke and Viljoen, 2012; Oxfam, 2011). More than 50% of the world’s population is now in towns and cities and the process of urbanisation is continuing with no projected reduction in pace for the coming decades (UN, 2014). Feeding an ever growing urban population is a core part of the “daunting task of achieving adequate welfare and resource security for all 9 billion earthlings by 2050” (RSO, 2011: 3). Academics are increasingly referring to a wide range of challenges to our food system that include rapid urbanisation (Lang, 2010; Morgan, 2009). Central to any response must be ensuring food for the fast growing urban centres of the ‘developing’ world (i.e. in countries with lower income levels) where almost all new population growth will be (FAO, 2012a). As the United Nations said in 2014, “[c]ontinuing population growth and urbanization are projected to add 2.5 billion people to the world’s urban population by 2050, with nearly 90 per cent of the increase concentrated in Asia and Africa” (UN, 2014: 1).

Meeting the challenge of feeding the increased population of the world is also going to have to be done in an ecologically and socially sustainable way and meet the needs of food producers (Steel, 2012; IFPRI, 2011; Oxfam, 2011). The majority of those in poverty globally, approximately two thirds, are in rural areas and the majority of people in the least developed countries, concentrated in Africa and Asia, are in rural areas, thus rural development remains essential for progress and poverty eradication (IFAD, 2016; UNCTAD, 2015). The majority of those employed in least developed countries and the majority of rural people support themselves from agricultural activities (UNCTAD, 2015). At the same time employees in the agricultural sector across the world are amongst the worst paid and most exploited. In simple terms, we need to find ways to sustainably feed the growing cities where most people will be and at the same time benefit food producers in rural areas where most poverty still remains.

## 1.5. Food systems under siege

“Our global food system works only for the few – for most of us it is broken. It leaves the billions of us who consume food lacking sufficient power and knowledge about what we buy and eat, almost a billion of us hungry, and the majority of small food producers disempowered and unable to fulfil their productive potential” (Oxfam, 2011: 66).

“Though hunger comes in waves, not everyone will “drown” in famine. In fact, the planet’s food crises are making a handful of investors and multinational corporations very rich – even as they devastate the livelihoods of the poor and put the rest of world at severe environmental and economic risk” (Holt-Giménez and Patel, 2009: 1).

“Most stakeholders agree, in general terms, on the urgent need for reform. Measured against the requirement that they should contribute to the realization of the right to food, the food systems we have inherited from the twentieth century have failed” (De Schutter, 2014: 4).

Food systems across the world are under pressure and a wide range of people and organisations have identified that the currently dominant global agro-industrial food system is broken, or at least highly problematic and in need of change. This agro-industrial food system both has its own internal weaknesses and it creates pressures that threaten all food systems. In his final report to the United Nations Human Rights Council, titled “The transformative potential of the right to food”, De Schutter, the UN Special Rapporteur on the Right to Food, outlined a range of challenges to achieving the right to food and the reforms needed (De Schutter, 2014). Among the challenges are continued inequitable distribution of food and damage to the environment with the “most potentially devastating impacts of industrial modes of agricultural production” (ibid: 5) being the contribution to climate change driven by a narrow focus on increasing agricultural production. He called for “sustainable production”, “sustainable consumption”, “poverty reduction”, and said “[a] new paradigm focused on well-being, resilience and sustainability must be designed to replace the productivity paradigm and thus better support the full realization of the right to adequate food” (ibid: 10).

When the international aid and development organisation Oxfam launched its global “GROW” campaign in 2011 it was in response to what was identified as a “broken food system”. Broken because close to 900 million people go hungry, because it drives climate changes through land use changes and emissions and is vulnerable to the impacts of climate change; and because it leaves hundreds of millions of small farmers struggling to survive with little power in the food system (Oxfam, 2011).

There are challenges that are in part created by the agro-industrial food system and those that make that system vulnerable and there are factors that combine to put all food

production and food systems under siege. Lang identifies what he calls the New Fundamentals as: “Climate Change” affecting food production; “Water”, the supply of which is under pressure, not least from agriculture that is often the biggest user of water, a stress that will undermine future agricultural production; “Biodiversity and Ecosystem Support” with dramatic declines in the range of bio-diversity and ecosystems stretched beyond coping by our food demands and modes of exploitation of natural resources; “Energy and Non-Renewable Fossil Fuels” with a food system that from production to distribution is highly dependent and rapidly consuming finite resources; “Population Growth” which is outstripping increases in food production; “Waste” of massive quantities of food; “Land” that is under increasing pressure from a range of demands including for fuel and due to urbanisation; “Soil” degradation at unprecedented level despite our dependence on soil fertility; “Labour” that is aging in many countries and continuing to face poor working conditions exacerbated by increasing casualization; and “Dietary Change and Public Health” with the “nutrition transition” in developing countries accelerating the consumption of processed, sugary and salty foods and beverages resulting in “rocketing obesity alongside continued hunger” (Lang, 2010: 90-93) .

Morgan and Sonnino refer to the “new food equation” made up of five trends that have “shattered” the complacency of the “global north” in relation to food. First was the dramatic rise in food prices in 2007-08; Second is increasing food insecurity as population grows and diets of the middle classes change putting more demand on the productive capacity just as climate change is also undermining production; Third food security, or rather insecurity, is now recognised as a ‘national security’ issues in the wake of political protests in more than 60 countries linked to the food price surge; Fourth, the impacts of climate change that are predicted to hit poorer countries with greater food security challenges the hardest; and Fifth, land conflicts driven by the new wave of investment in agricultural land around the world as richer countries seek to secure land to ensure their own food security (Morgan and Sonnino, 2010: 209-210).

The land matrix initiative<sup>2</sup> recorded large land deals between 2000 and 2012 affecting over 80 million hectares of land, the majority of that in Africa. The land targeted in these large land deals in Africa was estimated at 4.8% of Africa’s agricultural land and more than the land size of Kenya (Anseeuw et al., 2012). An assessment commissioned by the Land Policy Initiative<sup>3</sup>, drew on some of the same material and came to similar conclusions including identifying around 40 million hectares of land in Africa subject to large land deals (UNECA, 2013). It should be noted that many of these deals were not at that point concluded and many that had been concluded were not necessarily resulting in production. Not only were

---

<sup>2</sup> The land Matrix was established by a group of organisations to gather and share data on large land deals around the world (<http://www.landmatrix.org/en>).

<sup>3</sup> The Land Policy Initiative is a tri-partite project of the African Union Commission, the African Development Bank and the United Nations Economic Commission for Africa. It leads land policy work for the African Union.

rich countries with limited agriculture potential themselves, like some of the gulf states (Morgan and Sonnino, 2010), acquiring land to meet food needs, but there was a drive to produce 'bio-fuels' in response to European Union quotas and companies looking for new places to invest during the financial crisis that wiped billions off stock exchanges. This surge in 'land grabs' was informed by the belief in the value of capital intensive and corporate models of agricultural production, normally plantation and high external input monocropping fuelled by corporate profit seeking. It met the desire for profit and the belief in a dominant modernisation paradigm. Increasingly it is not just an issue of land acquisition, out-grower schemes can create a dependency on seeds, other inputs and markets controlled by corporations, thus integrating small farmers into global markets leaving them with very little room to manoeuvre. Some interventions are as much about new technology transfer and forms of investment and organisation of marketing that are just as much orientated to the "dominant frameworks of global agribusiness and capital accumulation" (Amanor and Chichava, 2016). 'Flex crops' are changing the patterns of capital accumulation and power relations requiring new analysis of large land based and agricultural investments (Borras et al., 2015). The investments are from Africa's traditional sources of investment, mostly from Europe and North America, but also they are coming from new emerging economic powers, such as China, India and Brazil (Amanor and Chichava, 2016; Nolte et al., 2016). The interests of these new powers are not different from other international investors, "[t]hey instead reflect the dominant trends in contemporary agricultural development that promote market penetration, capital accumulation and the integration of smallholders into existing forms of market accumulation" (Amanor and Chichava, 2016: 21). Local elites, urban and rural, are also acquiring land resulting in the growth of medium sized farms, potentially at the expense of the smaller farmer and threatening land availability (Jayne et al., 2014; Jayne et al., 2003).

New reports from the Land Matrix (Nolte et al., 2016) and GRAIN in 2016 both confirmed the continued investment interest in land in Africa and GRAIN concluded that "while some deals have fallen by the wayside, the global farmland grab is far from over. Rather, it is in many ways deepening, expanding to new frontiers and intensifying conflict around the world" (GRAIN, 2016: 3). They highlight the increasing impacts of climate change, the growing role of the financial sector, including offshore and illicit funds, and note that "gaining access to farmland is part of a broader corporate strategy to profit from carbon markets, mineral resources, water resources, seeds, soil and environmental services" (ibid: 3).

Given the above, it is of critical importance to find and grow a food system, or systems, which is resilient in the face of these challenges and helps to mitigate, or at least not exacerbate, such pressures.

## 1.6. Taking on the challenge through learning from Dar es Salaam

“Food distribution systems are not only market chains which ensure the conveyance of goods and the communication of price information, not merely a link between the classic dyads of analysis, the producers and the consumer, the peasant and the state. They are also organisations rooted in an articulated social and economic structure”. From the book “Feeding African Cities: studies in regional social history” (Guyer, 1987: 6).

This study takes on the real-world challenge of finding ways to ensure the right to food for the residents of fast growing cities in a way that is beneficial to the producers. It does this by starting with and learning from what already works and exists, through documenting and analysing the food system that feeds Dar es Salaam with its over 4.6 million residents. This is in part the challenge of finding a viable alternative, one that can sustainably feed the cities, to the globally dominant agro-industrial and corporate dominated food system that, despite its shortcomings, still has the support of many policy makers and indeed many academics. The starting point, for me, has been to understand what already exists in Dar es Salaam, how that works and what its strengths and limitations are.

The initial field research revealed both the dominant food system, which I refer to as the symbiotic food system, for Dar es Salaam and some of the issues of particular interest to research in more depth. The symbiotic food system is dominant because it clearly provides most of the food for most of the eaters in Dar es Salaam. A number of recent reports have confirmed the continued importance for urban food security and income earning of what they refer to as the informal sector, which fits to a large extent with the symbiotic food system (Roever and Skinner, 2016; Skinner, 2016). Even in South Africa, with its highly concentrated ownership in the food sector, the informal sector continues to play a vital and little recognised role ensuring access to food, especially for poorer urban residents (Battersby et al., 2016; Skinner and Haysom, 2016).

The symbiotic food system is not the only food system operating in Dar es Salaam. There are elements of the global agro-industrial food system in the form of supermarkets, fast food chains like Kentucky Fried Chicken and foods imported from all over the world. These food systems overlap, they impinge on and influence each other, and there are supplies of food from the smallest *wakulima*, such as eggs, which are found in the biggest supermarkets. There are imported foods from all over the world, such as South African fruit juices, that are found in almost all local *dukas*. At the heart of the symbiotic food system are the main foods eaten in Dar es Salaam that are produced primarily in Tanzania and processed and retailed with little direct contact with any elements of the agro-industrial food system. This has focussed the field research, which followed those foods, and did so through applying an ethnographic and grounded theory approach elaborated in the next chapter.

## **1.7. Conclusion**

This thesis and the research that went into it arose out of my personal and professional journey. A journey that, partly by chance, placed me in Dar es Salaam and asking certain questions about food provisioning, which it turned out Dar es Salaam is an excellent place to answer. In particular there was and still is an opportunity to see how such a city is being fed in a country where large numbers of small producers dominate the agrarian space, but the agro-industrial food system is making incursions both in the production systems and in retailing, as exemplified by supermarket and international fast food chains trying to find new market opportunities in the country.

When I started the research I had little idea of what I would find. Now, in the rest of this thesis, I share how I went about the research, what I found and what lessons, both of direct social relevance and theoretical importance, have emerged.

## Chapter Two – Grounding and Applying Theory

### 2.1. Introduction

This chapter elaborates the analytical approach used for the interpretation of the data collected in the course of this study. In doing this I position my approach in relation to some of the main theoretical strands in food systems and related literature. I have primarily applied a combination of ethnography and grounded theory, starting with exploring a real-world problem, which was elaborated in the last chapter, and through an iterative process drawing on and developing theoretical positions that help to answer the research questions and explain the empirical findings.

In a study of this nature there are a wide range of different theoretical perspectives that could be applied. It was beyond the scope of my research and is beyond the scope of this thesis to thoroughly engage with all of these. What I do in this chapter is to explain how I use a grounded theory approach and touch on some of the important theoretical positions to indicate to the reader that they are deserving of attention and to make clear which positions I have chosen to apply and engage with and which I have decided I cannot address in this thesis. In doing so I explain some of the reasons why I find particular theoretical perspectives less useful.

A common thread running through the perspectives I touch on here is the different forms of modernisation and normative positions that start with quite fixed assumptions about what is, or should be, shaping the way we look at and understand the social systems being researched. This is combined with some relevant work that raises questions about the more entrenched theoretical positions. With my empirical research and application of grounded theory approach, I try to learn from different positions while resisting being steered by pre-set assumptions. I believe this increases the opportunity to find new and equally valid, perhaps more useful, ways of understanding phenomena found.

The theoretical positions that I do engage with are picked up again in the concluding chapter following the brief introductions in this chapter.

### 2.2. Grounded theory; addressing the research problem and research questions

“Too much of the knowledge produced has become more or less irrelevant to the ‘nitty gritty’ of how social actors experience and attempt to penetrate and shape their conditions of existence. The social sciences and humanities have a tendency to become self-referencing discourses with theories related only to other theories in everlasting chains of the history of ideas rather than of the world” From the “Manifesto for *Ethnography*” (Willis and Trondman, 2000: 14).

“However, the nitty gritty of everyday life cannot be presented as raw, unmediated data – the empiricist fallacy, data speaking for itself” (ibid: 12).

My approach to this thesis has tried to find a middle ground between the two extremes critiqued in the quotes above. I did not start from a specific hypothesis. The research starts with a real-world problem: How to sustainably feed the large and fast growing cities, where an increasingly large majority of the world's population is, in a way that is beneficial to producers, most of whom still live in the areas where there is most poverty. A good starting point for addressing this problem, or challenge, is to find out how such cities are being fed now. The main research question arising from this was: what are the patterns of provisioning for the main foods of Dar es Salaam residents; how and by whom are these patterns shaped and how effective are they in meeting the needs of all people within the pattern of provisioning? The more specific research questions focussed on whether the system responds to the needs of the eaters? Does it get food to where it is needed? Do people earn reasonable incomes from their work in the system? Is it competitive in pricing and quality? Does it appear sustainable? Important for answering whether the system works or not was asking if it meets the needs and aspirations of the human actors in the food system as they express them through their words and actions. The main research question shifted to some extent during the research as I moved from looking at patterns and processes to looking at the food system and how it is created and sustained. I have also had to make choices, given limitations of time and resources, about what issues, empirical and theoretical, to focus on.

I applied actor orientated ethnography for the gathering of data that brings out the heterogeneous everyday practices and perspectives of the actors involved and reveals how they shape their livelihoods, including how they respond to and reshape systemic and external pressures (Long, 2001; Arce and Long, 2000). The grounded theory approach, elaborated more below, was used to take and use the data gathered as the starting point for finding, or developing, concepts and theories that could explain what had been found empirically (Hammersley and Atkinson, 2007; Heath and Cowley, 2004; Strauss and Corbin, 1994; Charmaz, 2012).

Willis and Trondman call for a theoretically informed humanistic ethnography that has a level of generalizability of relevance to contemporary society (Willis and Trondman, 2000). To achieve this they put forward the notion of a "theoretically informed methodology for ethnography", they are seeking 'Ah ha' effects and 'surprise' "in the space between experience and discourse" (ibid: 12). They advocate avoiding both the "empiricist fallacy" and the irrelevance of much knowledge produced, by applying a "two-way stretch, continuous process of shifting back and forth, if you like, between 'induction' and 'deduction'" (ibid: 12). Ostrom shared a similar sentiment, proposing that "[u]nderstanding how individuals solve particular problems in field settings requires a strategy of moving back and forth from the world of theory to the world of action (Ostrom, 1990: 45).

This takes the ethnographic research beyond qualitative description, which has a lot of value (Sandelowski, 2000), but is not satisfactory, despite Sandelowski's arguments, for explaining

how and why things work the way they do. It lacks the development of theory that makes findings interesting and potentially applicable in other contexts.

The actor orientated approach arose to a large extent in response to the modernisation mindset that shaped much of development thinking and practice in the last century with its assumption of a linear process of 'development' based on 'Western' experience and involving a particular package of discourse, technology and institutions (Long, 2001; Arce and Long, 2000). As Arce and Long put it, "[f]rom this perspective, the prerequisites of social development could only be achieved through the replication of successful European and American experiences and models" (Arce and Long, 2000: 5). In relation to the study of markets in Africa, Hill stated that "scarcely any economists in Africa are yet showing any awareness of the need to study the structure of the indigenous economy". She goes on to question, rhetorically, why they would show any interest given that this is something "which they have always been obliged to regard as primitive" (Hill, 1963: 441). While Hill was writing some time ago, her words remain valid today. Despite the modernisation approach giving little or no space for the recognition and valuing of local people's practices and own paths of progress (their own diverse range of modernities), the targets of development interventions have in practice consistently reinterpreted interventions and ideas of modernity and appropriated aspects they wanted to into their own views of the world and practices (Arce and Long, 2000). People have consistently refused to be passive victims of the modernisation project.

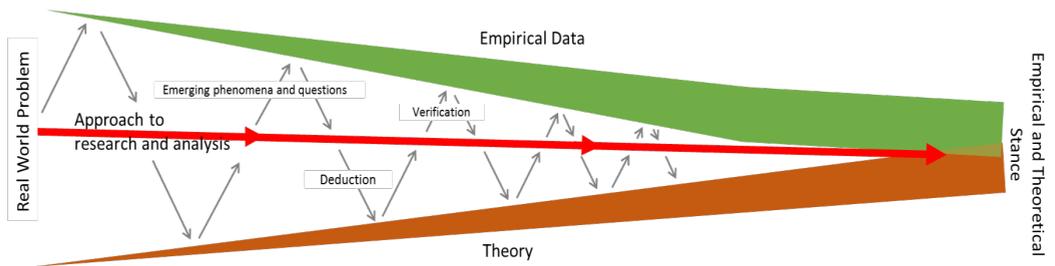
The actor orientated approach set out to explore the diversity of responses by human actors to projects of modernisation and wider systemic influences. The actor orientated perspective is not satisfied with allowing a-priori assumptions, mostly taken from one or other form of a structuralist perspective, to shape the exploration of how society, or in this case the food system, works (Long, 2001). Long and van der Ploeg (1994), for example, accept the importance of social relations of production and wider structural settings, but reject these as adequate explanans of the levels of heterogeneity found. They state, therefore, that "our emphasis is on the question of how these specific social relations are constructed, reproduced and transformed" (Long and Ploeg, 1994: 81). My research deliberately avoided starting with any specific state or NGO intervention, starting rather with the everyday practices of eaters in Dar es Salaam. The paucity and limited influence of external interventions in the shaping of the food system I found in my research and the way aspects of modernity that were found, mostly in the form of technology, were incorporated on people's own terms, is revealing. Development interventions just aren't shaping society as much as we might think given the amount of research on such interventions.

In contrast to starting a-priori with common linear views of development, this research and analysis takes on the task of looking at what exists and trying to understand its logic. In doing so it is necessary to explore the diverse sets of social and cultural norms and relations along with the economic relations involved in shaping the food system and the nature of transactions taking place when food is procured, sold and eaten. In doing so I move beyond

the so-called formalist-substantivist debate of the 1980s (Lie, 1997; Polanyi, 1957; Granovetter, 1985). I don't see the food system I am studying as 'primitive' and 'pre-modern, but at the same time I do not assume it is governed solely by the rules of utility maximisation. Following an actor orientated approach I understand markets, which are a central part of the food system, as dynamic and emerging and changing over time, as made of the associations of human actors (e.g. traders, transporters, eaters, and farmers) and non-human actors (e.g. food products, market stalls, trucks, roads, motels, polices, regulations)(Latour, 2005). Markets are treated as being enacted by human and non-human actors that operate within parameters of economic utility as well as within the boundaries of social norms. Markets emerge out of social struggles and stand for both place and processes of interaction and exchange between actors in the food system (Watson and Studdert, 2006; Hebinck et al., 2015; Dille, 1992). Understanding the particular assemblages and processes in the food system feeding Dar es Salaam and how and why they exist and work has been the main task in analysis of the data (DeLanda, 2006).

What the concept of grounded theory assists with is the development of theory without starting from set and pre-existing theoretical positions that can narrow ones exploration of the as yet undiscovered (Charmaz and Mitchell, 2001; Heath and Cowley, 2004; Strauss and Corbin, 1994). This is a good fit for my actor orientated ethnography that is dedicated to starting with the real and varied lives of actors, but does seek theoretical explanation of phenomena found. In grounded theory the "[t]heory evolves during actual research, and it does this through continuous interplay between analysis and data collection" (Strauss and Corbin, 1994: 273).

When I started, I had a sense of some of the theoretical debates and concepts that could be applicable to the research and that to some extent shaped the methodological approach, but it was a fairly 'thin' sense of these debates. I had no hypothesis or fixed theoretical problem to resolve and remained open to questioning which theories helped to explain the phenomena found empirically (Heath and Cowley, 2004). As I gathered empirical data that raised new research questions which I looked to theories to help answer and which also led to adjustments in the approach to the field work. The core of the theoretical inquiry came down to trying to understand how the system worked in the way it did and why it worked in the way it did. It became an iterative process of gathering empirical data and out of that identifying phenomena which were tested against theory and likewise various theories were tested against the empirical situation. This drove a three-part process of: 1) 'thickening' the understanding of the empirical situation; 2) narrowing the focus of the research and the research questions; and 3) thickening the theoretical understanding of how and why the system works in the way it does (Figure 1)(Heath and Cowley, 2004). The results of the research process are, a rich understanding of the empirical situation and theories engaged with and developed to come to the point where I have arrived at an understanding and theoretical explanation of the main food system that feeds Dar es Salaam.



**Figure 1 - Iterative grounded theory approach as applied to this research, which drew on Heath and Cowley, 2004**

The grounded theory approach has been much debated, including between the two academics, Glaser and Strauss, who are credited with first developing the methodology (Walker and Myrick, 2006; Heath and Cowley, 2004). It has also been widely adapted and used in different disciplines of study, I continue with that adaptation not least because I am applying it to the study of a food system, whereas a lot of the grounded theory work, including the original Glaser and Strauss studies, has been carried out in the field of health care. I feel confident to say I have applied grounded theory as I have to some extent applied all the key elements of the methodology, described by Strauss and Corbin as: 1) “grounding of theory upon data through data-theory interplay”; 2) “making of constant comparisons”; 3) “the asking of theoretically orientated questions”; 4) “theoretical coding”; and 5) “the development of theory” (Strauss and Corbin, 1994: 283). I have also used ‘theoretical sampling’ that Charmaz and others have argued is another strategy of grounded theory (Charmaz, 2012; Walker and Myrick, 2006) as I have gathered further data to test and fill out more detail of emerging theories, such as about where food comes from and how it is traded.

I did not follow a strict form of coding, in part due to my reluctance to establish typologies, especially early in the study, that run the risk of excluding an understanding of the complex and highly heterogeneous nature of the actors, process and relations involved. Instead I preferred to follow an ethnographic approach to gathering and representing people’s lives and experiences that respects and records “the irreducibility of human experience” (Willis and Trondman, 2000: 5). This provides a “practical comprehension of the world quite different from the act of conscious decoding that is normally designated by the idea of comprehension” (Bourdieu, 1999: 135, cited in Willis and Trondman, 2000: 5). A form of coding was, however, still necessary and involved organising my analysis of field data, first of all around quite practical questions such as what food people were eating and where they got it from? Such practical questions, necessary for description of the food system, then led to more conceptual questions, such as why eaters got the food where they did. Leading, amongst other things, to an understanding of what is important for eaters in terms of access to food. With food traders and producers, the conceptual questions involved asking how

people started. How they gained the skills needed? How and from there did they access the capital required? All of this involved a level of more and less structured coding and comparison across actors and nodes in the food system to lead to findings at the level of substantive theory applicable at least to the food system of Dar es Salaam.

A next level of abstraction was to seek what Strauss and Corbin refer to as “[h]igher order grounded-theory”, also referred to as ‘formal theory’, that moves us from substantive theory applicable in a particular context to social theories that can have relevance elsewhere and in other fields of study (Strauss and Corbin, 1994: 281). This involved exploring what the core ordering principles of the food system are. What holds together the processes and relations found to create and reproduce the system and could these ordering principles be applicable elsewhere? Comparison was required across the different parts of the food system, the different foods and different nodes from retailing, indeed even eating, to the production. It also involved reading about experiences from other countries and times and engagement with existing theory that could help to both explain the phenomena and indicate that indeed these phenomena are found elsewhere. Out of this I have developed theory and “can claim predictability for it, in the limited sense that if elsewhere approximately similar conditions obtain, then approximately similar consequences should occur” (ibid: 278).

### **2.3. Post structural, economics and the peasantry**

“Therefore, the system of theoretical economics constructed on the entrepreneurial activity of homo economicus as a capitalist is clearly one-sided and is inadequate for learning about economic reality in all its actual complexity” (Chayanov, 1986: 225).

“A fruitful analysis of human action requires us to avoid the atomization implicit in the theoretical extremes of under- and oversocialized conceptions. Actors do not behave or decide as atoms outside a social context, nor do they adhere slavishly to a script written for them by the particular intersection of social categories that they happen to occupy. Their attempts at purposive action are instead embedded in concrete, ongoing systems of social relations” (Granovetter, 1985: 487).

One paradigm from which people analyse food systems, and the economic systems and social changes they are inevitably a part of, is essentially structuralist. This applies both to the orthodox economic and political economy perspectives, both of which fail to grasp the heterogeneity seen in the varied responses of actors at the local level (Long, 2001). This structuralist approach dovetails with modernisation theory with its assumptions about the necessity of particular forms of commoditisation and incorporation into the market (Arce and Long, 2000).

#### **2.3.1. Orthodox economics**

As this study looks at how commodities are produced, processed, distributed and consumed, it could be looked at and analysed through an orthodox economics perspective.

This is such a dominant perspective informing much policy making and many development interventions within the modernisation paradigm that it cannot be ignored. Within economics there is an obsession with numbers, focussing on markets as places of exchange of narrowly defined economic values, essentially price. Within that logic it becomes possible to analyse what is happening simply through tracking economic statistics (Piketty, 2014; Hobbs and Young, 2000). This assumes that all human behaviour, especially of people in business, whether producing or trading, is shaped by efforts to maximise utility through individuals making decisions based on improving their own material interests. The competition between people all trying to advance their own position is supposed to ensure the distribution of capital to the most efficient users of it who ‘progress’ through growing their enterprises, better combining their control of capital and labour for more profit. In the process the successful displace others who are less economically efficient from the sector (Giddens, 2013; Lie, 1997; Becker, 1976). The implication of this approach for the study of markets and in this case the food system, is that “[i]n other words, the neoclassical market is shorn of social relations, institutions, or technology and is devoid of elementary sociological concerns such as power, norms, and networks” (Lie, 1997: 342).

This approach does not explain many of the phenomena I found in the field research. It does not explain how and why so many actors within the same system are working with and alongside each other over extended periods of time, instead of competing for dominance. Ostrom points out that “what is called “rational choice theory” is not a broad theory of human behavior but rather a useful model to predict behavior in a particular situation—a highly competitive market for private goods” (Ostrom, 2010: 19). Certainly one can find specific situations when specific individuals do behave in ways predicted by rational choice theory. What Ostrom goes on to make clear, however, is that many situations do not fit the specific circumstance of such competitive markets, with consumers having all information to make rational choices about best utility and not influenced by other factors, such as learnt norms of behaviour and different forms of relationships with other people involved. In practice most of our decisions, even financial transactions, are not only shaped by ‘rational choice’ with its focus on material utility.

Those looking at farm production from an orthodox economics perspective generally do not analyse the specific and complex circumstances of agricultural production. Academics from a range of disciplines have noted before, in relation to agricultural production and markets in Tanzania and beyond, that there are other modes of farming, other structural factors and social and cultural influences at work (Flynn, 2005; Granovetter, 1985; Polanyi, 1992; Hydén, 1980; Van der Ploeg, 2008). One example is Chayanov’s attempt to develop a theory of the peasant economy where he explored questions ignored by most economists, such as what the impact is when economic activity is happening, not so much through the entrepreneur hiring labour, as through the organisation of family production (Chayanov, 1986). Just as it is not helpful to fall into simplistic analysis based purely on rational choice theory, so it is also not helpful to become as rigid in assuming other set social norms will always dictate

specific behaviour. In analysing social influences of behaviour in markets and beyond, Granovetter cautions that we do not fall into 'oversocialized' views of social influence that can become as rigid and structuralist as economic ones, thus leaving little space for understanding the complex and shifting cultural and social relations actors are involved in (Granovetter, 1985).

Critical voices from within the economics field in the last years, notably Piketty in 2014 (Piketty, 2014), have also brought home how market forces are shaped by politics. At a macro level Piketty makes a similar argument to that made by anthropologists and sociologists at the more micro level of human relations, namely that the nature of economic relations and changes to these have not been driven by economic factors alone. One of Piketty's two main conclusions in his book "Capital in the Twenty First Century", is that we should "be wary of economic determinism...the history of distribution of wealth has always been deeply political". He goes on to say that "the history of income and wealth is always deeply political, chaotic, and unpredictable. How this history plays out depends on how societies view inequalities and what kinds of policies and institutions they adopt to measure and transform them" (Piketty, 2014: location 723). The other main conclusion Piketty reaches, is that economic forces left unchecked will continue to drive inequality to levels that are not sustainable (ibid). This re-enforces the urgency of looking for and enabling other viable forms of relations of production and exchange that support greater equity and with that greater sustainability.

### **2.3.2. Political economy and the peasantry**

There is an important political economy school of thought that has helped to reveal the nature of agrarian relations, which fundamentally shape food production, from an essentially Marxist perspective (Borras Jr, 2009; Bernstein, 2010, 2001, 1981). This is useful in analysing the economic and power relations that actors are involved in, including the ongoing debate about the place of the peasantry. This thesis presents empirical information and a perspective on these relations through the powerful lens of the food system that feeds the city of Dar es Salaam. In doing this I have attempted to apply Bernstein's four key political economy questions - "Who owns what? Who does what? Who gets what? What do they do with it?" (Bernstein, 2010: 22). These are interesting questions that I have sought answers to in my field research. I found, however, that analysing the findings through these questions channelled me into the identification of what become quite a narrow set of types of actors and fairly shallow description of the nature of relations these actors have with other actors (human and material). This level of abstraction can be useful for bringing out certain dynamics, but it lacks nuance and prevents the exploration of the complexity and diversity of different types of relations. The political economy perspective and approach is, therefore, not the overarching framework used for this research and analysis of the data. Early in the study it was found to have limitations when it came to explaining the relations empirically observed, as mentioned above and elaborated below.

The political economy approach falls down in exactly the same way the orthodox economic approach does as it holds the same belief in the essential role of external forces to drive change and the essential role of accumulation in driving 'progress' and with it class differentiation. It is assumed that without accumulation by some there can be no progress and therefore the peasant tendency toward equity and growth through multiplication is seen as an obstacle to progress (Harris-White, 2012; Long, 2001; Hydén, 1980).

Bernstein has been a key contributor to the thinking on the political economy of agrarian change and the nature of agrarian society for decades (Bernstein, 2010, 2009). He has argued that "[q]uestions of what and who 'peasants' are, where they are, and indeed why they are, in the world of global capitalism in the early twenty-first century, remain as difficult, elusive and contentious as they have been throughout the history of industrial capitalism, perhaps even more so" (Bernstein, 2001: 26). In addressing this question, he quotes Marx:

"what has to be shown in order to 'prove' the capitalist nature of such social formations is that the social entities and differences which form [their] social division(s) of labour ... are only explicable in terms of the wage labour/capital relation" (ibid: 29).

Bernstein then argues that by the end of the colonial era "the social formations of the imperialist periphery are capitalist", as per Marx's definition (above), and therefore the peasants in them "had been constituted as petty commodity producers within capitalism" (ibid: 29). Despite the question being difficult and elusive, Bernstein, with a sweeping assumption about the spread of capitalist relations of production and equally sweeping theoretical position, has defined the place and nature of the peasantry, by which he is referring to all the *wakulima* in Tanzania, apart from the few large corporate operations.

The identification of peasants/small farmers as 'petty commodity producers' occupying a contradictory position that combines the roles of owning capital and providing labour (Bernstein, 2010), is also not satisfactory. It assumes that they are on their way either to becoming capitalist owners and employers themselves or they will "be liquidated as a class" and, if they are lucky, become labourers employed by others (Harris-White, 2012; Hydén, 1980). In making such assumptions, even if one allows for them to be stuck in this limbo position for a long time, there is a failure to see this social group as having the possibility of being and/or becoming a class on its own with its own logic and ordering principles, not simply an incomplete part of a processes towards full capitalist relations (Hydén, 1980).

The social and economic relations observed in the food system feeding Dar es Salaam, cannot be explained in terms of the wage labour/capital relation alone, just as they cannot be explained by 'rational' economic choice theories. In my research, I have found people's actions, lives and interests are more complex and include the ability to take into account common and mutual interests. Just as real people, in my experience, in relation with other people do not make purchasing or selling decisions only based on narrow calculations of

their own best material interest, neither do they make decisions on the use of their labour power and capital on the basis of narrow calculations of economic return on such inputs.

There is another school of thought that embraces the notion of the peasantry and argues that indeed the peasantry exists as a group of farmers who operate within a 'peasant economy' shaped by a peasant mode of ordering that offers a different (different to the entrepreneurial or corporate/empire farm modes) peasant driven path of development (Van der Ploeg, 2014; Van der Ploeg et al., 2012; Van der Ploeg, 2008; Chayanov, 1986). This overlaps with the concept of food sovereignty that has been embraced by the international peasant farmer organisation La Via Campesina and debated amongst activists and academics (Edelman et al., 2014; La Via Campesina, 2011).

Most of the *wakulima* encountered in this research, the ones who are producing at least in part to feed Dar es Salaam, all employ some labour, largely seasonal and casual labour. This is an important difference from Chayanov's 'peasants' and 'family farms' that as Thorner put it "were pure in the sense that they depended solely on the work of their own family members" (Chayanov, 1986: xiii). The issue of employment of labour on peasant/small farms and the relations involved with that employment also receives almost no attention from the food sovereignty movement and from Van der Ploeg in his popular writing on the peasantry (Van der Ploeg, 2014, 2008). Bernstein in engaging sceptically with food sovereignty, asks the important question; "[a]nd what of farm workers?" (Bernstein, 2013: 13). The question of labour employed on farms and the implications of that and other factors for class formation need to be addressed.

### **2.3.3. *Wakulima* and rural class formation or the lack of it**

In this thesis, I use the Kiswahili word *wakulima* (farmers), instead of other possible terms such as peasants or smallholder farmers. This works for me as it is the Tanzanian farmer (*wakulima*) that is being referred to and these farmers have particular characteristics that may differ from farmers and peasants in other places. Referring to a 'farmer' could imply that I am talking about farmers as they exist in the UK, Europe or North America today, whereas Tanzanian farmers/*wakulima* are generally different from those. There has been a long-standing debate around the appropriateness of the use of the notion of the 'peasantry' or even 'peasantries' to describe 'African cultivators' with some arguing that it does apply due to the nature, even though diverse, of the African peasantry and their incorporation into global capitalism (Saul, 1974). Using the term 'peasant' would position me in relation to a debate that for me is unresolved and I am unable to resolve to my own satisfaction in this thesis. It would tend to imply that I am referring to peasants as they have been described and theorised much more thoroughly and historically in other contexts of Europe, Asia and Latin America or as inadequately theorised in the African context.

The core of the *wakulima* that I will be referring to in this thesis, in particular those producing food that feeds Dar es Salaam, are producing on between 1 and 10 hectares, depending on the soil quality and water availability, using their own, family and some

casual employed labour. They are providing for the bulk of their family staple food needs from their own production and selling surplus food and/or other cash crops. At the lower economic end of the spectrum they provide labour on other people's land, but this is rare amongst those who supply Dar es Salaam. At the higher end of the spectrum they engage in other economic activities outside farming, often in the food industry, such as trading. Those not supplying Dar es Salaam, tend to have constraints related to health, old age, lack of land and/or lack of production capital. These, while still producing for themselves, will often spend more time providing labour on other people's land. A distinction needs to be made here between two main types of labourers. One: normally younger people who are using labouring for someone else as a means to gather capital and experience in order to farm more productively for themselves in the future. Two: often the aged or unwell, or those who suffered some other loss of productive assets and capability, who are farming for someone else as a means of livelihood with little prospect of creating more independent production for themselves.

Importantly the Tanzanian *wakulima* does not have the same relationship with the land as either landed or tenant peasants in Russia (that Chayanov wrote about) or on the land of the gentry in the United Kingdom before the enclosures and mass urbanisation along with industrialisation. Neither do the Tanzanian *wakulima* bear much resemblance to the Latin American peasants who have their own differences within and between countries and, among other notable points, include in some countries large numbers of descendants of European settlers. The peasants of Brazil, as just one example, have particular relations and current and historical struggles with a bourgeoisie that look very different from any social class in Tanzania and involve very different types of struggles (Martins, 2002; Branford and Rocha, 2002; Barman, 1977).

Another key factor in the class analysis of the peasantry and farmers is their relationship to the exploitation of labour. As mentioned above, *wakulima* do consistently employ labour, the issue becomes the nature of that employment relationship. Another part of the class and peasantry debate looks at the 'kulaks' or richer peasants and their, in some cases, extreme exploitation of fellow peasants. Hyden in his in-depth look at the 'peasantry' in Tanzania contested the application of the term kulak to even the richer peasants, noting that to refer to even the richer peasants "as 'kulak' farmers is strongly misleading" due to the different and less exploitative relations between the richer and other peasant farmers. He concludes that "[e]ven with a wide stretch of the imagination it is difficult to describe the rural African situation in those terms" (Hydén, 1980: 79). Shivji in his classic analysis "Class Struggles in Tanzania" does identify a Kulak class, but also notes that the Kulak class was underdeveloped in Tanzania when compared with other countries, including neighbouring Kenya, and thus did not play the same class role (Shivji, 1976). Raikes argued in the same time period (mid 1970s) that although the level of class differentiation in rural Tanzania was not as much as in other neighbouring countries, there is a greater movement towards differentiation than others, such as Shivji, have acknowledged. He does not use the term

Kulak as such, but argues that there is a strong trend towards the emergency of a rich peasantry (Raikes, 1978). From my own primary research, almost forty years later, I have found differentiation, but not of the extent Raikes assumed and I would therefore agree with both Hyden and Shivji in this regard and therefore prefer not to use the terms kulak or peasantry.

Another option would be to follow Bernstein's disaggregation of 'peasants' and 'family farmers' into "small-scale capitalist farmers, relatively successful petty commodity producers and wage labour" (Bernstein, 2010: 4). I find the reduction of the peasantry to 'petty commodity producers' fails to capture the specific characteristics of *wakulima* and is based on an assumption of a level of incorporation into global capitalism that does not fit with my findings. Talking about small-scale capitalist farmers, does not do justice to the specificities of *wakulima* when compared to capitalist farmers that may be common elsewhere. As Hyden found several decades before, the nature of production and social relations that *wakulima* (he still referred to them as peasants) in Tanzania follow is a more significant shaper of their circumstances than their disadvantaged position in relation to global capitalism (Hydén, 1980). Others have questioned the level of differentiation among the peasantry, notably Gavin Williams and Harris-White (engaging with the work of Williams in the Indian context) also found that 'petty commodity producers' in the agricultural sectors displayed limited differentiation. Chayanov argued that differentiation among peasants is based primarily on 'demographic differentiation' (Chayanov, 1986). I am not concluding that differentiation and class formation are not happening among *wakulima* in Tanzania and peasants in other parts of the world, but I am saying that the debate is contested and complex and one I will not resolve in this thesis.

I find Chayanov useful due to his efforts to seek and explain the basis of the peasant economy, rather than to assume the peasant economic model must fit into capitalist or socialist paradigms (Chayanov, 1986). While I take ideas and inspiration from his work, I firstly believe the context I am looking at is very different and beyond that Chayanov reaches some conclusions I disagree with and others I am not in a position to comment on, for the Tanzanian context. Chayanov's equilibrium model (based on needs satisfaction versus level of drudgery) that is linked with the idea of demographic differentiation (ibid), is very important, but not one I can apply to the Tanzanian context, largely because the kind of statistical data that Chayanov drew on is not available for Tanzania. On the other hand, I disagree with his simplistic treatment of labour in the family farm (ibid) which does not reflect the reality for many *wakulima* and his views on vertical integration and cooperatives.

The fluidity and overlaps in different roles for many *wakulima* brings additional complexity in applying a traditional class analysis. We see that many urban workers and urban and rural traders are also farming. *Wakulima* farm their own land and often engage in trade and labour on other people's land. People shift between roles depending on changing circumstances. Hyden and Bryceson have noted how urban residents and workers, even in the civil service, not only are engaged in farming, but in times of crisis will revert back to

sustaining themselves from the land (Hydén, 1980; Bryceson, 1987). *Wakulima* can employ someone on their land one day and soon thereafter be themselves labouring on someone else's land to 'help' them or to get cash to be able to invest more in her own production. Some of the casual labourers loading trucks in Ubaruku and in Kibaigwa were found to be land 'owners'<sup>4</sup>. The situation is further confused by the varying forms of land rights. An increasing number of *wakulima* use rented land, sometimes alongside using land they own. This includes relatively wealthy *wakulima* who rely exclusively on rented land, while some of the poorest *wakulima* own land, but still labour on the land of others for an income. Even where land is being privately transacted, it is not fully commoditised, as I will explain later in this thesis. Shivji makes the important point that "where Marx uses the phrase 'ownership' it is meant to convey the idea of the relationship of man to man, a social relation, and not merely man to object" (Shivji, 1976: 6). Indeed, as Shivji points out, what is important is the social relations of production which are not necessarily aligned with legal ownership, especially in Tanzania. Nevertheless, the diversity and shifting nature of the social relations as influenced by different relations to the land, poses a challenge to a classic class analysis. Mbilinyi has also noted these strong overlaps between members of the proletariat and the 'rural bourgeoisie' in Tanzania. Shivji acknowledges that "classes are hardly ever clearly demarcated" and there are intermediate groups and overlaps (ibid: 118). He goes on, however, to argue that "[r]ather than expecting classes to be clearly demarcated, the better way of looking at them would be in terms of the 'core' and 'fringes' of the various classes" (ibid: 118). If there were a clearly identifiable 'core' for each class this would make sense, my position, however, is that the 'fringes', from the perspective of the classic class analysis, may in some cases actually be the 'core', in that they reflect more people's lived realities. Not only are people often in 'fringe' positions from a classic class perspective, but they move between traditional class roles through their lives and even between seasons. This is essential to understanding the nature of conflicts that have emerged and the limited development of classic class contradictions and alliances.

Given all of these factors I see greater value in exploring the particular characteristics of *wakulima*, rather than trying to fit them into the limbo position of 'petty commodity producers', or assume them to be peasants, in theoretical constructions of class relations that were not developed in the Tanzanian context and do not necessarily fit that context. This is not to deny important differences within the *wakulima* that Bernstein, Shivji and other Marxist intellectuals have been correct to point out. Rather it is to start with the intention of building an understanding more rooted in the particular realities in Tanzania. It is also an acknowledgment that, in this sweeping look at the food system feeding Dar es Salaam, I do not have the space to properly engage with the political economy debates on class formation and accumulation. I hope the empirical data I have gathered may be used by myself and

---

<sup>4</sup> The concept of ownership as used in this thesis has to be understood, unless specified otherwise, in the Tanzanian context where land is held by the state, but someone will be considered the 'owner' if they have a socially, or in rare cases a registered, right of use and occupation of that land.

others in the future to contribute to such a debate. In the meantime, using the term *wakulima* avoids inadvertently positioning them in a particular already prescribed class position.

## **2.4. Of formality, the supermarket and value chain paradigms**

Important manifestations of the modernisation development paradigm that are relevant to the food system are the discourse of formal versus informal, the supermarkets as perhaps the most symbolic and practical example of both the formal and the modern, and the popular development intervention of the 'value chain'. The notion of formality fits with the modernisation commitment to "rational management" (Arce and Long, 2000: 21) and the transfer of "organisational forms from the more 'developed' world or sector of a country" (Long, 2001: 10). Economic activities that do not fit within these organisational forms are rejected as informal, with formal being the state that they should reach in the linear process of 'development'. That these different organisational forms in the 'less-developed' parts of the world could have value and represent a different rationality and different form of modernity is beyond the comprehension of policy makers and academics locked into the modernisation paradigm. The original and still overriding logic of the value chain intervention is to link producers to the formal and modern global markets including to supermarkets (Kaplinsky and Morris, 2001) and in taking this approach they embody the "tendencies towards increased incorporation and centralisation" (Long, 2001: 11). These issues are elaborated more below.

### **2.4.1. Informal and formal**

The term 'informal' is commonly used to refer to a wide range of economic activities that fall beyond the organisation (i.e. control) of government or a corporate entity with bureaucratic structures. Interestingly, in relation to the political economy analysis, to be informal is also generally synonymous with falling outside the typical labour versus capital dichotomy. To go back to the earliest work that coined the term, Hart in revealing the complex array of economic activities of a migrant group in Accra Ghana in the 1960s said:

"The distinction between formal and informal income opportunities is based essentially on that between wage-earning and self-employment. The key variable is the degree of rationalisation of work - that is to say, whether or not labour is recruited on a permanent and regular basis for fixed rewards. Most enterprises run with some measure of bureaucracy are amenable to enumeration by surveys, and - as such - constitute the 'modern sector' of the urban economy" (Hart, 1973: 68).

The reference to what and who can be "amenable to enumeration" is interesting and implies that what is not visible to and therefore not within reach of the state, reminiscent of Scott's "Seeing like a State" (Scott, 1998), is described as 'informal'. Of course, being 'seen' by the state is not always what people want or good for them. As Scott shows in his book, many of the schemes of the state are doomed to failure in part due to the way the state wants to see the world, which is often far removed from the daily realities and interests of people. Scott

has also shown, from work in south-east Asia, how, far from embracing formalisation, modernisation and what is seen by many as progress, many people move in and out of the formal spaces in an effort to benefit where they can while maintaining their autonomy (Scott, 2009). The negative attitude to the informal and other activities, which the state (and no doubt many NGOs as well) cannot clearly see and therefore does not understand, is likely to be at the root of why so many “schemes to improve the human condition have failed” (Scott, 1998).

To define a system as ‘informal’ is to define it in relation to something else, something it is not; ‘formal’. Doing this is based on an assumption, and at the same time reinforces that assumption, which is that it will or should become formal. What is formal is always defined from outside the actors and places involved in the informal; it is part of the wider modernisation discourse that attempts to define ‘development’ in a particular way (Arce and Long, 2000). What this does from a research point of view is to cut off the exploration of what the logic or ordering principles of that informal system might be. It is assumed to have no underlying and valuable ordering principles of its own. It is assumed that this informal system is simply an immature and incomplete version of the formal. Those who want to intervene in the system want to correct what are seen as the deviations from the formal in order to help the system mature. Researchers can also fall into seeking out those deviations in order to be able to better correct them. Jerven has shown the same phenomena in analysing the related debates on the lack of economic growth in Africa. He found that the “method of investigation has been called a ‘subtraction approach’ where the characteristics of a developed country are compared with the characteristics of an underdeveloped country. The differences between them have been taken to explain slow growth” (Jerven, 2011). The ‘development’ intervention then becomes to close the gaps identified in order to move the underdeveloped country or economic system to look more like the developed one. What this doesn’t do, as Jerven points out, is find out how African economies do grow (ibid). What Jerven has also shown is that statistics for African countries economies and for the scale of the ‘informal sector’ are often, including in Tanzania, based on quite arbitrary estimations with little base in real data (Jerven, 2013). Thus, both the logic of the analysis and the data it is based on are flawed, little wonder so many interventions designed in such a way have not had the hoped for impacts.

My approach is to start out assuming that a system that exists in so many places and has existed for so many years might have its own set of ordering principles and sources of value and resilience and to try and understand what they are. To try and understand, in short, why and how it exists.

#### **2.4.2. Supermarkets, the most formal**

There are academics and policy makers who have argued that supermarkets, whose numbers are growing in Africa at large, have a major role to play in the feeding of cities. This is an understandable part of a modernisation and formalisation narrative. Many of

those developing food policies see supermarkets as modern, efficient, well designed and optimally performing institutions. In addition, food policies argue for a continuous modernisation of food provisioning to enable cities to meet the challenge of feeding their inhabitants. Supermarkets fit that modernising image and it is envisaged by some that, whether we like it or not, supermarkets will emerge as the predominant food procurement network (Abrahams, 2009; Minten & Reardon, 2008; Reardon, Timmer, Barrett, & Berdegue, 2012; Weatherspoon & Reardon, 2003).

In my field research, it quickly became apparent that most of the eaters in Dar es Salaam did not use supermarkets. A senior manager with Shoprite Supermarkets in Dar es Salaam confirmed, when interviewed, that they serve a minority. He explained that they were competing for the 20% of the food market that he referred to as “formal”. The reasons that most eaters don’t go to supermarkets are clear. Compared to the other options that most eaters use, supermarkets are more expensive especially for the locally produced foods that form the heart of most people’s diets, normally sell only in fixed quantities, are less accessible and don’t sell on credit.

The focus on supermarkets as the assumed main food supplier for the future also impacts on research due to the danger that research on other food systems will be overlooked completely or given little attention and little funding. This results in the underestimation of the contribution of these other systems to the food provisioning of cities (Abrahams, 2009). This thesis will not dedicate a lot of attention to supermarkets for the simple reason that they are not one of the most important forms of food supply to the majority of eaters in Dar es Salaam.

### **2.4.3. Chained to formality**

Over the last years, when I have explained my PhD research to academics and people in the development sector, many have responded with something like: “oh, you are looking at value chains”. This thesis is not about value chains and it seems that I need to explain why.

As Guyer stated three decades ago in the book she edited on “Feeding African Cities”, “[f]ood distribution systems are not only market chains” (Guyer, 1987: 06). It is essential to look at the food system beyond the concept of value chains, because the concept is based on a set of assumptions that limit its usefulness. Some of the core assumptions that inform the value chain approach to research and interventions are: the inevitability of a modernisation path, including corporate management and capital intensive production and distribution processes; progress is represented by ‘formal’ (read corporate) business that is part of national and global commodity markets (e.g. supermarkets and exporters); economic benefits are the only drivers and determinants of behaviour in the value chain; and the more stages and actors involved (read traders) in the value chain the less efficient and therefore bad it will be (Donovan et al., 2015; Match Maker Associates, 2014; Seville et al., 2011; Kaplinsky and Morris, 2001; Hobbs and Young, 2000). Stemming from this, the logic of many value chain development interventions is to find ways “small-scale farmers and

agribusinesses can be integrated into mainstream agri-food systems” (Louw et al., 2008) and in doing so remove from the value chain as many actors, such as ‘middlemen’, as possible. Further, the value chain methodological focus on the study of one particular commodity at a time (Match Maker Associates, 2014), means that it will not see the wider food system. All these aspects of the approach feed into the assumptions about supermarkets becoming the dominant outlet for all food products, as mentioned above, and thus the place that farmers will have to sell their products in future, if not now. Based on such assumptions we see failed efforts to build partnerships, such as the one in Zambia trying to link farmers from Luangeni with Shoprite (Miller, 2008). In putting in place such interventions there is no value or attention given to the role that all the various actors play in making the system work. Much of the research and writing in favour of the value chain approach still finds that there are many constraints and less than ideal outcomes (see for example Louw et al., 2008), and even the more critical literature still focusses on trying to find ways to make value chains work better and more equitably (for example BASIC, 2014). Despite the weaknesses identified the recommendations are almost always about how to overcome the constraints and problematic outcomes, rather than looking at other possible approaches.

Much value chain development done by NGOs and governments starts with a focus on the farmer and a particular crop and seeks greater value for the farmer (not necessarily *wakulima*) based on them linking to formal and corporate buyers and ultimately retailers. Little or no attention is given in the planning and implementation of such interventions to food and nutrition needs. Some critics have identified negative impacts on rural food security when farmers have turned to cash crops, but they have not yet considered the wider impact on food security, in particular for urban eaters.

Value chain analysis is not only narrow in focussing on the material value of commodities as opposed to other values, but is also narrow in the range of actors that it considers. We only see in the value chain those directly economically involved with the particular selected commodity and the immediate production inputs. The communities, the social, the cultural and even other businesses that may compliment the ‘chain’ for that particular commodity become invisible. Once we are open to the possibility that market relations are based on more than material value, we can begin to explore the non-material elements of how these relations work and what other value actors bring to the system and derive from it.

The coming chapters, in particular Chapter Eight on the milk trade and Chapter Nine which captures the conclusions, will share empirical information and further critical analysis relevant to value chain interventions.

## **2.5. City regions and alternative food networks**

Over the last years there has been a growing interest in alternative food networks (AFNs) and city region food systems as activists and academics have realised that feeding the cities and changing our food system are important and intertwined priorities (Wiskerke and Viljoen, 2012; Nasr and Komisar, 2012; Derkzen and Morgan, 2012; Renting et al., 2003;

TFPC, Undated). I could have carried out my research on food in Dar es Salaam with this existing theoretical and practical work, the great majority of which has happened in the 'West', as my starting point. There is, however, a danger that such work becomes a new strand to the modernisation paradigm, with the food system in Dar es Salaam being first looked at in terms of how it compares to these other 'alternatives' rather than for its own intrinsic value or lack thereof. Some of my experiences, described below, confirmed for me the value of following a different path of research, while still looking for mutually beneficial lessons that could be shared with and derived from existing city region food system and AFN work.

### **City region food systems**

There has been an increasing debate on urban and city region food systems and urban food planning (Wiskerke and Viljoen, 2012; De Zeeuw and Dubbeling, 2009; Baker and De Zeeuw, 2015). Scholars, policy makers and activists have called for more work to analyse and rethink rural urban relations, especially in developing countries, as a basis for achieving food security, rural development and more equitable relations (Hebinck et al., 2015; Forster and Escudero, 2014; Wiskerke and Viljoen, 2012; Wiskerke, 2010; Maye and Kirwan, 2013).

In September 2015 I participated in a working group on "Conceptualising and Assessing City Region Food Systems" as part of the "Agriculture in an Urbanizing Society" conference taking place in Rome (Zingaretti, 2015). One of the striking things about most of the presentations and much of the discussion was how many people approached the idea of the city region food system from within the confines of the administrative boundaries of the municipal, district or regional government structures. One presenter focused on the possibility of expanding the Amsterdam city boundary in order that all the food required for the city could be produced within that boundary. Another presentation was on the food and agriculture policies and practices of six Mediterranean city administrations and a third was an analysis of the practices in two community gardens, one in Berlin and one in Amsterdam (Agriculture in an Urbanizing Society, 2015). I presented on the maize supply to Dar es Salaam showing how maize, the most important staple food in Tanzania, came to the city through a food system that had little if any regard for administrative boundaries or policies (Wegerif, 2015b). There were clearly two very different ways of conceptualizing, studying and planning around city region food systems and therefore a debate worthy of further attention.

The first approach essentially takes administrative boundaries and looks at what is being done and could be done within these. The focus then becomes on research, policy and planning around food within that defined region. This overlaps with a tendency to look for and value the local with assumptions that food should and could be produced locally, within the boundaries of the defined administrative region. The second approach looks at the food needs of the city and explores the relationships that have shaped where currently and sometimes historically food came or could come from for sustainable food supplies in

the future. The food becomes the starting point for the research rather than a bounded territory. Looking back at the related literature, I find that the bulk of work has been oriented towards the first approach, but I contend that realistic solutions to sustainably feeding growing cities will require more work that takes the second approach.

My approach to looking at the city region food system is to follow the food, mapping, describing and analysing the socio-spatial relations of food provisioning. I have not confined myself in doing this to any administrative region or other predefined geographic territory. This is important given the objective to see what food system exists now in practice, in order to inform discussion on how we can sustainably feed rapidly growing cities like Dar es Salaam. This is a growing challenge that any city region food system will have to meet and an increasing number of cities are developing explicit food policies, plans and strategies to do this (Forster and Escudero, 2014; Wiskerke and Viljoen, 2012; Morgan, 2009; Davis, 2006).

### **Alternative food networks (AFN)**

There has been a rapid rise of alternative food networks (AFNs) and writing on them over the last years, largely in the richer countries of the world (Maye and Kirwan, 2010). These include short supply chains, farmers' markets, "organic farming, quality production and direct selling" (Renting et al., 2003: 384). There are elements of these AFNs in the food system in Dar es Salaam, but also important differences. For one, the food system in Dar es Salaam is not purposive in trying to be an alternative, two, it is the dominant supplier of food, so not a niche, three, it is supplying the poorer majority rather than the middle and upper classes that many AFNs supply and rely on.

Despite acknowledging heterogeneity, the focus of much AFN work is on particular localities. There tends to be a jump from criticisms of the global food system to a focus on niche products and very local solutions largely in the form of 'short food supply chains' (Maye and Kirwan, 2010; Renting et al., 2003; Marsden and Banks, 2000). Recently this has been referred to as the "local trap" (Born and Purcell, 2006). Renting and Marsden go as far as using "'short' as a common denominator for the types of food supply chain that are emerging within rural development" (Renting et al., 2003: 398). This approach risks missing the potential and importance of food systems that sit between the extremes of local and global and deliver the bulk of foods essential to large urban populations. In writing in their important work on city region food systems Forster and Escudero noted that "[d]ialogue is often polarized between the "ideology of the local" and the "ideology of the global", when in fact there should be articulation of a more integrated and multi-level approach in areas of good practice, governance and policy" (Forster and Escudero, 2014: 6).

The other focus, even when looking at more spatially dispersed AFNs, has been to look at those that are actively constructed by state and civil society institutions such as through food policies and plans and certification initiatives to confirm the particular quality attributes of certain foods. As Renting and Marsden argue, "[e]xtended SFSCs [short food supply chains] depend critically on institutionalised conventions, codes, and mediators" (Renting et al.,

2003: 400). This is also very different from the symbiotic food system that includes geographically extensive networks, but no institutionalisation of structures or conventions.

There are a few initiatives in Dar es Salaam that fit the characteristics of AFNs and through the language and imagery used consciously position themselves as such. The approach has come largely from expatriates who seem to have brought the ideas from what they are exposed to elsewhere. They also primarily serve the expatriate community and some elite Tanzanians. Three examples are a fresh produce box scheme supplied by a specific farm, a 'farmer's market' and an online service to deliver food.

The box scheme brings a weekly, sometimes more frequent, box of fresh produce from an almost organic (it is agro-ecological, but not 100% organic) farm in Iringa that is run by expatriates. People join the group and receive the deliveries that are brought by truck to drop off points in Dar es Salaam, such as the international school and the USA Embassy. Embassy and International NGO staff are the bulk of their clients and in price and the way it is organised (there is even a waiting list) it does not meet the food needs of typical residents in Dar es Salaam. It is also interesting that it involves quite a long distance (about 500 kms) transportation of food, even though it is direct buying.

The Oysterbay Farmers Market is organised by the Italian NGO CEFA with support from the World Food Programme of the United Nations. It takes place monthly at the Oyster Bay shopping centre that is in the middle of probably the wealthiest part of the city and it serves a primarily expatriate clientele. So orientated to expatriates from the global north is the market that it advertised a market at the end of June 2014 as the last "before our summer break"<sup>5</sup>. This of course just as southern hemisphere Dar es Salaam was going into its coldest (or perhaps I should say, least hot) time of year. There are few if any farmers selling at this market, certainly not directly, and the limited range of fresh produce is overshadowed by people selling processed or packaged foods such as cheese, wine, "exotic juices", pizza, natural soaps, and homemade cookies.

Farmfresh is a company that set itself up to take food orders on line and do deliveries. It has a stated objective of delivering the highest quality of foods at the lowest prices<sup>6</sup>. The owner also said his goal is "to reduce inefficiencies in the food value chain". Interestingly, given such aims, the company was selling food at above the typical prices in local shops even before the delivery charge was added. A delivery charge that is more than many families in Dar es Salaam would spend on a meal. The fact that the service was web-based and in English also indicates the nature of market they were targeting.

In depth study of these AFNs was of little interest given the challenge of feeding the city that I set out to address. What I do is look for the elements of AFNs that appear in the main food system in Dar es Salaam and reference is made to this in different parts of this thesis. I hope

---

<sup>5</sup> From their facebook page, <https://www.facebook.com/OysterbayFarmersMarket/?fref=ts>

<sup>6</sup> From their website, <http://farmfresh.co.tz/>

as well that lessons from the symbiotic food system in Dar es Salaam may be taken up by people interested in AFNs. What emerged early on in the research, is that to find alternatives to corporate agri-business that can feed the cities, we will need to look beyond the short supply chain thinking, solidarity markets and niche interventions that are often done with NGO or government support. Certainly, in Dar es Salaam, these are not where the exciting 'alternatives' to the globally dominant agri-food system that can operate at scale are coming from.

## **2.6. Common pool resource management and nested markets**

The work done on studying common pool resource (CPR) management by Elinor Ostrom (Ostrom, 1990) and others helps to explain how groups do work together in the utilization of common resources in their mutual interest. This has been identified by van der Ploeg et al (Van der Ploeg et al., 2012) and Schneider et al (Schneider et al., 2015), along with a number of other factors, as applying to and part of the ordering principles for 'nested markets' that they have been studying. I found these concepts useful as I started to seek explanation for the phenomena I found in my field research.

### **Common pool resource management**

Extensive study, over decades, of situations where common pool resources (CPR) are used sustainably by groups of people led Ostrom to develop a theory of CPR management (Ostrom, 1990). CPR are essentially resources that have a high subtractability, in other words they can be depleted with use, and also are difficult to exclude people from. A forest is an example of a CPR as cutting the trees will deplete or even destroy the forest and it is hard to stop people entering the forest and cutting and using the trees. The core challenge is that each individual who cuts trees benefits from cutting more trees and so is incentivized to do so, while the cost of the loss of trees is shared by all those who may be current or future users of the forest resources; the individual keeps the full benefit for themselves, but shares the cost with others. Thus, the widely-held belief was, and still is to some extent, that people would act in their narrow self-interest to such an extent that CPRs would be over utilised and destroyed. Based on this belief, it is argued that only regulation enforced by an outside authority, normally government, could avoid the destruction of such resources. The core of Ostrom's argument challenged these beliefs through showing that self-organising people are capable of managing such resources for the common good. She also developed a theoretical framework to show how people do this through CPR management and institutions (ibid).

By studying many examples, Ostrom developed a set of commonly found design principles in long-enduring CPR institutions (Ostrom, 1990: 90-102). These can be summarized as:

1. "Clearly defined boundaries" for membership and the CPR.
2. "Congruence between appropriation and provision rules and local conditions". Rules fit context.
3. "Collective-choice arrangements". Rules set by those affected.

4. "Monitoring" done by monitors accountable to appropriators.
5. "Graduated sanctions" for violations set by appropriators or those accountable to them and take into account the context of the offence in order to be experienced as reasonable.
6. "Conflict-resolution mechanisms". Rapid access and low cost.
7. "Minimal recognition of rights to organize". Not violated by external authority impinging on self-organisation.
8. "Nested enterprises". All functions are organised in layered 'nested enterprises'.

I see the principles of CPR management operating in many parts of the symbiotic food system feeding Dar es Salaam and based on analysis of my research findings develop the idea further in three ways: 1) I believe the notion of a CPR applies very well to the market places, especially in more structured markets; 2) the market demand for particular products is a form of CPR; and 3) Ostrom's concept of 'internal norms' that are developed in parts of the food system as part of CPR management are influential in other parts of the symbiotic food system and may help explain the prevalence of symbiotic relations even beyond the particular CPR environments. While the CPR management principles fit very well with certain nodes in the symbiotic food system, notably the organised people's markets, much of the food system operates with no structured institutions or explicitly agreed rules. It becomes of interest to observe that some of the principles, however, continue to be operationalised without the institutional arrangements, leading me to look for further ordering principles to explain this.

Ostrom's more recent work on polycentric governance and human behaviour (Ostrom, 2010), emerged as especially relevant to my own findings by helping to explain how other elements of the symbiotic food system function. Almost all parts of the symbiotic food system involve polycentric governance, with high levels of complexity and many centres of power that are formally independent, but ultimately part of an interdependent set of relations (ibid), it is thus not surprising to find similar characteristics, some of which I explain in the paragraph below.

Ostrom has found that more face to face communication increases the collaboration for the common good and reduces the extent to which individuals act selfishly to the detriment of the group as a whole (ibid). This is pertinent in relation to the practice of traders and others in the food system spending extensive time together and valuing familiarity in their decisions about who to work with as well as developing familiarity as part of their way of working. Trust is also built through this familiarity and the simple practice of transactions successfully completed many times (ibid). People operating in a common setting will learn particular norms, as Ostrom puts it "individuals use rules of thumb—heuristics—that they have learned over time that work relatively well in a particular setting" (ibid: 20). Further, those who regularly work in teams, as many actors in the food system in Dar es Salaam do, are more like to adopt common norms as well as having higher trust levels than those who work alone (ibid). One of the interesting norms that a number of studies have found to be widely shared is that people do not like inequalities and value positive achievements by

others (ibid). This is a finding of importance to understanding the high levels of equity present within the symbiotic food system.

### **Nested markets.**

In exploring “newly constructed” markets that have different characteristics to the dominant agro-food system a number of scholars have been developing the concept of “nested markets”(Hebinck et al., 2015; Matondi and Chikulo, 2015; Van der Ploeg et al., 2012). The food system I found to be feeding the majority of people in Dar es Salaam showed a number of characteristics that were not well explained by neo-classical economic theories about markets, but looked similar to nested markets. This called for a further analysis of the extent to which the developing concept of the nested market could help to describe and explain the food systems I had found.

Nested markets are seen as “newly constructed” market forms that emerge out of struggle and have “structurally different characteristics than mainstream markets” although they exist within wider commodity markets (Hebinck et al.; 2015). Drawing on Schneider et al’s description, I summarise here six important characteristics of nested markets (Schneider et al., 2015), they:

- 1) Like other markets operate along-side and interlinking with other segments, including beyond the agricultural and food sectors;
- 2) Are institutionally embedded to the extent that “people forget about the institutions involved and ‘the market’ emerges as a kind of natural order” (Schneider et al., 2015: 194);
- 3) Rely on a particular socio-material infrastructure, as other markets do, and this enables a particular product flow;
- 4) Are common pool resources with a set of rules linking producers and consumers and thus facilitating the transaction of products;
- 5) Are “created for a purpose. They are directly or indirectly, the outcome of social struggle” (Schneider et al., 2015: 195) and a response to pressure from the dominant market forms and food systems (van der Ploeg et al., 2012); and
- 6) Are part of the ‘public sphere’ involving discursive relations and not just buying and selling.

Ultimately, while finding similarities with elements of nested markets, I also see important differences that required a new concept, the symbiotic food system, to explain them. The similarities and differences that the symbiotic food system has with the concepts of CPR management and nested markets will be explained in more depth in Chapter Nine through building on the findings shared in forthcoming chapters of this thesis.

## **2.7. African studies of city food systems and markets**

There is a body of literature focussed specifically on African urban food supplies and markets that contributes form wider experience to add some balance to the more ‘Western’ focussed research on city region food systems. The nested markets research has also missed

Africa, so far, with its focus more on Europe, China and Brazil. CPR research has included cases from Africa, but not on food and markets. Thus, the existing African literature and this thesis can add to these fields of study.

The literature on Africa contains much useful descriptive material, which confirms that the phenomena I have found are not at all unique or confined to the geography and point in history of my research (Skinner, 2016; Flynn, 2005; Guyer, 1987; Bohannan and Dalton, 1962). This gives me more confidence that my findings, including in relation to concepts such as CPR management, will have value in other places. While much of the literature on food and African cities is anthropological, there is another body of work focussed on policy recommendations and providing practical advice for decision makers (Battersby et al., 2016; Skinner and Haysom, 2016). A general weakness, however, is a lack of application or development of higher-level theory for African urban and regional food systems. The focus on policy recommendations as the preferred outcomes, or in other cases assumptions of African exceptionalism, leaves us with inadequate theoretical explanation of empirical findings. With this study, I add to the existing body of empirical work and bring new theoretical findings which assist in the understanding of these markets and food systems.

In 1962 a collection of 28 articles on “markets in Africa” were published in a book of the same name as an effort to fill a gap in the availability of research on the topic (Hill, 1963; Bohannan and Dalton, 1962). A review of the book by Hill was highly critical of aspects of it including the mixed quality of the articles and the poor editing and finishing. Despite these misgivings, she believed there was a lot of useful information within the book that she used to compile “a glossary of African markets” (Hill, 1963: 445). This glossary is useful in pointing to some of the phenomena to look out for and in confirming certain similarities and continuities in market places even more than 50 years after this publication came out. Notable for the striking similarity to what I found in markets in Dar es Salaam were the following: 1) The importance of ‘carriers’ (cargo porters in Tanzania) in the functioning of markets and that they, just like many cargo porters, are aspiring traders and ‘commission sellers’ (*dalalis* in Tanzania); 2) The prevalence of ‘commission sellers’ (*dalalis*) who are “apt to be in a symbiotic relations with long-distance traders” (ibid: 445); 3) The lorry park as the wholesale market place due to the intimate relationship between the market and the transport system. This perfectly fits the wholesale maize and potato markets I shall describe later in this paper that really do resemble lorry parks (Photograph 20); 4) Partnership trading where two or more market traders, often relatives, are working together. This often involves one doing buying, while the other remains to sell at the market. This is very common among the rice traders in Dar es Salaam as well as some of the maize traders; 5) Segmentation of markets into areas for specific goods that are sold at the same price; 6) Quantification by volume or by piles, e.g. of tomatoes, rather than by weight; 7) The nature of stall holding which involves payment of rent for the space where the stall holder can construct their own stall and this being passed down over generations; 8) The payment of a ‘toll’ for goods moved in and out of the market, this is more in the wholesale markers in

Tanzania where a toll is charged on the maize, rice and potatoes coming into the market, although a toll is not charged on items like green vegetables in retail markets with a rent for the stall being charged instead; 9) Blurring of the boundaries between the wholesalers and the retailers with a range of types of wholesalers; and 10) The important role of women in markets (ibid). There are of course some different elements in some markets that are not found in Tanzania, but there are a remarkable amount of common characteristics.

A volume of work specifically on “Feeding African Cities” was published in the mid-1980s, drawing on work over the previous decades in Cameroon, Nigeria, Tanzania and Zimbabwe (Guyer, 1987). This brought out some insights applicable across these sites that are relevant to my findings for the food system of Dar es Salaam, such as: 1) The shifting nature of the rural hinterland supplying food to the city due to politics, transport infrastructure, ecological conditions; 2) The important and sustained, even growing, role of small producers and traders even when policies have been explicitly against them; 3) The importance of self-provisioning in the form of urban production and transfers from rural areas through family and friend networks; 4) The different responses to external forces such as wars and economic depression in different sites; and 5) The lack of available data to support analysis of food production and supplies to cities. The similarities of dynamics in Dar es Salaam with those found across these cities, especially Yaoundé in Cameroon, encourage me to believe my research may have relevance elsewhere. In addition to some of the common factors mentioned above, Guyer finds that for Dar es Salaam and Yaoundé the participants in the food system have been particularly effective in defending their welfare “often through the pressure of non-compliance, rather than direct confrontation of protest” (ibid: 240). Guyer concludes that the “cases serve to illustrate the resilience of the African construction of material life” (ibid: 243). She doesn’t however manage to posit a theory for this resilience and notes the challenge of describing the dynamics in a “theoretically useful manner” (ibid: 243). Perhaps Guyer would have got closer to theoretical explanation of the dynamics of food provisioning and market functioning if she had drawn on experiences from other parts of the world, rather than looking only at African experiences.

Another work explicitly focussed on feeding African cities is Flynn’s book “Food, Culture, And Survival in and African City” (Flynn, 2005). Flynn does not address the food system supplying the city as such, focussing rather on the actors and their survival strategies within the city. She does provide rich empirical description of how residents in the Tanzanian city of Mwanza feed themselves and much of this echoes what I found in Dar es Salaam. Flynn concludes that there is a trend towards greater class differentiation in the city as food was easier for the rich to obtain than for the poor and ethnic and religious alliances were being replaced with age, gender and work based alliances. She also notes the essential nature of shifting social alliances - that I see as part of the functioning of a symbiotic food system - to people achieving their entitlement to food. Her main theoretical contribution is to argue, rather unconvincingly, for an extension of Sen’s notion of entitlements to include receiving of charity as an exercise of one’s entitlement (ibid).

Where I depart from these works is in the assumption that studies of several, or even one, town that happens to be in Africa can be assumed to be representative of other places in Africa or that Africa is a sensible unit of analysis. I support the criticisms of the modernisation paradigm for its neglecting and undervaluing of local practices (Arce and Long, 2000), but this does not require us in researching and valuing local practices to assume an African exceptionalism. Cultural repertoires are not there because people are African, they arise and continue to evolve as practices within particular conditions out of particular histories and we need to understand the logic behind the practices that may work anywhere else with the appropriate conditions. Even though we can see many similarities across markets in different parts of Africa, this is not reason to believe these same conditions do not exist beyond the continent. The identification of these similarities alone also does not help us to reach a conceptual and theoretical understanding of how and why these markets function, with the fact that they are African not being a satisfactory explanation for the phenomena found.

A number of recent reports have focussed specifically on the 'informal' and 'street vendor' role and contribution in urban food security through a wide review of existing literature and studies that focussed on a number of African cities (Skinner, 2016; Battersby et al., 2016; Skinner and Haysom, 2016). Important findings of relevance for my study are: 1) The need to shift the focus of food security research and work from the rural more towards the urban which is both under researched and under theorised in Africa; 2) The large role that the 'informal' sector plays in urban food security; 3) That this informal sector food provisioning is of particular importance for the poorer urban residents due to proximity, flexibility and the creation of employment/incomes needed for food access; 4) That the informal food sector is a disproportionately important economic space for women; 5) There is supermarket expansion, but it is not as rapid as some have assumed it would be and its impacts on food security are often negative; and 6) Street food vendors and other informal food traders face policy neglect or often negative policies and practices that have included restrictions on trading activities and evictions from their trading places (Skinner, 2016; Battersby et al., 2016; Skinner and Haysom, 2016). These studies have focussed on practical policy recommendations, which are useful, and they have avoided the discourse of African exceptionalism, but at the same time they have not attempted to develop any substantive or higher level theories to explain the nature of the food systems that they have found.

Hyden, with his extensive work in Tanzania, is again relevant and helps capture the approach I am taking and also not taking.

*"Instead of describing societal structures as deduced from a given model, my purpose has been to identify actual structural articulations. In that respect, this study is an attempt to study peculiarly African phenomena, not Western phenomena using African data" (Hydén, 1980: 5).*

The first part of this quote I like as it captures in many ways what I have tried to do with this study. Where I diverge from Hyden, however, is in seeking a “peculiarly African phenomena” (ibid: 5). I have no reason to assume a-priori that phenomena I find will be peculiarly African, nor is something being African sufficient, as mentioned, to explain the phenomena. Just as it is problematic to assume that the situation in Africa is the same as it has been found to be elsewhere, it is just as problematic to assume that it would be different or have its own peculiarities simply because it is in Africa. The other common approach is to focus on recommendations for policy or programme changes to meet identified needs. Useful as making recommendations is, such a focus can tend to discourage searching further for the more elusive underlying theories and ordering principles. We should in trying to find these draw on all knowledge and experience we can from different parts of the world. Likewise, lessons from studies in Tanzania, which happens to be in Africa, might be applicable or at least useful elsewhere in Africa and beyond.

## **2.8. Conclusion**

As discussed above, modernisation paradigms place no value on the different local responses and modernities that actors construct in their particular contexts. At the same time, traditional economic and structuralist approaches are inadequate for helping us understand the nature of the market relations that are a core part of the food system feeding Dar es Salaam. I shall endeavour, therefore, in this thesis, to follow the call for an actor orientated, both grounded and theoretically informed, ethnography (Long, 2001; Willis and Trondman, 2000; Arce and Long, 2000; Long and Ploeg, 1994) and within this to follow the argument by Lie that “[i]n order to advance theoretical works on markets, the assumption of market essentialism should be jettisoned in favour of describing and analysing the empirical diversity of actual existing markets” (Lie, 1997: 354).

In carrying out this research I will give attention to the ordering principles - including relations with land, labour, capital and the food system that feeds Dar es Salaam - found among the *wakulima* in Tanzania. But, rather than following a structuralist approach, I follow Granovetter (Granovetter, 1985) and other sociologists in seeing market relations as embedded in social relations (Giddens, 2013). In analysing how social relations shape market and other relations in the food system I take note of the warning from Granovetter that we need to avoid an oversocialized conception that sees actors adhering “slavishly to a script written for them by the particular intersection of social categories that they happen to occupy” (Granovetter, 1985: 487). In exploring the ordering principles of socially embedded relations I attempt to understand the nature and logic of the norms and cultural repertoires as well as the material interests and the different ways that actors respond to and reshape these. I value the nature of the practices found, if for no other reason than realising these common social and cultural practices would not be surviving if they did not work to some extent at the material as well as social levels.

It is a start to realise that market relations and therefore also food systems are embedded within social relations. This helps to explain the behaviour of actors in the market, who take decisions that appear to be counter to their narrow economic interests. We can see in the research that informs this thesis the way cultural repertoires are shaping market relations, but this is not a full explanation. This does not identify the particular characteristics of the cultural repertoires that these markets are embedded in and it does not tell us the underlying ordering principles that find expression in a particular food system. Traders in the market sit next to each other selling the same products for years, they assist with each other's children, they share common transport when going to the wholesale market every morning, and they watch each other's stalls when someone has another task. Rice traders help other traders to start in the same business competing with them. The material and economic factors are also not absent, we have to understand the system as including an interaction between the material drivers and the social and cultural drivers.

To understand how and why the system works, I take the grounded theory approach, drawing on the empirical findings that will be shared in the coming chapters. This is used to critically engage with theories mentioned above, such as that of CPR management and nested markets, to arrive at the concept of the symbiotic food system that will be elaborated in the final chapter.

## Chapter Three – Methodology

### 3.1. Introduction

This chapter elaborates the methodology used in gathering of the data for this study on how Dar es Salaam is fed. The methodology explained here – what information was gathered and how – is shaped by and should be read in the context of the theoretical approach and understandings that have been explained in the previous chapter. It should be noted that these understandings and the research methods were not fully formed at the beginning of the research process, but rather have emerged as part of an iterative process during the research.

A qualitative and ethnographic approach to the research was taken in part due to the lack of reliable data suitable for any meaningful analysis. Jerven, who has studied economic data from a wide range of African countries, including Tanzania, makes the case that we need more detailed work to understand what is going on and the diversity of experiences as the overall statistics are clearly flawed and not giving us much useful information (Jerven, 2011). Even in relation to the highly influential GDP figures, there are serious gaps in information and a lack of clear base data to support many of the statistics that are available (Jerven, 2013). The paucity of reliable data is even more pronounced when it comes to the ‘informal sector’, that most of the food system I am looking at would fall into for the statisticians. When reviewing and revising national statistics in 1997, including changing the way they estimated the ‘informal sector’, the government of Tanzania estimated the deficiency in their own data to be between 30% and 200% (ibid: 29). These figures continue to impact on statistics today due to the way past estimates are built on with new estimates. More detailed and accurate data on the flow of different foods into the city of Dar es Salaam are simply not available.

My ethnography has been inspired by, among others, Denzin with his impassioned appeal for a sacred ethnography that is vulnerable, political, utopian, performative, inspiring and presented with “literary craftsmanship... writing that angers the reader, writing that challenges the reader to take action in the world” (Denzin, 1998: 403). This is “an ethnography which interrogates and illuminates those interactional moments when humans come together in their struggles over love, loss, pain, joy, shame, violence, betrayal, dignity; those instances “when self and other are constituted in mutuality and acceptance rather than violence and contempt” (JACKSON 1998, p. 208)” (ibid: 401). Taking inspiration from this does not mean I have managed to live up to such high aspirations. I have focussed on the mundane, but essential, task and practices of meeting food needs rather than cultural or political struggles and certainly my writing cannot live up to the level of craftsmanship or inspire the emotions Denzin refers to. I do hope, however, that something of the lives of those who shared with me comes out in this thesis and a little more of the world is revealed to the readers along with some morsels of inspiration.

### 3.2. Study sites

Dar es Salaam is administratively considered a region and is subdivided into three districts. The research, especially in terms of the initial eaters who were identified and worked with, focused around the Msasani area of Kinondoni Municipality, where I lived. Kinondoni had a population of 1,775,049 at the time of the 2012 census, with a growth rate that would have seen it reach close to 1.9 million by the end of the field research for this study in 2015 (National Bureau of Statistics, 2013a). Msasani and Kinondoni have a range of types of areas with very mixed income levels and are host to a population from mixed-classes and ethnic backgrounds. The food outlets in the area also include a wide variety from small *dukas*, street foods and people's markets to supermarkets and restaurants. Surveys of other areas in the city reveal that the types of food outlets available in other parts of the city are also found within Msasani. The research went beyond Kinondoni in Dar es Salaam, including interviews with eaters from other areas and when following the food I went to wholesalers, processors and ultimately to producers in different parts of the country as well as other parts of the city.

In following the food, I first went to retailers, wholesalers and markets where eaters in Dar es Salaam were found to be getting food. From these I established the retailers' sources for the supply of the food I was following. For example, from a *duka* I would find where they got maize and through that found my way either to a wholesaler, or to a *sembe* (maize flour) supplier and the mill they used. This quickly led me to various parts of Dar es Salaam. The flow of food had no interest in administrative boundaries, but was influenced by distance, infrastructure and social relations. Some of the foods followed originated in Dar es Salaam and its peri-urban periphery, especially the green leafy vegetables, milk and eggs. These led me to the river valleys and other spaces where urban agriculture is practiced and to peri-urban areas such as Makongo Juu, Chanika and Kitunda.

Within the city, the shops and markets become key sites for study. In particular, the people's markets are places of dynamic interaction and were found to be not only important nodes of the food system, but particularly useful for observing and learning about the cultural repertoires shaping that system. In this thesis, I use the term 'people's market' to refer to what is called a 'wet market' or 'wetmarket' in much literature (Tschirley, 2007; Reardon et al., 2003). In Dar es Salaam, these are usually areas designated by the municipality for traders. The markets have central covered areas under which traders - around a 100 upwards - rent small stalls. Sections of the markets are set aside for foods (vegetables, meat, fish, etc.) and there are always shops surrounding the central trading area. The term 'people's market' better signifies the relationship and significance of these public market spaces to the wide number of people who run and use them. The term also points to these being spaces that are structured more around the mobilization of people, as compared to supermarkets which tend to be structured more around the mobilization of capital.

Following the food inevitably led out of the city to various sites. In following milk, I went to Tanga Region, home of one of the largest dairy companies in Tanzania, Tanga Fresh, and specifically to the village of Pongwe. The maize trail led me to spending some time at Kibaigwa in Kongwa District, Dodoma Region. Traveling out from Kibaigwa I went to villages in the Kiteto District of Manyara Region and also to Kitaita in Gairo District of Morogoro Region. Seeking out other sources of maize took me to the villages of Zombo in Kilosa District and Turiani and Kibati in Mvomero District, all under Morogoro Region.

The rice trail led me to Mbeya region, where I made short visits to Matemba, Kyela and to the rice traders and husking machines in Mbeya town, before I ended up spending more time in Ubaruku in Mbarali District. I also came across potato farming and trading in the hills outside Mbeya town, and talked to traders and farmers around Isonje.

Key informant and trader interviews were carried out in Morogoro Town. District offices, and consequently the District centres, were visited in Kongwa, Mbarali and Kilosa as well as in Dar es Salaam.

In research, such as this, there are many sites around Dar es Salaam and across the country that could all be of interest. At the same time, it would be wonderful to be able to go into more depth in each research site, but there are always limits to time and resources. This research is about seeing the connections, networks and a system that is geographically dispersed, seeing the connections between different actors and places including between the urban and the rural. These connections are often missed in research that focusses on a particular geographical site. In a sense my study is of the spaces between the places and to do that I have not been able to spend too long in any one site.

My understanding of Tanzania and food in Tanzania also drew on my wider experience of living, working and traveling in the country for reasons outside this specific research. I lived in the primary research site, Dar es Salaam, immersed in, using and observing the food system for seven years. Living in the area I could take advantage of being to some extent part of the culture and extensive opportunities for observation and interaction with the social actors involved (Kumar, 2011).

### **3.3. Gathering the data**

Intrinsic to my interpretative framework and the determination of the data to be gathered and from who, has been a field methodology of following of food (Cook, 2004; Cook, 2006). Following the food involves following the human and non-human actors - or actants<sup>7</sup> - that play a key role in moving food from sites of production to consumption. In taking this approach I fall into the category of scholars "interested in depicting the ways in which

---

<sup>7</sup> I find writers on Actor Network Theory, such as Latour (Latour, 2005; Latour, 1996) tend to use the terms actant and actor fairly interchangeably, with actant largely used to emphasise that actors can be non-human. Rather than interchanging I will use the term actor and take this to include human and non-human actors.

people manage the dilemmas of their everyday lives" (Long, 2001: 10). This resembles following the actors and looking for the associations between them as described by Latour in his appeal to rethink sociology as much more about the connections between things with his 'sociology of associations' (Latour, 2005). It is important to emphasize that non-human things are treated as actors; these can include the food, the truck that moves it, the policies and established norms that determine how it is used. This does not imply that these actors, or indeed the human actors, act in the association with others always from a consciously determined motivation.

"An "actor" in AT is a semiotic definition -an actant-, that is, something that acts or to which activity is granted by others. It implies no special motivation of human individual actors, nor of humans in general. An actant can literally be anything provided it is granted to be the source of an action" (Latour, 1996: 7).

I do not claim to be applying actor network theory, but rather use some of the ideas to inform and inspire an approach to the research. I have tried as far as possible to avoid working with set social categories as actors were found to flow from category to category, people's positions and relations unfold during the research. I do so in the spirit captured by Law in saying that actor network theory is not a theory, "[i]nstead it tells stories about "how" relations assemble or don't. As a form, one of several, of material semiotics, it is better understood as a toolkit for telling interesting stories about, and interfering in, those relations. More profoundly, it is a sensibility to the messy practices of relationality and materiality of the world. Along with this sensibility comes a wariness of the large-scale claims common in social theory: these usually seem too simple" (Law, 2009: 141).

In some ways the research approach is a form of 'appreciative inquiry'. While it is not applied in an organisational setting, as appreciative inquiry normally is, it does start out looking for what works, looking for innovation identifying areas where the current system is successful (Hall and Hammond, 1998; Head Start Information & Publication Center, 2001). "Appreciative inquiry refers to a research perspective that is uniquely intended for discovering, understanding, and fostering innovations in social-organizational arrangements and processes" (Cooperrider and Srivastva, 1987: 24). One of my starting assumptions has been that to look at how we could feed cities in the future, we should look at how they are being fed now. Given that there is food in the city, something is working. This fits with the appreciative inquiry that "works on the assumption that whatever you want more of, already exists in all organisations" (Hall and Hammond, 1998: 1). There must be something we can learn from the existing system and build on. If I can show what is working perhaps that can motivate those in the system to continue and improve and can motivate others to create a more supportive environment for what works. This does not mean we should ignore the problems, but uses what is working as a starting point (Cooperrider and Srivastva, 1987). The very methodology of starting with eaters and following where the food comes from is looking at what is working as it starts with the reality that the food was available to the eater.

Informed by these approaches this research set out to trace the food through its associations, learning about the actors and their connections. The work with eaters revealed the most important sources of food for the majority of residents in Dar es Salam and that gave focus to the next stages of the research when I traced the sources of food from urban eaters back to the primary producers. I followed the different foods and people in the system, especially the traders on their routes and the farmers to their fields. Along the way I was able to observe and learn about different parts of the food system, the key nodes and places of interactions. Different foods, such as maize, green vegetables, rice and eggs have been looked at and the thesis will touch on the supply of each of these foods.

A qualitative ethnographic approach was deemed most suitable as understanding how the practices of food provisioning work and their social, cultural as well as economic foundations and ramifications is central to the study (Green and Thorogood, 2004). Ethnography can also enable the researcher to describe what is found in a way that can engage and build the empathy necessary for change (Cook, 2006; Denzin, 1998).

The field research was carried out from November 2011 to the end of July 2015 and combined participant observation, in-depth semi structured interviews, the 'ride-along' (see section 9.2) and conversations with social actors involved in food supplies as well as a range of 'eaters' in Dar es Salaam (Jervis et al., 2012).

Repeat visits to research participants were found to be very useful in bringing out new information and gaining a deeper understanding of their situations and actions within the food system. The repeat visits in my research normally built on in-depth interview/s already done and is not necessarily participant observation, although it has elements of that. It normally involves some observation, especially when the person is in their 'natural' environment and active, such as visiting a trader at their market stall, a shopkeeper in their shop or an eater in their home. It also involves some conversation, what Flynn refers to as "casual discussions" in her work on food in Mwanza (Flynn, 2005), or short interviews, a form of 'catching up', as one does with friends. It was interesting to note some of the information that had not been shared and even misrepresentations made which became apparent during repeat visits. For example, in interviewing two young women cooking and selling food together at a market area, the first story was that they were friends and the business belonged to the owner of the hair salon a few metres down the road. It was only with some follow up that it emerged the two women were sisters in law and the hair salon owner was the brother to one of them (not married to the other, that is another brother). In another case a man selling cooking equipment at the market said it was his business that he started, but he was vague on how he got started and where he got the know-how for the business. On a later visit it emerged he worked in partnership with another man who had actually got the business started and had shown him the ropes. People often have a particular narrative about their lives, or deliberately want to project a particular image. Sometimes situations are complex and the participant sees no reason to go into details with a student who will be gone in an hour. As more of a relationship and familiarity develops

there is both more time and greater motivation to explain in full. The repeat visits also provide an opportunity to observe more, including interactions with other actors and to ask about these interactions.

I use the term “eaters” because this research takes an interest in people and how and what they eat. I attempt to view their situations without falling into conceptual categories, such as ‘consumer’ and ‘household’ which run into definitional and practical challenges in Dar es Salaam. Many research participants live and eat within complex and fast-changing sets of social and familial relations. Further, many are not ‘consumers’ in the sense that they are eating food they did not buy—they have many other means of acquiring food, and they often lack the sense of choice implied in the concept of a consumer (see Chapter Four for further elaboration on this). Thus, this thesis draws on findings about the situation of eaters to consider what would constitute a sustainable food system. I intentionally start with and give more attention to the situation and interests of urban eaters. This runs counter to the more common approach, in what many see as value chain studies, which usually starts with the producers. I suggest that eaters’ perspectives are both under researched and increasingly important to understand in our urbanizing world.

### **3.3.1. Data gathered from who and where?**

In the course of the research I interviewed 174 people within or connected to the food system that feeds Dar es Salaam. Of these 109 are men and 65 are women. The main reason more men were interviewed is due to the dominance of men in some areas of the food system. For example, the transporters and the officials that I had to speak to in government departments and districts are almost all men. When an interview was requested with a government structure or other organisation the person delegated to speak to me was almost always a man. The fact that I am a man may have had an impact, but with many groups it was possible to get a gender balanced set of interviews. Of 20 urban eaters studied 12 were women and 8 men. Of 35 farmers 20 were men and 15 were women. Of 27 traders and *dalalis* 14 were men and 13 women. The shopkeepers interviewed included 8 men and 8 women.

In practice, many actors overlap into different categories and roles so I actually interviewed more eaters, traders and farmers than the numbers above indicate. These numbers are based on having to place an interviewee into a single category to avoid double counting. I share the figures here as minimum numbers and to indicate the spread of people interviewed. For example, a person who runs a *duka* in Dar es Salaam is obviously also an eater in Dar es Salaam. A number of the *wakulima* spoken to are also traders and some millers are also farmers, etc. It should be clear by now that I have not followed a classic sampling and questionnaire approach. I carried out qualitative research and do not claim that my sample is statistically valid, but I did cover a cross section of experiences and did so until I reached a level of saturation that makes me confident that I have uncovered most of the important dimensions of the food system feeding Dar es Salaam.

All 174 participants mentioned above were interviewed and many of them were accompanied in their work and in the 'ride-along' and engaged with through repeat visits, some over years. Accompaniment of people combined with observation has been invaluable and involved going into fields, spending time at markets, traveling with transporters, and of course eating with people.

Conversations held with many more people than it was possible to interview has provided more information and corroborated what came out of in-depth interviews. By conversation I refer to the informal and often short conversations held, for example, with dozens of different busy traders in markets visited and with farmers and traders over beers in village bars on many evenings. These are not referred to as interviews or counted within the 174 respondents, importantly, however, they turned up new information and avenues for further investigation to be explored later, they also helped to confirm if the information from participants was common to others in the sector or not. For example, in a market place I could quickly confirm, with many traders, information such as the prices and main geographic sources of the crops being sold. This indicated whether the participants interviewed in-depth were representatives of a common experience, in terms of some key information such as geographic source of food, or were outliers. The conversations often also identified new areas to investigate and people to be interviewed.

In some cases, groups have been interviewed, not as especially planned focus or group discussions, but due to circumstances, such as when at a maize mill the owner and workers are sitting together, or at the meat abattoir when it was important to meet the representatives of the government, the traders and the owners together and sometimes when interviewing one trader or farmer there are others around. These situations were taken advantage of to get the wider input and perspective available from the group and they are a source of information from a wider group of participants that I have not been able to quantify. I have only counted, amongst the 174 interviewees, those who were individually interviewed with care taken to do more private individual interviews with them if they were at some point also interviewed in more of a group format. For each individual interviewee, I ensured that I had an opportunity to talk to them with less people around in order to check that they were not influenced by talking in front of the group.

Another form of data gathering was ongoing price checking on key foods, this included checking at the supermarkets, the *duka*, in the people's markets and with some of the wholesalers and distributors.

Visits have been made to different key nodes of the food system. This includes going to 16 markets, ten maize milling operations, 16 rice husking machines and six dairy collection centres and distribution points. Not all of these visits involved full interviews that I count within the 174 mentioned above, but they all involved conversations, accompaniment and observation. Some of these were visited a few times, some numerous times, over years.

For Chapter Eight on milk provisioning there was a deliberate decision to look at the Tanga Fresh operation as one of the largest dairy producers in the country, an example of a value chain development and because their products are in many *dukas* as well as supermarkets in Dar es Salaam. This led me to visiting their operation in Tanga Region. I also drew on extensive field research done by a Master's Student, Rosanna Martucci, from the University of Amsterdam, who I was co-supervising (Martucci, 2015).

### **3.3.2. Introducing the research and the researcher**

The way we introduce ourselves in research is important from an ethical and practical perspective. By practical, I mean what will work well for the relationship with the person and the gathering of the data required. In approaching actors in the food system and introducing myself and my research, the best approach was to introduce myself as a student who is learning and writing about the supply of food to Dar es Salaam, or in simple terms where the food in Dar es Salaam comes from. This also led into being able to make clear why I was talking to them, because of their role in or link to the supply of food to Dar es Salaam. When I referred to doing research (*utafiti* in Kiswahili), it elicited different responses. Some people were fine with it, but for others it had negative connotations of investigating – as became clear when people speaking Kiswahili would interchange the word *utafiti* with *peleleza* (investigate) - which has different connotations itself. For some it created an assumption it might be research for a particular project or investment. People wanted to know what the research was for and for whom. Presenting myself as a simple student coming to learn and seeking their help in this, was found to be the best way to be honest and put people at ease. I was open in explaining that I would have to write up what I had found and present it to my supervisors at the university and it would likely sit on a shelf with not many people looking at it. I also explained that now and again, in quite rare cases, such research attracts interest and actually gets used to help inform policies that might or might not be good for them. My primary appeal was for the human actors who I interacted with in the system to assist me in my effort to progress in my life by furthering my education. Most were generous enough to assist. The focus of the research, how Dar es Salaam was fed, was also easy for people to understand and of interest to quite a few of them.

### **3.3.3. Which foods to follow?**

When I started the field research I had not decided which foods to follow. I knew I could not follow all and I had the idea to cover a cross section of the most important foods for eaters in Dar es Salaam. Eggs were my first focus, almost as an experiment to see how the methodology worked and due to observing the interesting phenomenon of the bicycle based delivery system. Eggs are an important source of protein, but are probably not one of the most important for the majority of eaters in Dar es Salaam. Green leafy vegetables are definitely a very important source of accessible vitamins, minerals and fibre for the majority of eaters. Maize and rice emerged as key staple foods, a major source of carbohydrates, for eaters and they are also interesting due to their wide use and the discussions on these crops

and their trade internationally. Initial scoping of the sources of rice and maize also showed that they came from different places to each other and travelled much longer distances than the eggs and green leaf crops. All of which indicated they would bring different perspectives to the study. Milk became a focus due to the interesting Tanga Fresh company, which is an important supplier to the city, as well as the opportunity to work on this with a master's student. Milk is also an important urban agriculture product providing the opportunity to compare production and distribution systems.

These five foods - maize, rice, eggs, green leafy vegetables and milk – formed the core of the field research and make up a large part of the empirical data presented in this thesis. Potato farming and distribution were also looked at, although in less depth and will be mentioned only briefly alongside the other staples of rice and maize. Meat is a popular source of nutrition for those who can afford it. Both chicken and beef markets, slaughtering and distribution were looked at and some data from that will appear in Chapter Five on trading places.

### **3.4. Analysing the data**

Gathering of the data gathered has followed processes, elaborated in section 3.3 above, informed by ethnography and the grounded theory approach, elaborated in Chapter 2. The analysis did not begin after completion of the field research; it has been carried out as an integral part of the process during the field research. I often made analytical memos as I have gone along and in evenings after days of field research. These were reflections on what I had seen and heard in the day. New ideas would be sparked when writing up field notes at the time and later, transcribing interviews and engaging in a level of coding and comparison to see emerging patterns and processes. Writing papers and blogs and doing various presentations of my research helped enormously as they forced me to put my ideas together and elicited useful questions and feedback.

In analysing the data, I have looked for processes of assembling and reassembling that are common and tried to understand them (DeLanda, 2006). I have listened to the explanations and perspectives of the social actors and also observed and tried to understand their actions and processes they are involved in (Strauss and Corbin, 1994: 280). Some questions, related to why actors do what they do in certain ways, or how they learnt skills like farming and trading were hard for many respondents in the system to answer. Many take aspects of their lives and daily routines for granted, for example, *wakulima* who were asked where they learnt farming often looked confused and shrugged, but when gathering information on their life history they explain how they grew up working with their parents or other relatives on the farm from a young age. When asking for explanations about how they are both friends and competitors, traders often shrugged or looked pityingly at me. While some did give explanations, there is a strong sense that for many this is simply 'the way we do things'. With a view of how things are being done, but not always an explanation of why, I have engaged in the both inductive and deductive process of the grounded theory approach

and looked to various theories for an explanation and greater understanding (Figure 1). This has highlighted aspects of theories that can be applied in the context of this study and gaps that require further explanation; explanation that I sought in analysis of materials gathered and further theoretical sampling (Charmaz, 2012; Walker and Myrick, 2006).

Reading the work of others sometimes brought new ways of looking at the phenomena I was grappling with, there were those moments when I read something and wanted to exclaim “that’s it; that is what I saw”. I then checked the ideas against the data again and against various readings, wondering if this is analysis. I also went back to field notes, did a rough form of coding, identifying common themes, responses and processes, but not the highly structured coding that some advocate for (Charmaz, 2012). I was encouraged by Heath and Cowley (2004) when they conclude “It is worth bearing in mind that qualitative analysis is a cognitive process and that each individual has a different cognitive style”. (Heath and Cowley, 2004: 149)

### **3.5. Limitations**

There are limitations to the study. This was in many ways appreciative inquiry as the methodology involved looking at what worked as I looked at where the food that was being eaten in Dar es Salaam came from. This reveals what exists that is working and in that I am confident. What this does not explore in depth is what goes wrong, what happened to those who failed. I heard about and examine many of the challenges, but acknowledge that the methodology makes the study stronger in the analysis of what works in the system than what does not work.

As I focused on the main source of foods for the majority of residents in Dar es Salaam, I have not included an in depth look at the supermarket system and other niche food suppliers. The supermarkets were part of the initial research, but it quickly became clear that they were not the source of food for the majority of residents in the city and they were uncompetitive in price and accessibility. Consequently, I do not claim to have explored every aspect of the agri-food systems in Tanzania, I am saying, however, that what has been found is the most significant part of the food supply to Dar es Salaam in terms of the volume of food supplied and the number of people served, it exists and shows us what is possible and how that is created.

## Chapter Four – Eaters’ Perspectives

### 4.1. Introduction

This chapter draws a picture of the lives, eating habits and most importantly the sources of food for eaters in Dar es Salaam. It also elaborates what an ‘eater’ is and why this terminology is used rather than often used concepts for studies of this nature, such as ‘consumer’. The picture of eaters is drawn through sharing vignettes of different eaters based on the field research and linking these to particular parts of the findings that they illustrate. These vignettes bring out different aspects of the experience of eaters in Dar es Salaam and illustrate different findings, so they are not all of the same length or necessarily following a common format. They rather share parts of the lives of different eaters that illustrate particular aspects of their eating and food acquisition that first of all simply illustrate where they get food from and also begin to inform conceptual and theoretical findings through the application of the grounded theory approach.

Some key statistics are drawn on to contextualise the field research and vignettes by showing the bigger picture of the circumstances of eaters in the city. The important point that these statistics help to confirm is that the eaters I am focussed on are reflective of the experiences of the majority of residents of Dar es Salaam in relation to factors like overcrowding and lack of facilities, such as fridges.

The primary interest in this study is the majority of eaters in the city, thus most of the eaters interviewed and accompanied in their daily lives during the research, and the sample of those who are referred to in this chapter, are representative of the experiences of that majority in terms of their socio-economic conditions and sources of food. A few eaters who are part of the minority of wealthier people in the city are also referred to for a wider perspective including on the alternative places, such as supermarkets, where these wealthier eaters source food. The way these wealthier eaters are less integrated with the symbiotic food system helps to highlight, through the counter-example, some of the factors that hold the symbiotic food system together as well as revealing risks to the system.

The perspectives and starting point of the eaters is integral to the ethnographic and grounded theory approach being applied in this study and one of the factors that differentiates it from many studies on food systems and on food supply or value chains. Starting with what the eaters eat and where they get that food has shaped the rest of the study, determining which foods to follow and therefore how the research would proceed. It is this approach that has played an important role in enabling this study to reveal a different reality that has been missed by many other studies.

## 4.2. Statistics

Key statistics, listed in Table 1 below, confirm that a large number of people live in conditions such as those described in the vignettes below for all the eaters except the last two.

It is clear that many residents of Dar es Salaam live in crowded conditions with little or no secure storage space for food. Very few have access to fridges or private motorised transport and this has a major impact on what food they can buy and where. More than half of people in the city do not have electricity and many of those in houses with electricity still cook on charcoal or firewood.

**Table 1 - Key statistics urban Tanzania and Dar es Salaam living conditions.**

Key statistics on the living conditions for mainland urban residents - including Dar es Salaam that is by far the largest urban settlement - in Tanzania (National Bureau of Statistics, 2014; National Bureau of Statistics, 2013b; National Bureau of Statistics, 2011; REPOA, 2009b).

- 10.1% of mainland urban households have motorised transport (motorbikes, cars or trucks).
- 40.8% of mainland urban households have only one room for sleeping,
- 25.9% of mainland urban households have two or fewer members, the remaining 74.1% have three or more members.
- 2.2 is the average number of persons sleeping per room in Dar es Salaam.
- 37.1% of households in Dar es Salaam report owning the house they live in, 54.1% rent privately and 7.8% stay in someone else's house without paying rent.
- 20.9% of the mainland urban population has water piped to their yard or house.
- 45.4% of the mainland urban population has electricity.
- 64.6% of the mainland urban population cooks on charcoal and 23.6% on wood.
- 23% of the mainland urban population has a refrigerator.
- 27.3% of mainland urban households sometimes or often had a problem satisfying food needs in 2012.
- 26% of 5 year olds in urban areas are stunted due to poor nutrition.
- 16.4% of the Dar es Salaam population lives below the basic needs poverty line.

Only the last two eaters, mentioned below, use any form of transport for food shopping. Many survive not only on low incomes, but on irregular and unreliable incomes, and often have to resort to borrowing to get them through days when they have no income. A supply of food close to their places of residence, which can be bought in whatever minimum quantities residents can afford, is therefore extremely important.

### 4.3. Common concepts and inherent assumptions

My starting point for the research has been the human actors, the eaters. I went to them and talked to them because they eat and talked with them about their eating and where what they eat comes from. To see them and talk to them as eaters seems logical. This is not to exclude or ignore other aspects of their lives, but describes the starting point of my interest and in a language that does not carry other assumptions or baggage with it. Below I explain some of the terminology I could have used and why I have chosen not to.

#### 4.3.1 Consumer

From a methodological and analytical perspective, I am concerned that the concept of 'consumer' carries certain assumptions about the nature of people's acquisition of food and food itself. Thus I do not use the terminology for my own research, but this needs some explanation as many people would have used the concept of consumers for a study like this, indeed, Cook whose food following footsteps I to some extent follow with my research methodology, refers to consumers in his work (Cook, 2006; Cook, 2004). Cook, however, also agrees to some extent with those who note that there are assumptions about things like the extent of agency of consumers and a need to 'de-fetishize' food 'commodities' (Cook, 2006: 7).

Cohen in her comprehensive look at the rise of the 'consumer's republic', that she argues is America today, makes clear the notion of consumer involves the acquiring of "wonderful things for purchase – the televisions, air conditioners, and computers that have transformed American life over the last half century" (Cohen, 2003: 7-8). The way these are bought and the character of these consumer goods do not relate well to the food acquisition and the food itself that is eaten by many in Dar es Salaam. Cohen further outlines the contestation between two main 'ideal types' of consumers: the 'citizen consumer' and 'purchaser consumer' (ibid). Neither of which fit the majority of eaters I have interacted with in this study. There is a wider literature on consumer movements, for example Sherwood et al with their paper on the rise of the consumer-citizen in Ecuador. That paper, as just one example, confirms my concern when it makes clear that consumers are assumed to buy; the examples of organisations given in the paper, such as the Canasta housewives, are organised around buying with the primary benefits including "the establishment of a shopping routine" and obtaining "fresh produce for discounted prices" (Sherwood et al., 2013: 7).

Davies in her study of money captures the way the notion of a consumer and a particular notion of political liberty are inseparable when she talks of how the "essential link between money, free consumer choice and political liberty is the central and powerful theme of Milton Friedman's brand of monetarism" (Davies, 1994: 3). During the 'cold war' era and beyond consumerism was integrally linked to the defence of big business, democracy and capitalism in 'Western' societies with the consumer purchaser seen as essential for democracy with the "yoking of free choice as consumers with political freedom" (Cohen, 2003: 126). These are connections and theorisations of consumers that are both beyond the

scope of this study to fully explore in the Tanzanian context and do not appear to fit with the nature of the eaters I have looked at and how the food system they are an important part of works.

For some, the consumer is integrally linked with a particular view of consumption that for Marx was the conversion of a commodity that “has found a resting-place where it can serve as a use-value” thus falling “out of the sphere of exchange into that of consumption” (Marx, 1995: 64). Again, this is part of a broader debate, but is problematic when food eaten has not been bought, is not part of that sphere of exchange and has therefore not been commoditised.

This study has not started with the assumption of eaters engaging in economic transactions to acquire commodities nor the assumption that the eaters have a choice in how they obtain food. The starting point has been one of taking an interest in people because they eat and finding out what they eat and where it comes from. This was important methodologically to avoid excluding certain food supplied and my findings have borne out the value of the approach. For example, in the case of Magdalene, elaborated below, a mother with no regular income ensures her child is fed through the strategy of taking her to a friend’s house where the child eats what the various people in that house eat. This does not fit common notions of consumer action; neither the mother of the child nor the child purchased a commodity and neither made a choice about which food was to be eaten. In other cases, where the eater has very limited means, they have made clear they purchased the food because it was all they could afford in order to feel that their stomach was full. There is a questionable level of choice in such a situation, even if a commodity was purchased. We can see people who cook and eat food, but did not buy or have any direct say in the buying of the food, such as some of the meals Mama Lina, see below, cooked with ingredients bought by her husband. While most food eaten in Dar es Salaam has been traded and thus to some extent commoditised, there is a considerable exchange of food that does not involve money or commoditisation. This includes food gathered, such as crabs caught by the young men living on the street corner, and gifts and other food brought directly from where it was produced, like maize Mama Lina’s husband brings from the village and green vegetables urban farmers sometimes give to Husna. Sharing of food is also common, as illustrated with some of the vignettes below, thus, what once may have been commoditised is now exchanged outside the confines of a financial transaction.

In short, there are various schools of thought and a whole literature on consumers, many of which are not applicable to the context I am looking at and most of which, applicable or not, are beyond the scope of this study to properly engage with. Thus, I move on with the narrow and practical concept of an ‘eater’ as both a methodological starting point and a less loaded concept to use in my analysis of the food system that feeds Dar es Salaam.

### 4.3.2. Household

Many studies similar to this one would likely use the concept of a 'household' as a starting point especially when looking at the food eaten. A number of people I have discussed this research with also reverted to the concept of household with questions, such as; "so you are looking at what households eat?" Others directly asked; "why don't you look at households?" My starting point is the eater, not the household; as with the concept of 'consumer' some explanation is warranted.

The National Bureau of Statistics in Tanzania says a household "[r]efers to people who live together and share income and also basic needs. In other words, residents of a household share the same centre of production and consume from that centre" (National Bureau of Statistics, 2014: 3). Some of the cases referred to below could fit fairly easily into the above definition, for example Caroline appears to live in a fairly clearly defined household as does Abasi. Other eaters, notably Jamil, Mama Lina and Magdalene, would be hard to situate within any kind of defined household as per the above and other standard definitions. Hassan could be looked at as living in a household with his sister and grandmother, but a substantial amount of his eating happens with a totally different group of people in another part of town and drawing on different sources of food and income. From the perspective of eating, even Caroline and Abasi frequently eat outside their households making that not the most useful starting point.

A further practical consideration is that to establish what one eater eats is not easy, requiring plenty of discussion and observation. To establish what is eaten by an often amorphous and changing group of different people loosely linked under the term household would likely lead to difficulties and/or inaccuracy.

## 4.4. Ethnographies of eaters

In this section, I sketch the situation of some eaters to illustrate how they eat, where the food comes from and relevant conditions that shaped their food choices. I also link these vignettes to some of what emerged as important findings at a conceptual and theoretical level.

### 4.4.1. Mama Lina<sup>8</sup>

Mama Lina has nine children and 30 grandchildren. She lives with her husband, some of her younger children and some grandchildren, in small rooms built around the yard behind a house. I say "some" because the numbers of children and grandchildren living there varied quite often and Mama Lina is not sure from one day to the next who was staying and eating there. Two of her children are there most of the time and normally around five grandchildren and then some others come and go. Those who eat the food Mama Lina cooks change even more from meal to meal than those who sleep in the rooms around the yard. As noted above, the concept of a household and the defining the household would be difficult

---

<sup>8</sup> This is not her real name. Pseudonyms have been used for all individuals referred to in this thesis.

in this case. Important to understand for this arrangement, that would be missed in a household based analysis, is that quite a few of Mama Lina's children live nearby, within easy walking distance, with their children so there are considerable movements between houses for eating and social interaction. Some of the children and grandchildren come to eat with Mama Lina and then go home, some who live with her go to eat with their parents and then came back to sleep at Mama Lina's place. These children are also frequently accompanied by their friends. Mama Lina's husband and the sons who live with her quite often eat food such as chips and other street food cooked nearby even when there is food at home. Fish soup cooked and sold at the fish market is a favourite among the men. One son has health issues and doesn't like to eat *ugali* (maize flour based stiff porridge), a staple of the household, so he often eats elsewhere. On a few rare evenings, Mama Lina does not cook at all, she drinks tea, her husband buys chips or other food outside the home and the grandchildren and their friends go to their parents or other homes to get food.

All the cooking and eating happens in the yard surrounded by the rooms where people sleep, unless it is raining and then people sit in the corridor or several of the rooms. Mama Lina cooks on two charcoal stoves and a mat is spread on the floor for people to sit on. On one of my first visits Mama Lina told me, "in the night we will put the mat here, children, grandchildren, everyone will get their food". The food is normally served on a large metal plate or plates each one shared between a number of people who sit on the mat around the plate. Whoever comes gets food, until it is finished. Those eating include friends, in particular other children, who are not relatives, but eat if there is food. Mama Lina is always generous in sharing whatever food is there, including with me when I was with them carrying out research.

Mama Lina hardly ever leaves the house and when she does she doesn't go far away. Her husband buys food like fish, meat and chicken at the markets. She sends her children to the nearby *duka* for rice, maize meal, beans, cooking oil and to the *genge* (vegetable stall), also within about 50 metres of the house, or to the market in Mikoroshoni, for vegetables. Meat is bought in Mikoroshoni or at a local butcher that is not open every day. Mama Lina likes the local butcher as it is close and the prices good, she said "they sell half a kilo of beef for TSh 3,000 [\$ 1.82<sup>9</sup>], if you talk to them nicely they will give you for TSh 2,500 [\$ 1.52]". Fish are bought from the fish market or brought by a man who gets fish at the market and then takes to his customer's homes.

Mama Lina and her husband are originally from Morogoro Region and they came to the current house in Dar es Salaam in 1966. They still have some fields in the village and Mama Lina's husband goes there at least once a year and arranges planting and harvesting. He and other relatives and visitors come from the village with food such as rice, maize, peas, beans and live chickens that they share with or give to Mama Lina. The whole maize kernels

---

<sup>9</sup> The exchange rate used is TSh1,650 to USD\$1, which was the approximate average rate during the primary research period.

brought from the village are taken for grinding at mills near the Mikoroshoni Market. The chickens are slaughtered for eating and sometimes kept for a while for eggs and for eating later.

In the mornings, Mama Lina, her husband and others who are around drink tea with chapatis, *maandazi* (doughnut like deep-fried flour snack) or *vitumbua* (rice flour based sweet bun). These are bought from women who cook them at their homes nearby. Mama Lina knows which ones she likes. Pointing at a gate across the road Mama Lina says, "*vitumbua*, is this gate here, she cooks very nice *vitumbua*, that mama". There is rarely a proper lunch cooked, unless there are visitors or an event, like a wedding. Mama Lina normally said she was busy when asked about what she ate for lunch. The main meal is in the evening and is normally *ugali*, less often rice, and sometimes a banana, meat and vegetable stew dish. The *ugali* and rice are eaten with beans, meat or fish, sometimes chicken pieces. Almost every meal has green vegetables cooked with it and sometimes there are only green vegetables to go with the *ugali*.

Asked about her favourite food Mama Lina says *ugali*. Her reason is that rice, although nice, is too expensive and if she cannot buy enough the children will not be full. "*Ugali* is good, rice is not bad for some days, but rice, the price Marc [the author], one kilo of good rice is TSh 2,000, with all the children I can buy four kilos and they will eat it all. If I get two kilos, they [she makes crying noises], it is not good. That is why I like *ugali* a lot. With *ugali*, one and a half kilo is enough", Mama Lina explained.

Most of the income to buy food comes from selling charcoal from their home and Mama Lina's husband and son doing small business activities as property rental *dalalis*. A charcoal trader supplies them with large sacks of charcoal weekly on credit and collects the money when delivering more the following week. Mama Lina does most of the charcoal selling, or at least oversees her children and grandchildren doing it, because she is at the house all the time. The property rental *dalali* business is based on word of mouth networking to try and link people who want to rent a place with those trying to rent out houses or rooms. It brings an erratic and not very large income. Money is also frequently borrowed when business is not good or large expenses come up. There is frequent buying of food on credit, especially from the *duka*. This is sometimes very short term, such as taking rice now and paying later the same day when another bag of charcoal is sold or the husband or a son came home with a bit of money. Sometimes the borrowing is for days or weeks, while waiting for a rental deal to be concluded and money to be paid. Mama Lina explains how she has to plan with the money to get food for the morning, the afternoon and the evening and to have the money needed to pay the charcoal delivery man when he comes on Wednesday. "First I know food is the most important [in the home], the first is food, if you fail one day with food, children will cry, if the children eat and others eat, well, other things are luxuries" she says. Mama Lina tried to ensure that there was a proper meal available at least once a day. In the family around her, with its wide range of people with different bits of income, there

was also quite a bit of snacking, mostly on street foods, and eating of sweets and drinking of soft drinks.

Being at the centre of a large family network there are quite a lot of visits and social events at Mama Lina's place and these tend to always involve food. Visitors are given better food, Mama Lina says, "when we have visitors, we can't cook *ugali*, *mzee* [my husband] says we must cook rice with coconut". During Ramadhan, more people gather for a wider variety of food at the evening breaking of the fast. There are also weddings a few times in most years and these involve a large amount of food being cooked with family and community members contributing and joining in the cooking and eating that takes place in the street outside the house.

We can see here how proximity and price are important factors in purchasing decisions. The bought food is almost exclusively purchased within easy walking distance of Mama Lina's home. The only food acquired further away is that coming from the village where the family maintain some agricultural production. There is a large degree of sharing within the extended family network and beyond to friends, in particular children. This sharing is reciprocated with children who live with Mama Lina also going to other people's homes for food. Food is brought from the village quite often in the form of gifts, but is not the mainstay of the diets. What the contact with the village does is to contribute to the family, despite decades of urban living, continuing to eat and prepare food in a very similar way, including slaughtering chickens and grinding maize. Both in the village and in the urban setting they are operating, at least as far as food is concerned, in a common set of cultural repertoires to the rural food producers and processors. There is a large degree of familiarity with the suppliers including the neighbouring women who cooks *maandazi* and *vitumbua*, the butcher and the *duka* owner. The men are also very familiar with the nearby chip seller and the soup cook at the fish market. These are all relations with individuals who run their own businesses and who Mama Lina and members of her family have interacted with for years. We can also observe the highly-gendered nature of roles in relation to food and eating.

#### 4.4.2. Magdalene

Magdalene is a slender young woman with a plump baby always on her side or by her side, when she is not working. Magdalene says she is Makonde, an ethnic group from Mtwara in the south of Tanzania. Her favourite food is a Makonde dish called 'chipweni' (Mseto in Kiswahili), which is made with a mixture of ingredients including bananas, rice, peas and other grains. When she has money, she buys this from a street food vendor who is herself Makonde.

A typical breakfast for Magdalene and her daughter was tea with *maandazi*, chapatti or bread. Sometimes she would get fried cassava. Lunches were rice or *ugali* with beans or green vegetables, sometimes with meat or *dagaa* (small sardine/anchovy fish). Now and again she gets chipweni. When she had little money she ate biscuits with water or had no lunch. The evening meal was often *maandazi* or cake (sold at the *dukas*) with soft drink, juice

or water. Sometimes she would have left over food from lunch, or, if she had money, she bought chips. Only one of the restaurants that Magdalene worked at over the years gave staff food to eat.

When I first met Magdalene she was 22 years old, her daughter Pretty was less than a year old and they had just been flooded out of the room they rented in an *uswahilini* (informal settlement) area. She had lost most of her few possessions and the rent money that she had paid several months in advance for the room. The owner of the room, which was washed away with the rest of the house, said he had nothing to refund. Magdalene stayed temporarily with different friends, often themselves living in overcrowded and difficult conditions. She has no strong family support network. Her father left and married another woman when she was in primary school; she has not seen him since. Then Magdalene's mother passed away when she was in form three (about 15 years old). Her grandmother had passed away three years before that. She stayed for a while with an aunt, but when the aunt married they couldn't stay together and they lost contact. The father of her child disappeared when she told him she was pregnant. She has searched for him in some of the places she knows he used to hang out, but has never been able to find him.

Magdalene has been to high school and speaks a little English, so is better equipped than most of her peers for the world of 'formal' work. She managed to get a job as a waitress in a restaurant targeting the expatriate and elite Tanzanian community. With the regular income, she rented another room, then when that room was also flooded she moved again, paying the normal six month's rent in advance. Things were looking better for a few months, she had an income a room just for her and her daughter and was able to buy the food and other things she needed. Then one day, Magdalene explains, "I was at work, I came back in the night and found my things outside". It turned out that the person she had paid rent money to was not the real owner of the house and now the owner was throwing all the tenants out. In the process, some of her few possessions were broken or stolen. She had no cooking equipment, stove, pots, or plates left.

After that eviction, I met Magdalene in a small room, about 2.5 x 2.5 metres in size, in the back yard of someone else's house. The person who rented the room was out of town and was a friend of a friend who arranged for Magdalene to be there temporarily. Because she had lost her cooking equipment and had no money to replace things, she depended on buying food from street food vendors, uncooked food from the *duka* and eating at a friend's house. Pretty was still only a year and three months old. To make matters worse, Magdalene had also just lost her job; the restaurant had to shut down after the building the restaurant was in was sold. Magdalene had saved a little money, but she knew it would not last long. She had to use money for transport to go looking for work and she tried to keep TSh 20,000 (\$ 12.12) aside for emergencies, such as taking Pretty to the doctor.

The night before that interview Magdalene and Pretty had Azam juice, a 250-ml box each and shared four *maandazi* for dinner. These were all bought from the last *duka* on the street.

That is not the nearest *duka*; she goes to the further away one because she likes the *maandazi* from there. She tells me “they are cooked well, soft, and wrapped up in a certain bag, like in the supermarket, not like the ones cooked in oil in the streets”. Magdalene never buys in the supermarkets and they don’t sell *maandazi*, but she has a certain image of what supermarket food is. Magdalene’s commitment to juice, which she believes is better for her child’s health than soda, is to some extent undermined by the fact that the Azam juice is fruit pulp mixed with water and has added sugar and flavouring. Magdalene tries to buy bottled drinking water for Pretty, but drinks tap water herself.

At that time, Magdalene’s daily routine involved breakfast sometimes of tea and *maandazi* from *mamantilie* (woman street food sellers) or when she could afford it milk from the *duka* for Pretty to drink with the *maandazi*. Then she would take Pretty to a friend’s house to leave her there while she went to look for work. One of the reasons for doing this was that Pretty got fed along with the other children at the friend’s house. Sometimes Magdalene would eat there as well, but there is a fine balance to maintain. Magdalene doesn’t feel she can eat at the friend’s house unless she contributes to the meal. When she has nothing to contribute she leaves Pretty there and goes away. On many occasions, Magdalene had nothing to eat during the day as she went around looking for work, or just waited for the time to pass until Pretty would have eaten and she could be picked up again. On better days when Magdalene had some money she would buy rice (she did not like *ugali*) or vegetables to contribute to the lunch, sometimes her friend’s boyfriend would buy some meat to add to the lunch. The neighbours and their children and the worker in the hair salon in the other rooms of the shared house where the friend lives also contribute and join in with shared meals if they are around at the time.

At one point, soon after the particular interview referred to above, when she had no job or secure home, Magdalene got cholera and was sick for months, which, among other things, meant she was not able to take up a job opportunity that she found. The cholera, according to the doctor, was from drinking contaminated water or eating contaminated food. When times were tough Magdalene and Pretty stayed in different rooms of friends and borrowed or were given money.

Over the following years, Magdalene continued looking for work and got bits of work from time to time. Once when meeting a man who promised her a job she was locked in his room, luckily neighbours rescued her after they heard her screaming. Another time when she responded to a job opportunity at an upmarket restaurant the Manager said she could have the job if she had sex with him. Another employer started her with training and doing ‘practicals’ (on the job training), but for no pay and with no guarantee of a job when finished. She had to find money to get to work and feed herself and her daughter while serving food to the rich clients. Another challenge that Magdalene faced when working in bars or restaurants was that she finished late in the evening. This made it hard to collect Pretty from whoever was caring for her at the time and she also feared for her safety when

going home late using public transport and walking. None of the places she worked assisted with transport.

At the end of the period of field research Magdalene had secured a steadier job working in a bar and was able to rent a room for herself and Pretty, send Pretty to a pre-school and be more regular in her food buying. It was not clear, however, how long that would last.

Magdalene's experiences reveal a lot about the challenging conditions for many eaters in Dar es Salaam as well as how she survives these with the assistance of friends and how she benefits from the accessibility, proximity and flexibility of food supplies within the symbiotic food system. Her additional vulnerability due to a lack of a strong family network is important and shows how people can fall through the cracks when there is no social safety net. The existence as well as the limits of reciprocal arrangements with friends around food is important to recognise in this regard; people share the little they have, but this cannot be abused. Symbiotic relations are built on mutual benefit, even if sometimes long-term and indirect, and though they involve sharing, this can only be stretched so far. In relation to children, however, there is additional flexibility as seen with Magdalene being able to rely on her friend to feed Pretty, even when she didn't feel she could get food from the friend for herself.

The insecure living conditions and vulnerability of women, revealed above, are all important considerations in addressing urban food security. The insecurity and poor quality of 'formal' employment should also be noted, for many people the jobs they have access to are not providing good job and income security.

#### **4.4.3. Sharifa**

Sharifa is ten years old and lives with her mother, father and a cousin. During the period of the field research Sharifa's mother had another child, adding a baby brother to the family. Frequently other relatives come to stay for short periods of time, sometimes for months. An example of this was when an uncle of Sharifa (younger brother to her mother) came and stayed while recovering from a *bodaboda* (motorbike taxi) accident that broke his leg. With no income while he could not ride the *bodaboda*, he sought a relative to stay with while recovering. The house they live in has three bedrooms and separate lounge and kitchen areas. They have electricity and an old lounge suite and television. The house belongs to the family although there is a dispute with a relative who is claiming it as it was still registered in the name of an uncle of Sharifa's father who passed away six years ago.

It is not usual for Sharifa to eat in the morning. Her first food of the day, during the week, is normally a snack bought at school with a few hundred Shillings given to her by her parents. On a bad day when her parents have no money her response to my questions about what she ate, even late in the afternoon, would be a simple "sijala" (I did not eat), asked to elaborate she would say "I did not eat anything in the morning, I did not eat anything in the afternoon" and then explain that "I did not eat anything because I had no money". When

she has TSh 500 she buys chips from one of the *mamantilie* (Photograph 1) cooking at the edge of the school yard. She said her favourite food is chips and eggs bought from the chip seller down the road.

At the weekends, if there is money at home, Sharifa would go late in the morning to get *maandazi* or chapatti from a *mamantilie* around the corner. She would eat this along with tea made by her mother or bought from *mamantilie* when her mother didn't want to make it.

There was hardly ever food prepared at lunch time. Sharifa would make to do with food bought at school and other snacks she managed to get. A few times I found Sharifa eating boiled peanuts given to her by a man who passes the street with a trolley selling the nuts. Another time I found her eating a mango given to her by a fruit seller near the beach. Sharifa liked sweets and cheap packets of crisps that she buys from Mangi's Duka<sup>10</sup>. When the money she has is not enough for the cooked chips she gets a small packet of crisps for TSh 100 or TSh 200.

The main meal of her day is in the evening when her mother cooks on a charcoal stove in the kitchen or in the back yard of the house. The most common dish being rice and beans cooked with coconut milk and with green vegetables on the side. At other times, some meat or fish is added. They rarely eat *ugali*. Pilau is the favourite food when there is money and during holidays. The rice, beans and other items and household goods are all bought at Mangi's Duka. Often it is Sharifa who does the buying, even fairly late in the evening. At times, she asks neighbours for money to buy items like rice when there is none at home and then gets rice at the *duka* in whatever amount she has money for.

Vegetables and coconuts are bought at the *genge* in the street or in the next street around the corner. At both places Sharifa, or her mother, can get as little as one tomato or one onion if they need it to cook. From the *genge* in the street, which is run by one of their neighbours, Sharifa and her mother frequently take items and pay later, they also both help the neighbour keeping an eye on the *genge* and selling for her when she has to go somewhere. Sharifa's father sometimes comes with vegetables, onions and tomatoes from the Kariakoo market near where his shop is.

Mangi sometimes sells to Sharifa and other family members on credit, but it got to a point where Sharifa's family owed too much money. Her mother's drug use combined with her father's struggling business did not make life easy for the family. Sharifa's father has a small business selling used car tyres in Kariakoo near the centre of town. The used tyre business is bad these days because of the competition from cheap imported Chinese tyres. Sharifa's mother braided people's hair for money, but it was not a consistent business.

When not at school Sharifa spends a lot of time in the street outside her house or going further away, normally with a few friends of a similar age. These friends sometimes eat at Sharifa's house when there is food there. One of the friends, whose father was not known to

---

<sup>10</sup> Mangi is introduced in section 5.2.1. of this thesis.

her and whose mother had a very limited and unreliable income, ate their often. Sharifa also sometimes joined her friends to eat at their houses, or at the houses of their relatives. They eat in any house where they are playing if there happens to be food cooked while they are playing there. They also select a place to play where and when there is a greater likelihood of food being cooked. During Ramadhan, the little group of girls run around to the mosque at the right time for the breaking of the day's fasting. The mosque arranges food for dozens of children who eat together outside the mosque at sunset during Ramadhan.



**Photograph 1 - The activities of mamantilie; a source of food and income. In this picture we see chips, peanuts and fish for sale and the provision of a safe resting place to sleep off over consumption of alcohol.**

We can see in Sharifa's life that there is a lot of sharing of food. She and her family share food with Sharifa's friends who visit and with relatives who come to stay to benefit from the accommodation as well as the food. Sharifa also receives food from others such as fruit and nuts from traders, food at the mosque and food at friends' houses when she visits them. She also receives money specifically for food from neighbours who are sympathetic to her, but less so to her mother. There is an element of reciprocity in the giving from some neighbours as Sharifa's mother is not averse to sharing food when she has and some of the neighbours children will be at her house at times as well. The interest free credit is part of a symbiotic relationship where the *duka* needs the customers in the area and they need a *duka* that accommodates their circumstances, but if some of the customers are too problematic they

become outliers the *duka* can do without. The relationship with the *genge* goes further towards interdependence in this case as Sharifa and her mother also assist for free in the selling, thus giving the owner more flexibility to do other tasks.

We see how the food system cannot solve all livelihood issues; if there is no income it becomes hard to get food, although the sharing and charity does assist. The symbiotic food system with its range of food suppliers all very nearby does, however, maximise accessibility. The *duka*, *genge*, neighbours with *maandazi* and street food vendors at Sharifa's school, all sell in small quantities and low prices that she has a better chance of affording. They all know her and there is no difficulty for Sharifa to go alone to the *duka* at night with Mangi always keeping an eye on what is happening in the street. The supermarkets and KFC, in contrast, are all completely inaccessible for Sharifa. She could walk to them, but it would be a long walk that she wouldn't do after dark on her own and she would not be able to afford what they sell, especially in the set quantities they use.

#### **4.4.4. Husna**

Husna, aged 24, lives in one room of a two-roomed house with her one-year old child, her mother and her younger brother aged 23. The room is about three metres by 2.5 metres in size. They rent out the second room in the house for a little income. The house was built by Husna's mother when she had a job with a company selling fish nets. Now, due to a stroke, she cannot work.

Husna cooks on a small charcoal stove in the narrow space between her house and that of her neighbours (Photograph 2). The short corridor separating the two rooms of the house forms the main social, living and eating space (Photograph 2). In this corridor Husna's child and visitors sit on the floor, or on low stools borrowed from the neighbours, share food and talk.

Husna's younger brother has no job, but goes out each day trying to find employment, working as a temporary security guard or chopping and selling firewood he collects along the river banks to earn a few shillings. Husna does not know how her brother gets money for food, she simply says "he has his going around, around, this and that which he does". Many days Husna has no money to buy food and waits for her brother to come home, hoping he will bring some maize meal and on some days green vegetables to make a meal for the day. I have sat with Husna, her mother and daughter as the afternoon has turned to early evening and they have not eaten and are not sure if they will eat, as they wait and hope the younger brother does not come home empty handed.

Husna's child lacks energy and has had a series of illnesses. Visits to the doctor revealed that the child had parasites (worms), which would have reduced her nutrition absorption, but treating that still did not completely solve the problem. Sometimes Husna borrows food from neighbours or buys on credit from the shop, but she cannot do this for long if she

cannot pay them back. There is no money or space for cupboards or a fridge in her home. They buy what food they can when they can and they use it straight away.

Most of the food that Husna cooks and eats is bought from the local *duka* about 100 metres from where Husna lives. She also buys green vegetables from urban farmers growing food on the land next to the nearest school. These urban farmers, who live in the area, give Husna vegetables sometimes when they have some left at the end of the day. At times, the food is from traders at a people's market. When Husna's brother gets a little work near the market, he buys food there to bring home. Husna says she like beef, but they rarely have it due to the price.



**Photograph 2 - Husna cooking on a charcoal stove behind her house and sitting on the floor and eating Ugali and green vegetables in the corridor.**

Husna's mother had formal employment, but that has also failed her when she became unwell, now she depends on the same *shughuli shughuli* (this and that) of her son. It is not only the so called 'informal' income generation that has insecurity. It is hard for Husna to go and work, whether in a job or business activity, as her child is sickly and her mother also needs assistance.

The flexibility of quantities and time and proximity come through again. The lack of space and the lack of money limit the potential to buy and store larger quantities of food. The limits of what the food system can do if people do not have an income is also clear, the sharing, such as from those doing urban agriculture, assists, but social safety nets need to be

considered. The cooking style and food are very similar to other eaters in Dar es Salaam and to what the food producers, including the rural *wakulima*, eat. This indicates a common experience and understanding of food.

#### 4.4.5. Tabu

Tabu is in her early thirties and HIV positive and also struggled for a long time with tuberculosis. This is important to mention straight away as it has a big impact on her life and her eating. When I first met her Tabu was quite sickly and she had a baby of about a year old who was also sick. Tabu started on a regime of anti-retroviral drugs (ARVs) and started to get stronger, but her baby passed away. She has an older son who has been taken in by relatives and she does not see him anymore. Her husband passed away some years ago, that was when her life became harder. Previous business efforts that she started failed when medical expenses, for her child and later herself, absorbed her money and her poor health made work difficult.

Not long after her child died she was evicted from the room she was renting in a shared house. She told me "I have a problem, I have been chased from my room. They found me out [that she is HIV positive] and were angry. They said I will infect their children". Tabu started staying in a half-built house of grey concrete blocks with no doors or windows and a floor of packed earth. Three women lived in the house, including Tabu. She in a room with a foam mattress on the floor placed on top of cardboard boxes and little else. The owner of the house, who lives somewhere else, let Tabu stay there rent free and in exchange she kept the house and the little land around it clean, preventing bush growing and overtaking the building. People living in the house also prevent it being vandalised or occupied by other people. The house has no electricity and the lack of doors and window meant it is not secure. At one time Tabu's mattress and cooking equipment (charcoal stove, a pot, knife, plates and a few spoons) were stolen.

Tabu has a sister who lives nearby, but her sister's husband does not want Tabu to stay with them as he says she will pass on her infection to the family. The sister and the sister's daughter do help Tabu a little, but they don't have much and the husband discourages them from doing so.

It is a precarious existence for Tabu, relying on assistance from neighbours and relatives, sometimes doing odd jobs like clearing a neighbour's yard. There were a number of days that I met her when she did not manage to get a meal, let alone a decent meal. At the same time, due to her HIV status and the ARVs she is taking, the doctors advise her to eat nutritious food. She says, "these drugs are too strong. The doctor told me to eat well including yoghurt and other dairy products. I try to eat a lot of eggs, also drink milk; they add strength to my body". She buys fresh raw cow's milk from someone who collects from dairy cows nearby and distributes in the area.

Over the years Tabu employed a range of tactics to support herself. Inevitably, under the circumstances, I was asked by Tabu for assistance with money for food, which from time to time I did provide. Tabu became active in an HIV/Aids support group linked to the hospital where she gets free treatment. They held events where information and assistance, sometimes food, was provided to the participants. Despite being Muslim, Tabu started going to a church which arranged food and assistance for her. One time when she got very sick, she stayed for some weeks with the local government area leader. The women living in the other rooms of the house with Tabu sometimes share food with her as she does with them when she has it.

Tabu buys her maize meal, beans and other basic foods from the local *duka* when she has money and when she can get on credit. She sometimes eats at one *mamantilie*, Sarah, a few hundred metres from her house. She gets the standard food of rice or maize with beans and green vegetables, sometimes a little meat. Sarah frequently gave Tabu food on credit, but Tabu doesn't like to go back to her for another meal until she has paid off at least some of the debt she owes. Sarah grows green vegetables on land in the river valley nearby. She uses some of the crop in her own cooking and sells the vegetables raw as well. After knowing Sarah for a while Tabu started to earn money by going door to door selling the vegetables from Sarah's garden. Tabu had thought of trying to do urban farming herself, but her health did not make it easy for her.

Here we see clearly the limits of family support networks when, ill health and prejudice come into the picture. Family members did, however, take over caring for her surviving child. Sharing and reciprocation also assist Tabu as shown by house mates cooking and sharing food together and the various places and people that Tabu has received assistance from including religious groups, community leaders and the HIV/Aids programme where she gets treatment. She also has found income in the food system selling vegetables, something that emerged out of the relationship she developed with the *mamantilie* where she bought food.

#### **4.4.6. Ashura**

Ashura lives in a house in an *uswahilini* (informal settlement) area with her husband and three children. Her husband built and owns the house which is a simple design with three rooms on either side of a corridor that runs the length of the house. The family live in two rooms and rent out the other four to tenants. Just outside the door at the rear end of the corridor is a pit toilet that is shared by all the residents of the house. The toilet is built on a platform about one metre above ground level as the water table is very close to the surface preventing digging downwards. Most of the cooking happens just outside the door in the front of the house and sometimes in the corridor. Ashura and the other residents all cook on small round charcoal stoves that get packed away when not being used.

The family normally sit on a mat outside the front of their house and eat together in the evening. Their most common food is rice or *ugali* with fish and about once a week they eat

beef that is bought from the Mikoroshoni Market. There is always green vegetables as well, mostly *mchicha* (an amaranth green leaf crop). The food is cooked in different ways, sometime the rice is plain with the relish alongside it and sometimes Ashura cooks pilau with the meat mixed in. Lunch is at times a big meal cooked by Ashura and at other times small snacks, such as crabs or small fish. In the morning, Ashura and her husband and children usually drink tea that Ashura makes in a flask and eat *maandazi* bought from a woman neighbour who cooks *maandazi* early every day. During school days, the children don't drink tea before leaving home, instead they take a bit of money and buy *maandazi* or other snacks from *mamantilie* on the way to or just outside the school. The neighbour who sells *maandazi* to Ashura in the morning often buys fish from Ashura in the afternoon.

Ashura's husband is an artist, most of his income is from selling paintings to tourists in Zanzibar where he goes and spends two or three months during the holiday season. Whether her husband is around or not, Ashura does all the cooking and buys most of the food for herself, the children and her husband. Her husband contributes money for food when he has money, but much of the time the food is bought from money that Ashura earns as a *mamantilie* through buying, cooking and selling fish. She used to cook and sell chips and deep fried cassava as well and says she may start that again. Ashura buys small fish and sometimes crabs and tiny shrimps directly from fishermen at the Msasani fish market that is next to the ocean about a kilometre away from where Ashura lives. Most days she buys the fish in the morning and then cooks and sells them from a small wooden table on the side of the road in the afternoon and evening near where she lives. These are mostly the small fish that are cheap to buy. She deep fries them and sells the larger ones individually for a few hundred shillings depending on the size and the smallest she sells in piles for up to TSh 700 (\$ 0.42) per pile. The small crabs she sells for TSh 300 (\$ 0.18) each, slightly larger ones for TSh 500 (\$ 0.50). The cooking oil Ashura uses for cooking the fish, she buys from the *duka* just a few metres from where she sells the fish. She buys it in the exact amount she needs, "I measure only a little" she says and it is taken from a 20-litre drum by the shopkeeper.

Ashura takes some of the fish to eat with her family and uses the small profit left to buy other food her family need. The important staple foods are maize that she gets from the *duka* about 50 metres from her house and rice that she buys from near Mikoroshoni Market that is about 1.5 kms away. She also gets green vegetables, such as *mchicha* and other commonly used ingredients like onions and tomatoes from the Mikoroshoni Market.

Ashura is very integrated within the symbiotic food system and the very local social and economic relations that are part of it. She derives income from the system, buying fish at the market from local fisherman, who live in the same area and also buy from her. She buys *maandazi* from a neighbour who cooks them, the same neighbour buys fish that Ashura has cooked. Both women get their ingredients from the nearby *duka* and markets. There is a strong overlap with the social and economic relationships and high circulation of limited resources within the area.

The property ownership, as with Husna above, assists Ashura and her family, but it does not set them socially and economically apart from the others, including their tenants who Ashura cooks together with when cooking and eating.

#### 4.4.7. Abasi

Abasi is a taxi driver, but he is not a registered taxi driver and does not work from the municipality demarcated taxi ranks. He says “I am not an original taxi. I am a fake taxi”. Although he lives in another part of town, he spends most of his days in the part of Mwasani where he was born and his mother still lives. People know him there and he gets work through word of mouth and has regular customers who call him on his cell-phone when they need a ride. He explains that “my customers are around here, they know me”. He started taxi driving in 1995 after a friend taught him how to drive. He bought his own car in 2001. Before that he used someone else’s car, which meant he had to pay them every week, which he said is expensive.

Abasi is married and lives with his wife and their four children. He eats most food at home cooked by his wife. He says “I bring the money; my wife buys the food and cooks”. She does not have a job, but cooks and sells chips from home. If with clients far away from home he goes to *hotelini* (small restaurants/eating places). He avoids street food and says “I don’t eat there [from *mamantilie*] because the environment is not good”.

Most mornings he has tea with chapatti, cassava or *maandazi*, cooked at home by his wife. The main meal of the day is at lunch time when he goes home and eats rice or *ugali* (although he says he does not like *ugali*) with either beef, fish or beans and *mchicha* or *kisamvu* (cassava leaves). Sometimes he also has chips and eggs or pilau in the afternoon. In the evenings he has tea and bread or chapatti.

Much of the food, including the rice, maize, beans, and more comes from a *duka* close to Abasi’s house. They also go to the Kinondoni market for food and there is a butchery, about a kilometre from their house, where he buys meat. Abasi says he buys fish from “my friend who passes with fish from the market. He buys fish and distributes them”. Abasi and his family buy bottled water or boil the tap water they drink.

The main challenge he faces in getting food is that “I depend on passengers, sometimes business is bad, there are school fees to pay, until I borrow from people” said Abasi. All his children are at school or nursery school and he sends the older ones to an English Medium private school. He thinks the taxi business used to be better, but now there is a lot of competition from bajajis<sup>11</sup> and *bodabodas*. Abasi says “I sometimes get food on credit, but not much, like me wife gets water from shop and I pay later. Many people do get loans from the shop”.

---

<sup>11</sup> A bajaji is a three-wheel motorised scooter used as a taxi.

Abasi is wealthier than other eaters written about above; he owns a car, sends his children to private schools and owns a house where he lives with his family, not sharing with anyone else. He is still, however, integrated with the symbiotic food system. He and his wife source food from people they know, the same types of places as the others eaters and he still benefits from arrangements, such as credit at the *duka*. He does avoid the tap water and *mamantilie* most of the time, rather buying water and eating at eating places with better infrastructure and slightly higher prices, but these are also relying on the symbiotic food system, selling the same kinds of food and run by owner operators that the customers often get to know personally.

#### 4.4.8. Jamil

I am sitting with Jamil on the curb, on the side of the rough dirt road running towards the beach from the cross roads in Msasani Mwisho. We sit and talk and watch people passing by. Across the junction a man is grilling maize cobs, cars and motorbikes pass. A group of young men are sitting about 10 metres from us at the corner, a few with *bodabodas* waiting for passengers. This is the daily life of Jamil who lives in the street at this junction along with other young men.

Jamil explains that he does not have anyone to guide or lead him; someone to help him get work. "If you are going to help me, such as with a loan, you want to know that I will not give you trouble later. That you will have someone to go to, like parents, if I give you trouble. I must be obligated to you, if you know my family, then maybe you can employ me" he says. Jamil wants to get work and have a family, "but up to today" he continues "I sit here, I don't have a motorbike, I don't have a bajaji, I don't have a business to bring maize. I don't have any business at all, you see?" Jamil does odd jobs, such as collecting water and delivering it to people's houses for a few Shillings, that he says is to thank him. Asked what he would like to do he is clear; "I want to have my own work or business, I don't want to be employed by someone else". He says "they take you to work and they abuse/exploit you... I want my own plan, not the plan of someone else".

Jamil was born in Msasani. His mother and father passed away when he was a child. He says his mother was bewitched by a wizard. He grew up with the man grilling maize across the road from us. He is someone from the area that he has known since he was a child. Jamil has an aunt who lives in a rented room not far away, but he says there are six people living in two rooms, when he sleeps there he sleeps on the floor and feels he is a burden. He thinks it is better to sleep out in the street even though there are problems of sickness, due to mosquitos, which are worse when sleeping outside but also a problem when he stays with his relatives.

It is the middle of the afternoon, but Jamil has not eaten today. Asked why he has not eaten he talks of thinking of his father, of how his father also grew up without a father, "but he had a mother, not like me, I have no mother or father. Sometimes I drink to reduce thinking" he concludes. After a minute, he adds "I don't want to eat. Today, I don't have hunger". The

day before he ate rice and beans bought for TSh 1,500 (\$ 0.91) from a *mamantilie* who cooks in Mikoroshoni. In the morning, yesterday, he had two chapatis and tea. He carries the pots, cups and flasks for women who sell by the beach. They give him tea and chapatti in exchange. The previous day he had cooked and eaten *ugali* with *dagaa* along with five other people, he described eating as “one family”, at the street corner. They bought the *dagaa* for TSh 1,000 (\$ 0.60) at the market and the *sembe* at the *duka* and Jamil explains that “if we cook food, we collect money, those who can contribute they contribute, those who don’t have don’t contribute, we eat together”. He says they do not write down anything “but we remember, we know who has paid, when I don’t have money, they still call me to eat”. I ask if they do not exclude people after a while if they continue not contributing. Jamil say “we carry them until the end”.

On other days, I have sat with Jamil and the other young men on the street corner and observed as they gathered the food for their meals and cooked. The staple of the meal, mostly *ugali* and sometimes rice, is obtained by putting their money together or asking someone they know for the money. They buy the amount they can afford from the nearby *duka* and cook it immediately. The relish they cook to go with the *ugali* or rice varies. Sometimes it involves food harvested from the nearby ocean, such as crabs, and once that I saw, a small octopus caught on the beach during low tide. When one of the men catches something they share it with the others. At times they get the left-over fish pieces, such as heads from the fish cleaning if customers at the fish market don’t want them, or the small cheap fish. Likewise, they at times get waste or cheap vegetables from the *genge* nearby. For example, the tomatoes and onions that have started to go off. They pool their money to buy other affordable ingredients, such as beans, *mchicha* and *dagaa*. The cooking itself was done in a battered old pot balanced on rocks over a wood fire on the side of the road. They eat together from the same pot. The firewood is waste collected from building sites or the beach. Another source of food is weddings and funerals in the area. The young men often help with the arrangements such as putting up the tent, collecting firewood and cooking. They then eat along with the other guests.

Hassan is another young man who eats with Jamil and the group. Unlike Jamil, Hassan doesn’t sleep on the streets, he lives with his grandmother and younger sister who have no income and depend on him for food and other support. His younger sister is still at school and his parents passed away years ago. Hassan used to buy fish from the fishermen at the market and then sell the fish for an income. Now he is a *bodaboda* rider. He rents the motorbike from a friend and waits at the road junction to give people rides. When Hassan has a bit more money he buys plain chips or chips and eggs from the local chip seller on the side of the road. In the evenings, if he is not working, Hassan eats at home with food cooked by his grandmother or sister, the ingredients bought at the *duka* and the local market with money that he provides.

As Jamil said, Hassan also confirmed this, they carry members of the group who don’t have money, but what is not tolerated is when someone who ate without contributing still refuses

to contribute when they do earn some money. Hassan has a bigger income at the moment, but still enjoys the companionship as well as the food of the group of young men. He also sees this as a form of safety net, if things don't work out with the *bodaboda* riding, he will still have a place to go for food.

Both Jamil (carrying the pots for *mamantilie*) and Hassan (selling fish) have or still derive income from the symbiotic food system. They also get their food from this system at the local shops and markets and through sharing. They are in various sets of relations that are full of mutual benefit and interdependence from their own group cooking arrangement to the relations with *duka* and *genge* owners that they buy from and receive a level of charity from, as well as the role they play in family and community events. They are well versed in these types of symbiotic relationships. There is a high level of reciprocity in many of the relations, but I prefer the concept of symbiosis in part due to the organic nature of the relations and because, while symbiosis generally involves some form of mutual benefit, it is not necessarily such a direct give and receive in return relationship as with reciprocity. The young men sharing food, including at times with those who cannot afford to contribute, are in a more complex arrangement than straightforward reciprocity. Assisting at a wedding and then eating with the rest of the guests, for example, is more complex than direct reciprocity especially in a society where essentially all people in the neighbourhood can attend weddings in the area. Thus, the young men could - some do - go and eat without helping out.

I gave more space above to the specific conversation with Jamil, because he articulated so clearly part of the nature of the symbiotic relations of familiarity that enable people to get into business. Being in some way known is very important. You can, as other examples in this thesis show, become known. But a good family and friends network helps a lot. This is positive as it can facilitate entry into one's own business for those without any financial capital, but Jamil also shows the down side, which is that without those networks it can be hard to begin. Despite the challenges, Jamil is also very clear in his negative views about being employed by someone else; a sentiment I heard from many others during the research. He strives for a level of autonomy that is similar to that worked for by peasant farmers (Van der Ploeg, 2008).

#### **4.4.9. Caroline**

Caroline is an American citizen who had lived in Dar es Salaam for some years when first interviewed. She lives with her husband, daughter and a family friend. Caroline works with an international NGO, but she is paid in Tanzanian Shillings at the same rates as Tanzanian colleagues, unlike some foreign NGO workers who are paid in foreign currency as part of an 'international' salary and benefits package. Caroline lives in a house with four bedrooms, a lounge and dining room and separate kitchen. The kitchen has a fridge and gas stove that is used for the cooking done in the house.

Caroline does some food shopping herself and a lot is done by her domestic worker, Mary. Caroline or her husband drive to a supermarket about twice a week to buy things that are not easily available in the local *dukas* and markets. These are items such as butter, cheese, brown bread and brown rice. Sometimes she gets cheese and brown rice at an organic produce store. Mary cooks most evening meals during the week and goes shopping for the ingredients at the local *duka* and at the Mikoroshoni people's market. Caroline sometimes goes to the local *duka* herself, but more often sends Mary. Caroline rarely ever goes to the Mikoroshoni people's market.

Items bought at the *duka* include rice (white), beans, cooking oil, eggs, milk, juice, salt, *sembe*, etc. At Mikoroshoni Mary buys items like *dagaa*, smoked fish, chicken, coconut and vegetables such as okra, sour tomato, tomatoes, onions, ginger, *mchicha*, and *kisambu*. Caroline or her husband give Mary money for such shopping. Frequently Mary will pick up food and other items at the *duka* and then pay later when Caroline or her husband come home from work and give her money. Mary and Caroline also sometimes buy vegetables from a local *genge* in the street or around the next corner and they frequently buy green leafy vegetables from a person who passes the street daily selling them (see Chapter Seven). While at the supermarket Caroline sometimes buys additional items that are available at the local *duka*, such as juice and milk, "it is convenient, as I am already there" she says. Fresh fish, which is normally eaten at least once a week in the home, is bought from a fish seller who is called on his phone and delivers by bicycle to the house. He gets fish from the artisanal fisher people at the nearby Msasani fish market and comes with a few fish in a basket to choose from and then cleans the fish that are selected.

In addition to cooking at home, or having Mary cook, Caroline frequently buys ready cooked *maandazi*, chapatis and *vitumbua*, especially for breakfast. The *maandazi* and *vitumbua* are cooked by women living two houses from Caroline to the north and the chapatis are cooked by a woman in the next-door house to the south.

Caroline also eats out a lot. At lunch times, she goes to eating places near her office. Sometimes she gets food at work when she is attending a meeting or workshop. At the weekends the family frequently eat out at a variety of restaurants and eating places around Dar es Salaam. These include places selling more local foods, such as *mishikaki* (grilled meat on a stick), chips, rice and *ugali* as well as restaurants serving Indian, Chinese and other foods.

Caroline does buy from supermarkets, but is quite integrated into the symbiotic food system and makes choices, because they are convenient and cost effective to her, to acquire a lot of food from sources that are part of that symbiotic food system. This integration is strengthened by Caroline and her family largely eating typically Tanzanian food, which the ingredients for are available in the symbiotic food system. Having mobility and resources Caroline could distance herself from the symbiotic food system and move more towards the corporate food system of supermarkets and imported foods. She does not have the

familiarity with actors in the food system that other buyers have in part due to much of the food acquisition being done by her domestic worker. Mary has and draws on that familiarity, Caroline is somewhat distanced from it. Caroline could, however, be drawn more into a relationship with the symbiotic food system if outlets, such as the *duka*, added a relatively small number of items she buys at the supermarket to their stock. Improving the accessibility and environment at the people's market may also encourage Caroline and others like her to make more use of those facilities.

#### 4.4.10. Dale

Dale lives in a large house in compound in Masaki that is run by the USA Embassy. His wife works for USAID earning a salary in USA Dollars along with an international benefits packaging, including the house. Dale runs a small company that also earns in USA Dollars and he does a stint of work every year in the USA. The food the family acquire and eat reflects their mixed roots and influences. Some ingredients are brought by Dale's mother when she visits from Cote d'Ivoire, at the same time there is Jamaican jerk spice in the cupboard. Cheerios are bought online from Amazon in the USA and shipped to the USA Embassy in Dar es Salaam. At a party they held, one of the main foods was burgers and chips. The burger rolls were made in the European Union by a British Company, individually wrapped cheese slices came from France and the chips were frozen and from the Netherlands.

In the kitchen of Dale's house there are two large fridge freezers full of different foods. They also have a large pantry full of food. Most food is bought from Shoppers supermarket that they drive to. For fresh fish, however, they call a man who brings it on a bicycle from the local fish market. Their domestic workers also buy food for them from the Mikoroshoni or other markets and Dale goes there to get plantain sometimes. The family are also part of a direct buying scheme (mentioned in sub-section 2.5.) popular with expatriates in the area where Dale lives. This involves a box of mixed fresh produce being delivered weekly from a farm near Iringa about 500 kms away. Dale, his wife and their domestic workers all play a role in cooking on the electric stove or using the microwave in the kitchen.

Dale's wealth, fridges, mobility, international connections and choices disconnect him from the symbiotic food system and almost completely removes any sense of interdependence. He can, as with the Cheerios, completely disconnect from the local food system if necessary. Dale's food choices indicate the influence of established food cultures, but in this case as these are from elsewhere they serve to distance him from the food culture of most Tanzanians. He does, however, buy food from parts of the symbiotic food system, such as the fresh fish and plantains. He is also connected, but indirectly, to the symbiotic food system through his domestic workers buying produce at local people's markets and *dukas*, because they supply what he wants competitively. The vegetable box buying from the almost organic farm does not appear, given other buying habits, to reflect any particular commitment to local or organic food, rather it is another expression of the ability to choose a

wide range of foods that fit a particular image and set of preferences. Buying at the supermarket is also more a function of lifestyle and mobility than financial value as they buy items there, such as eggs, which they could obtain more cheaply elsewhere. Eaters such as this are a threat to the symbiotic food system as they take their resources elsewhere to potentially expand other food systems in the long-term. As we will see elsewhere in this thesis, they also undermine the symbiotic food system through replacing in the area others who would have contributed. For example, there is less livestock keeping in Masaki now than there used to be meaning both less locally produced milk and eggs and less manure for use in urban agriculture in the area.

## 4.5. Conclusion

### 4.5.1. Access to food

The main sources of food for the majority of eaters in Dar es Salaam, as illustrated by the examples above, are: the *duka*; the *genge*; people's markets; direct access from producers in urban and rural areas; and street food vendors. The supermarkets are only used by some elite eaters who have access to transport. Getting to the supermarket requires transport immediately making it more expensive and less accessible for the majority. As will be illustrated in the coming chapters on particular foods, the supermarkets are more expensive for the buying of the food that most eaters rely on. The supermarkets also certainly do not sell on credit.

Widely agreed definitions of the "right to food", include, people having "physical and economic access at all times to sufficient, adequate and culturally acceptable food" (De Schutter, 2014: 3). What this access entails at the micro level is less often analysed. From this study, we can delve in more detail into the factors that make food accessible for most eaters in Dar es Salaam (Table 2).

Low prices are clearly important and are maintained by having low overheads and getting supplies through an efficient food system, which will be elaborated through the coming chapters of this thesis. Beyond low prices, accessibility of food for more people also requires the sale of food in flexible quantities that match the exact needs and purchasing ability of the eater at the time they need the food. Whereas the supermarket model tends to only offer their better prices when buying in bulk, such as getting a 25-kg sack of maize rather than a kilo or even half a kilo, the *duka* and the people's markets sell at the same low price regardless of the quantity. The system of measuring out the quantities that a customer wants (or can afford), rather than selling pre-packaged foods, is practiced for the main foods in all the *dukas* and markets. Flexibility of quantities is also a necessity for many due to the crowded and insecure living conditions that do not allow for safe storage of food.

Proximity to place of residence reduces or, in most cases in Dar es Salaam, eliminates transport costs and saves time. This becomes more important when buying in small quantities and depending on an unreliable income; for most eaters in Dar it is easy to get to

the *duka* when they have the money and need the food. This, combined with the long opening hours of *dukas*, allows for the use of the fridge and other storage at the *duka* when you have little space at home. For example, Magdalene can buy cold juice or milk for her daughter after getting home at 9 pm and Caroline can get freshly cooked chapatis for her daughter from the neighbour at 7 am.

Credit is used by many eaters in Dar es Salaam, even the relatively wealthy, to secure food when cash is in short supply and sometimes just for convenience. As well as the willingness of *dukas* to sell on credit to clients they know, as mentioned in various parts of this thesis, street food vendors often supply on credit as well. People who get a monthly salary frequently run a tab with a particular street food vendor eating their breakfast or lunch there and paying at the end of the month. Traders do the same thing, paying the street food vendor once they have sold their stock.

Sharing food and the shared use of cooking and storage equipment plays a very important role in people accessing food, especially when economic circumstances are tough. Children are particular beneficiaries of a common practice of eating together and sharing food with friends and relatives who are around. Among people with very low levels of capital, the sharing of cooking equipment helps for those who cannot afford it and/or have no space to store and keep such equipment. For example, Jamil not only shares food with the group of young men on the street corner, he also shares one battered pot with them. Cooking equipment is also shared among people who are tenants in different rooms of the same house and sometimes with neighbours as well. Often a number of women will use one stove and sometimes also the same coals as one passes the stove to the other with coals still burning. Such support and sharing is often through family networks, but goes beyond that to include friend networks and sharing with neighbours. Nevertheless, one can see with the example of Magdalene, when compared with Mama Lina and those in her family, that a lack of family is a challenge and the sharing with friends has to be handled with caution. Sharing always has to be managed with some sensitivity as it is often based on expectations of reciprocity and hospitality can be abused to the point where the sharing opportunity is taken away.

The *duka* and street food trader can also be seen as providing a shared use of equipment in that the fridge at the *duka*, given the accessibility mentioned above, serves as a fridge for the houses around it. And the pot for rice and the chapati cooking skillet of *mamantilie* serves those nearby who come to eat what is cooked. This is obviously done for a small profit, but nevertheless part of the service they provide is the benefit from the use of equipment that many of their customers do not have. Having a fridge of one's own becomes less important when there is a shop a few minutes away where you can buy fresh milk or cold sodas from morning until late at night. In addition, it is common for a *duka* owner, or indeed a neighbour with a fridge, to let people put their own things in the fridge to keep them cool.

An overarching need is for an income in order to be able to buy the food. As a number of the cases elaborated above show, the challenge of acquiring food is primarily related to people not having an income. For example, Magdalene losing her job, Sharifa's father being in a business that is declining and no one in Husna's family having a reliable income. The food system cannot provide incomes for all urban residents, but the current system does provide quite a few opportunities. There are many business and job opportunities in the sector. Among the eaters that have been focussed on, I by chance found that quite a few are also involved in the food sector to some degree. Mama Lina buys a lot of the food she cooks and eats from the proceeds of selling charcoal that is used for cooking. Ashura gets food for herself and her family from cooking and selling fish. During the course of the research Tabu started to earn an income by selling vegetables. Different food systems could create more or less income earning opportunities and therefore contribute more or less to addressing people's right to food. What is clear is that a food system that reduces the income earning opportunities within it, even if it was capable of producing and distributing more food, would lead to more hunger.

**Table 2 - Key factors affecting access to food for typical urban residents.**

<ul style="list-style-type: none"> <li>• <b>Low prices.</b> These are important, especially when combined with other factors like the flexibility of quantities and proximity.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Flexibility of quantities available.</b> For example, being able to buy the exact amount of <i>sembe</i> or specific number of eggs or weight of rice that you can afford at the time. And still paying a low price, even when the quantity is small.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Proximity to place of residence.</b> This removes transport costs and makes the purchasing of small quantities more feasible. A related important benefit is that the requirement for food storage space at home is removed.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Long opening hours of shops.</b> This makes food accessible at the times when money is available and when the food is needed. This fits with the erratic incomes many people have and the lack of storage space.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Availability of credit when needed.</b> This plays an essential role for people struggling to get food while waiting for incomes and sometimes it is just convenient as the person cooking may not be the one having the money.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Sharing of food and related equipment.</b> This happens through family and friends networks and local enterprises (e.g. the <i>duka</i> with a fridge) enabling people, especially children, without access to food to access at least some food and giving people without access to capital some of the benefit of equipment such as stoves and fridges. Charity, in the absence of social safety nets, also plays a key role.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Having a source of income.</b> Without income, it is hard to buy food, even if food is reasonably priced. The food system is an important source of jobs and income earning opportunities. It cannot be the only source of jobs and income, but a food system that delivers food, but does so with less income earning options, will leave more people hungry.</li> </ul>

Charity is another way that a large number of eaters access food, as illustrated by the case of Sharifa who asks for money from neighbours and also receives peanuts and fruit from local traders. Tabu also accesses charity from a range of different people and institutions as well as benefitting from her house mates sharing food with her. Borrowing money in hard times is also common and overlaps with charity in that the loans are often not paid back. Charity and networks through which sharing and support are obtained play a more important role in Dar es Salaam than they might in a situation where there is some form of state provided social safety net.

In addition to these factors related to food accessibility, the notion of familiarity is also a strong influencer in decision making about where to source food. This familiarity overlaps with other factors such as proximity as in the case of the *duka*. The relationship of the *duka* owner and the eaters who get food from them is one imbued with a high level of familiarity that brings practical as well as social benefits. In the people's markets the choice of which trader to buy from is heavily influenced by familiarity. Eaters frequently return to the same vendors and in doing so develop a familiarity that transcends the original reasons for going to them. Magdalene goes to a street food vendor where there is an ethnic connection and then a developing familiarity even though on the surface the decision is based on being able to buy a particular type of food. A loyalty develops that can survive some disappointments with the product, but can also be undermined if the food supplied consistently does not maintain the expected style and quality.

#### **4.5.2. Gender**

There are strong gendered dimensions to the roles different people play, which can clearly be found in the vignettes of eaters shared above. It would, therefore, be remiss not to note some of the gender issues, at the same time the topic is one deserving of further more in depth study and analysis than this research has been able to do.

For most of the eaters it is women who are doing the cooking. An exception is the young men in the street who share cooking among themselves. Many of the street food vendors, *mamantilie*, are women who are turning this common women's role into an income earning opportunity. Almost all chip sellers with a fixed chip cooking place are men. Women cooking chips are doing so with no fixed place of business and in smaller pans on the side of the roads and by schools.

Men are often the source of income for food, which gives those men certain power, but also puts them under enormous pressure when they are struggling to get an income. For example, Husna's brother with no clear source of income has to face his mother, sister and niece all waiting for him to deliver food or money when he gets home. This pressure is, of course, also faced by many women who have to find the income to secure food and have to prepare it and face their children as well. Even in situations where there are men earning an

income and claiming to provide for their families, many women still find they have to contribute to income generation in order to secure food for the family. For example, it is Sharifa and her mother who knock on neighbour's doors asking for money when Sharifa's father is not back from work or comes home empty handed. Another example is Mama Lina selling charcoal and using the income to try and ensure enough food is cooked every day for the relatives and others who join them to eat. She also has to make sure the quality of the food meets her husband's expectation when guests come over. Men more frequently eat out and buy the more luxurious foods, such as meat and fish, while women try to ensure that at least the staple foods and basics, like beans and green vegetables, are available.

#### **4.5.3. Tenure security and physical space**

The lack of physical space and overcrowding, along with a lack of furniture and equipment, like cupboards and fridges, limits the storage possibility for many eaters. Insecure tenure is a feature of many people's lives, from people being evicted from their rooms to uncertainties around ownership. This increases the risks of buying food in bulk and even investing in cooking or storage equipment. Tenure insecurity has also affected people's ability to earn money and the need to pay months of rent in advance makes securing a room difficult even for those who are working. These factors directly shape buying needs, increasing the value of having flexible quantities of food available nearby and at odd hours and making affordable ready to eat food, largely supplied by street food vendors, very important.



## Chapter Five – Trading Places

### 5.1. Introduction

This chapter describes some of the important trading places in the food system; the essential places where people who are selling food and those buying meet and exchange. These are, however, far more than places of exchange of goods and money. There is much more going on that enables and shapes the transactions. There are other impacts, positive and negative, of the activities in these trading places that are a central part of and produced by the food system.

The focus here is on the trading places where the eaters, discussed in the previous chapter, acquire much of their food. The nature and location of these trading places is important in creating the level of accessibility of food in the city. Some attention is given to trading places in other parts of the food system, such as the wholesale market places for meat, rice and maize.

The trading places, in particular the markets, reveal a lot about the nature of the food system and the relations involved in it, thus forming an important part of the findings especially in relation to explaining the symbiotic food system. Certain common characteristics can be seen across different trading places within the food system. The meat supply to Dar es Salaam is not a large focus of this thesis and the research that went into it, but the meat trading and slaughtering operations are described in this chapter as they provide strong illustrations of the nature of the symbiotic food system delivering at scale through the united, but not centrally managed, actions of multitudes of small scale actors.

Despite not being primary sources of food for most eaters in Dar es Salaam, the supermarkets and Kentucky Fried Chicken are included to give some perspective on these examples of the incursion of ‘modern’ food retailing that are part of the agro-industrial and corporate food system. As counter-examples with a very different mode of ordering, they also provide a useful perspective in terms of how they differ from the symbiotic food system.

### 5.2. Dukas

#### 5.2.1. Mangi’s Duka

Three houses from the western end of the street where I lived for years is Mangi’s Duka. Mangi is the Chagga<sup>12</sup> word for chief, and is widely used to refer to shopkeepers who are often thought to be ethnically Chagga. Mangi is in this case Chagga, as are many other *duka* owners in Dar es Salaam. The term Mangi is used in this thesis to refer to the particular *duka* owners – actually identical twins - in my street, and Mangi’s Duka refers to their *duka*/shop.

---

<sup>12</sup> The Chagga are an ethnic group from around the Kilimanjaro area and are renowned as traders in Tanzania.

The twin brothers are from near Moshi in Kilimanjaro Region. They came to Dar es Salaam as young men, first working in another person's *duka*. They still have two hectares of family land in the village they are from. One or other of them go home at least once a year for a few weeks to, among other things, check on the planting and harvesting of maize on their land.

Mangi's Duka is typical of thousands of other small general dealer stores throughout Dar es Salaam. Open from around 7 am to about 10 pm every day, the structure of Mangi's Duka was wood with a zinc roof positioned in the shade of a tree in the front yard of a house (Photograph 3). Just at the end of my field research Mangi's Duka was rebuilt with bricks and cement still about the same size, but with a small store room on one side of it. People buy over a counter that opens onto the street. Mangi sells a wide range of items including foods like maize flour, rice, beans, cooking oil, eggs, bread and tinned foods, as well as general goods such as brooms, flip flops, school exercise books, soap, perfume, baby nappies, pens and snack foods and sodas (e.g., Coca Cola and Pepsi). I was pleasantly surprised to find olive oil and olives there as well.

Regular customers at Mangi's Duka can and do get food on credit. This is always interest free and the time period for repayment varies but seldom extends beyond month-end. Often a person may take items one day and pay the next, some pay weekly. Many times, the woman who worked in my house, cleaning and assisting with my children, went to the shop to get an item she needed for the house and I paid Mangi when I got home in the evening from work. The amounts I got on credit were never written down, it was always short-term and the amounts remembered by myself and Mangi. Mangi did keep a book to record the amounts borrowed by clients who took on credit often and didn't pay the same day. Some of the clients kept their own book which Mangi wrote in for them.

The area of road in front of Mangi's Duka is a space where people meet and share news and ideas (Photograph 3). I often met my neighbours there. This is a social space that this form of retailing of food and other items creates. Even if a customer talks to no one else, they have to speak to Mangi to ask for what they need and it is common for people who are not buying at the time to also stop and chat. Mangi is known to people in the street and he knows them. He is there every day from morning until evening. When the daughter of a family who live in the street got married I attended the wedding and found Mangi there among the other guests. Mangi chats to the customers, when in a good mood makes jokes. There are a range of discussions that go on around the shop with Mangi more or less involved. These discussions touch on topics like politics, relationships, including at times I have been there issues of gender violence and faithfulness in marriage. Topics on the news, like bad road accidents or the latest corruption scandal get discussed at the *duka*. When a big football game is on Mangi and a small group of people listen on the radio or watch on a television that he has under the counter of the *duka*. Children often play outside the shop and children as young as five or six come to the *duka* on their own. In the evening, young men from the street are often to be found standing or sitting around the *duka* drinking soda and talking. I have seen people leave their luggage, keys for their houses and messages for neighbours at

Mangi's Duka and I have done the same. An old man with no work or other income, Mzee Steven, often sat next to the Duka. It was where he chatted to people, drank coffee bought for TSh 100 (\$ 0.06) per cup from passing coffee sellers and received the small gifts that he lived on. It was from Mangi that I heard Mzee Steven had passed away. Now and again there are people who come by asking the *duka* owners for a bit of food or money to assist them. Mangi normally gives something, a bit of maize or rice and sometimes a little cash.



**Photograph 3 - Mangi's Duka in the street.**

The Mangi twins started their *duka* early in 2005, it is their first. They chose the place as they thought the area lacked shops or *dukas* close by and there was a space in front of the house where they could put it. Mangi's Duka is the only shop in the street, but there are five other *dukas* within a few minutes' walk all selling a similar range of products including food. As it is not in a main road they thought they will not be bothered as much by the government. When asked where they got the money to start, the one twin said "I worked in a shop that belonged to a friend. I started in 1998". The friend was from the same area the twins are from near Moshi. The other twin was still finishing school at the time. When he finished schooling he came to work in the shop while the first twin went back "home" to finish school, up to form four. They told me "we saved separately, when we had enough we combined our money to start this shop".

There can be up to 60 customers an hour coming to Mangi's Duka at the busiest times, which are mornings before 9 am and early evenings around dinner time. About 90% of the customers are on foot with a few on bicycles or in cars that stop when passing the shop on

the way somewhere else. It is common for the same customers to return to the shop several times during the day, many of them living very nearby, and buying items as and when needed.

The twins take it in turns working at the *duka*, swopping every two or three days. While one is keeping shop the other rests or does tasks such as buying stock. They share one motorbike that is used to collect items that they buy from wholesale shops and markets. Other items such as milk, bread, eggs, and soft drinks are delivered by the suppliers. The deliveries are made by bicycles, motorbikes and small vans. There are salespeople who come past the *duka* now and again trying to interest Mangi in new products.

Mangi sells freshly cooked *maandazi*, *vitumbua* and chapattis cooked by women in neighbouring houses. One can buy directly from these women at their houses in the morning when they are cooking, but then when finished cooking they give the remaining stock to Mangi to sell for them while they do other activities. They collect the money from him later in the day. Mangi makes no mark-up on these items, giving all the money collected to the women who cook. The arrangement is that the women buy all their ingredients, flour and oil, from him and he does the selling as he is there at the shop anyway. These items may also help the *duka* by bringing customers many of whom buy these snacks, especially in the morning.

There is an interesting form of reusing of the packaging from the *duka*. A man comes around now and again carrying large sacks and stopping at Mangi's and other *dukas*. He collects and pays the *dukas* for all the sacks that have been used for items such as beans, rice, maize and sugar and also buckets used for things like cooking oil. I asked what he did with them and he explained that he collects them and then takes them to rural areas where he sells them. There is a cycle here of sacks that different foods have been sold from going back to the rural areas for harvests to be packed in again and brought back to the city.

Mangi pays tax on his profit and showed me letters and receipts to prove it. He is taxed under the presumptive regime based on an estimation of the sales and the profits declared by the shop owner and adjusted by the tax officials in part based on their observations. Mangi explained that "they used to send tax officers to look at the business for hours. Then they estimate the amount of business". Mangi acknowledged that *duka* owners try to give a low estimation of their income to reduce the tax. During the research period the government started to require shops to have a tax receipt machines supplied by and linked to the Tanzania Revenue Authority (TRA). There was strong resistance to this, not just to try and avoid paying the full tax amount, but because the TRA wanted the shops to buy the machine for TSh 750,000 (\$ 455) each. A lot of money for the scale of business Mangi was doing. As the TRA tried rolling this out shopkeepers in parts of Dar es Salaam went on strike, shutting their shops on days when the TRA officials tried to check if they had the receipt machines. Mangi and other *dukas* in the surrounding areas also closed a few times when inspectors came to the area. *Duka* owners phoned to warn each other if TRA officials were spotted

coming into the area. The *duka* owners would simply lock up their shops and then reopen when the officials left the area. At the end of my field research none of the *dukas* in the area had the tax receipt machines.

### 5.2.2. Other dukas

Other *dukas* operate in a similar way to Mangi's Duka with some variations. Here is a brief glimpse of others in the area highlighting a few differences.

The *duka* around the next corner to the south of Mangi's Duka sells very similar items at similar (normally the same) prices. There are, however two significant differences. One is that the shop sells alcoholic drinks. This creates a different street scene around the shop with customers sitting outside on a low wall or on benches and chairs supplied by the shop while they are drinking. Secondly the owner of the *duka* employs a shopkeeper and during the field research period he started a second *duka* less than a kilometre away also employing another shopkeeper. The owner's wife often assists in the *dukas* as well, covering for the shopkeepers when they are off work or away. The owner does the buying and arranging of supplies to the *dukas*. He started with a motorbike and during the time of my field research, awhile after starting the second *duka*, he bought a car that he uses for the collection of stock. The shopkeeper that was employed in the first *duka* when I started my field research left to start his own while my research was still underway. He was not far away and would come to visit the old *duka* and his former employer at times.

The next *duka* along is owned and run by two men in partnership, one who spends more time in the shop and the other who has another job as well and a car and does the buying and collecting of stock.

The *duka* just around the corner from Mangi's to the north is run by a woman shopkeeper employed by the *duka* owner. The shopkeeper had her baby son with her every day when he was young. He played, ate and slept in the *duka*. It is similar to Mangi's Duka, but not as well stocked or as busy, although it still has a loyal customer base of those living nearer to it.

A *duka* in the next street parallel to the street with Mangi's Duka was owned and run by a woman who took over from her husband when he passed away. The other difference with that *duka* was that she sold kanga and kitenge fabrics as well as the other typical items found in most *dukas*.

The regular charitable contributions to people in poverty that Mangi makes happen at the other *dukas* as well. Another way they support people in poverty in the area is to give them money for basic tasks like sweeping the street in front of the shops and helping to unload stock when it arrives.

Despite the great deal of similarity in the type of items sold and the prices at the *dukas*, they had a variety of different suppliers. There are many brands of *sembe*, as will be discussed further in Chapter Six, and different sources of supply for these *sembe* brands. For example, even when I found two *dukas* in the same area selling the same brand of *sembe* I found they

were buying from different wholesalers, while a third not far away was buying directly from the millers. Another example is that although Mangi and the other *dukas* in the area all sold similar eggs delivered by bicycle, they had different bicycles delivering people supplying them. This variety of suppliers, and the choice that gives the buyers, is an intrinsic part of the food system that is made up of multitudes of different actors and it is a key factor in the sustainability and maintaining the competitiveness of the system.

The *dukas* are competitive and add value to communities due to their close proximity to the customers they serve. The scale issue is very important for that; larger shops need a larger customer base and therefore will need to draw customers from further away, the supermarket being the extreme example with its requirement that customers have transport to reach it. The range of suppliers able to deliver and sell to the *duka* in quantities that work for them is essential as well. The wholesalers the *dukas* buy from are themselves family run businesses that are not large and the wholesale people's markets with many small traders are also an essential part of this supply mechanism.

### 5.3. People's markets<sup>13</sup>

#### 5.3.1. Mikoroshoni: local people's retail market

I walked with Josephine and her five-year-old daughter to the Mikoroshoni Market. On the main route to the market, still only a dirt track little more than the width of a car, Josephine stopped at Nassor's grain shop (see section 5.4.2.). She picked up some whole maize kernels in one of the open sacks, looked at it and ran it through her fingers. She asked if it was old or new and Nassor said "it is old" (not necessarily a bad thing, she wants it dry for milling). He also said he gets the maize in Tandale Market and it is from Mbeya Region. Josephine bought two kilos of the maize and will mill it another day at one of the machines in the area in order to get the *dona* (whole meal maize flour) she wants.

As we walk further up the road she stops at other similar grain shops to look at the maize. We pass some grain shops where the owners have closed their doors while they go to the mosque, the sacks are still standing outside the shops, neighbouring shop keepers ensure they are not tampered with.

When we walk into the main Mikoroshoni vegetable market, lined with stalls all under a common roof, a woman green vegetable trader calls out to Josephine and they greet with a warm hug and then chat asking after each others families. Josephine buys peas from another stall holder who is the husband of her friend (the green vegetable seller); he prepares the peas while the two women are talking. The friend has run out of the cassava leaves Josephine wants, so she refers her to another stall holder close by. With the cassava leaves

---

<sup>13</sup> Parts of these sections were previously published in Wegerif MCA and Hebinck P. (2016) The Symbiotic Food System: An 'Alternative' Agri-Food System Already Working at Scale. *Agriculture 6*: 40.

and peas secured, Josephine says good bye to her friend and the husband and we leave the market.

On another visit to Mikoroshoni with Josephine, we stop in the street near to the market to buy coconuts from a woman selling them from a small stall in the doorway of a house. Josephine and the woman greet each other using terms of affection, such as *Shemeje* (literally sister in law, although they are not actually related in that way) and they chatted. This is where Josephine always gets coconuts. As they talked the woman worked all the time, cracking open coconuts before handing them to customers and taking the money. By cracking them open she is making sure they are good inside before the buyer leaves. As we parted the coconut seller said goodbye and welcomed us to come back again, not in the polished way some shop assistants are trained to, but in the tone of a friend saying please visit again.

As we walked I asked Josephine why she comes to the market, she said she likes it, gets lower prices and gets to know people. She gave the example of the couple, mentioned above, who sell peas and green vegetables, she met them at the market and now considers them friends.

The Mikoroshoni Market is situated in the middle of a densely-populated *uswahilini* (informal settlement) area. The location of the market makes it accessible to the many people living in the surrounding areas who, like Josephine even when with her daughter, can walk to the market and often walk past the market on the way to and from places of work or trade. The market is also fairly close, within a few minutes' drive, of some wealthy suburbs; however, the roads to get to it are narrow and in poor condition.

The Mikoroshoni Market started operating in 1978 as an initiative of 50 traders. They asked for land from a farmer and cleared the land to build the market. They pooled their money, collected different building materials and worked together to build the first structures. Now, they are one of 24 markets registered with the Kinondoni Municipality who record the market as having 90 members out of a total of 4,900 members across all of the registered markets. This includes the shopkeepers and the market stall holders, but not the other family members, workers and casual labourers who assist. The current main structure was built in 2003 (Photograph 4). The only help from the government was the provision of 700 sheets of zinc out of a total of 1,600 used for the rooves of the market. The rest of the materials and labour were arranged by the market members.

The different products being sold at the market are fresh fish, dried fish, *dagaa*, fruit, vegetables, beef, goats, live chickens, slaughtered chickens, live local chickens, cooked food and household goods, like cooking equipment. The market is deliberately arranged with different areas for the different types of products being sold. At the back of the main market area are several dozen demarcated spaces, with rough benches and tables, where women cook and serve food; many of their customers are others working in and around the market.

On one side of the main market building are two rows of small butchers' shops, each a few metres wide with large chopping boards and meat hanging on hooks in the windows. On the other side of the butchers is another roof with an open space under it and tables where in one section there are chickens and in another section fish. At the back of the rooved area is a space where the slaughtering is done, and a wood fire is always burning to heat a drum of water used for the removal of feathers and the cleaning of the chickens.

There are a range of suppliers and service providers, some of these fellow members of the market, others from outside, who serve the traders in the market in ways that respond well to their particular circumstances. There are: the women who serve fresh milk, tea and food to their fellow traders; sellers of soaps and other household products; the cargo porters who carry and deliver the stock; etc. All of these provide services on credit and normally receive payment later the same day. In this they follow the cycle of the market and accommodate the low level of capital available to most of the traders. A woman selling vegetables puts all of the money she has into stock in the morning, but she still has the stock carried by cargo porters and has breakfast and lunch; she pays in the afternoon, after she has sold her stock.



**Photograph 4 - The author in the main building at Mikoroshoni Market.**

To join the market, a trader applies to the elected committee and, if accepted, pays a joining fee of TSh 50,000 (\$ 30). This is seen as making their contribution to the construction of the building, for which the original market members paid. There is a daily fee of TSh 100 (\$ 0.06) for the market and a tax of TSh100 (\$0.06) for the Kinondoni Municipality. These amounts are TSh 200 (\$ 0.12) each for the shops and the butchers pay TSh 100 (\$ 0.06) to the market and TSh 200 (\$ 0.12) to the municipality. When someone is given a place to trade they are shown a table in the appropriate section of the market for their product. They need to build

their own structure from which to sell. Another way that people get to join is by being given or buying a table from someone who is leaving the market. They still need to register with and pay the market, but the space is secured.

The only service the municipality provides is bulk rubbish collection once every two weeks, the rest, including the collection of taxes daily from the traders, is arranged by the market.

There is a 12-person market committee elected every three years at a general meeting open to all members of the market. There is a non-elective general meeting of all market members every six months. The Kinondoni Municipality sends a person to preside over and act as the electoral officer during the elective general meetings of members.

Besides the formal organisational structure of the market, there are a myriad of other forms of collaboration going on. When there is a funeral for a relative of a trader the others contribute to the costs. Contributions are also made for other important life events, like weddings and when a market member needs help with a serious medical condition. There is a common approach between traders of the same foods. They sit together in areas for each food type (i.e., vegetable sellers together, meat sellers together), and they tend to all sell for the same prices with no easily discernible efforts to distinguish their goods from the others. They all arrange their stock in a similar way, wash and sprinkle the vegetables with water, so they look fresh, stack the nice tomatoes to be seen, etc. They are all doing pretty much the same things and none are advertising. There are no signs offering special prices or claiming particular qualities for their goods. The traders chat to their neighbours, share jokes and help each other in many small ways. This does not mean there are no arguments or tensions between traders, but the overwhelming norm is one of cooperation although each has their own distinct business.

In the market place, when a trader is not present, the neighbouring traders watch their stock and will sell to customers, taking the money and giving it to the trader whose stock was sold when they return. As they sit together, this is most often being done by traders who sell the same stock, for example green vegetables. When one does not have stock, they pass their customers, as happened to Josephine, to another neighbouring stall holder. The customer gains from this through having greater certainty they will find what they want. Quite a few of the traders bring their children to the market with them and one can observe traders assisting with each other's children, especially if the mother (it is more often the mother than the father) is busy or has to go somewhere.

The most numerous of the traders are selling fresh vegetables and fruit. The green vegetables being sold include *mchicha*, spinach, cassava leaves, pumpkin leaves, sweet potato leaves and mnavu (black nightshade). These crops form an essential part of the diet of millions of the residents in Dar es Salaam and are the mainstay of urban horticulture in the city. Flood valleys alongside rivers, larger peri-urban plots and any empty bits of ground not built on around the city are frequently found with small fields of *mchicha* (see more on this in Chapter Seven).

All of the traders at Mikoroshoni are collaborating in some way in the procurement and fetching of stock. This mostly happens in different groups. For example, a group of 16 (14 women and two men) who live in the same area have a minibus that picks them up at 3 am every morning to go to the Ilala market to buy stock. A slightly different group, including most of those 16, but also others, comes back together in a specially-arranged *daladala* (medium size bus used for public transport) arriving at Mikoroshoni a little after 6 am. The traders alight on the main road and there are always young men there waiting with push carts to carry the stock to the market itself. These young men (cargo porters) carry for all of the traders, loading stock for different people and then being paid later in the afternoon. Other groups of traders share different transport to the market. Some combine to hire motorised *gotas* (three-wheeled vehicles used for transporting goods) together; others hire small pick-up trucks. Some of these arrangements are more fixed, like the same mini-bus picking up people at 3 am, a time of day when there is not much public transport around. Some arrangements are constantly shifting, such as the joint hiring of the *gotas* that are always available outside the Ilala market. These are all arrangements between people who know and work alongside each other every day. They all know the norms and expectations. None of these arrangements are written down or contracted.

We can see from the experience with Josephine how being familiar with the food sellers is a big part of the purchasing process and decisions. There is a social interaction that goes beyond the exchange of the money and food items. Price, however, remains a factor. She is conscious that she gets lower prices at the markets and as a single mother on a low income that is important to Josephine. She, like other eaters, is also very in touch with the food. She feels the maize, she will get it ground herself in the way she wants. She sees and feels the coconut and is there when it is broken open in front of her. Josephine does not rely on packaging in order to make decisions about the food, she engages with the food directly and if she wants to know more she talks to the seller, who she normally knows and has a level of trust in. When her friend did not have what she wanted, Josephine did not simply go to any other stall holder, she was referred to one by her friend. She is relying on the judgement of the friend who is passing on some of the trust and also strengthening her own mutually supportive relationship with that fellow stall holder. The shop owners, as with the grain shops, look after each others stocks, and the stall holders who collaborate in the market place are in symbiotic interdependent relationships. Symbiotic more than collaborative, because so much of the way they assist each other is not structured, discussed or explicitly agreed, it is how they do things and it works for the different parties involved.

### **5.3.2. Kibaiywa: regional grains market**

Arriving in Kibaiywa and stepping off the bus I am struck by the amount of activity going on. This village on the road to Dodoma has become a busy town. I walk to a guest house that has been recommended to me by a maize trader in Dar es Salaam. It is a smart and clean place owned by a local businessman. The rooms with their own bathrooms are taken, but I get the one room left which has use of shared toilet facilities. That evening I go out to eat

and find there are a range of bars and eating places to choose from. I end up in one where the owner and other customers are friendly and I end up drinking with a small group of Kenyan's who are in town to buy maize.

The following morning I walked to the Kibaigwa grain market, getting there just before the gates open at 6 am. Grains, especially maize, trading in the village of Kibaigwa grew rapidly in the 1990s as *wakulima* and small traders in the area brought maize to the tar road running through the village from Dodoma to Dar es Salaam. This was a logical point to meet up with traders from Dar es Salaam. A group of cargo porters (the men who carry the sacks of grain and load and unload the trucks) organised themselves to do unloading and loading of maize and provide security for the maize left in the trading area alongside the road. This attracted more traders who knew they could get stock loaded and also safely leave what was not sold there overnight and for longer.

Unfortunately, with increasingly large numbers of people trading and trucks dropping and collecting maize alongside the road, a main transport route, there was more congestion and many accidents, including fatal accidents especially involving pedestrians. An active District Commissioner started looking for solutions and worked with MVIWATA (Mtandao wa Vikundi vya *wakulima* Tanzania-National Network of Farmers' Groups in Tanzania) to develop a plan for a more appropriate market place for the active grain trade that was already going on. A site a few 100 metres from the main road was identified and cleared and prepared for the market. The main infrastructure put in place was the paving of roads around the market and linking the market with the main road, a truck weighbridge, large maize cleaning machines (little used now), storage space and office space. The funding was from the French Government with other smaller contributors from donors such as the Irish Government. The market started functioning from 2004 with the official opening in July 2005. The main produce going through the market is maize, but they also handle sunflower seeds, beans, pigeon peas, sorghum, millet and peanuts.

There are many different actors in and around the market. There are dozens of traders and agents working there. There are food sellers, women picking maize fallen from trucks to take home for their children, sellers of plastic bags, a stall selling cell-phones and airtime, different groups of casual labourers packing sacks, cleaning maize and unloading trucks. Some people specialize in tying the loads and the tarpaulins onto the trucks. There are the management and 20 staff employed by the market, which include accountants, people gathering statistics and the operators of the gates, the small scales and the weigh-bridge.

Early one morning, not long after arriving, I sat with Yusuf on a bench at the Kibaigwa market drinking my breakfast of *uji* (gruel/soft porridge). Rosy who sat near us with her flasks, has cooked and sold *uji* at the market for some years. I had the one made with rice flour and Yusuf had the equally delicious *uji* made from millet. Yusuf had holes in his oversize running shoes and wore a dirty shirt and ragged jacket, he clearly had not washed or changed that morning. He smelt of alcohol and his eyes were deeply bloodshot, not the

bloodshot you get from a night of drinking, but rather from years of abuse. As we talked the impression I got of Yusuf quickly changed from the image I had when I first saw him. "The benefit of being a cargo porter" Yusuf told me "is help with health care for my family, my children, my mother and father, my wife, together with transport, they cover everything". This is all arranged by the 200-strong cargo porter association that he is a member of. Yasin came from Kilombero Region and started working as a cargo porter in Kibaigwa in 1996 when the market was still by the road side. He has four children and explained to me how the association will also assist with the costs of high-school education for any of his children who qualify to go there after primary school. This year, Yusuf got four sacks of maize from the association during the slow season. They buy when the maize prices are lower and the market busy and then give to members when there is less work and so less income. Yusuf's wife also earns some money buying maize in the nearby villages and selling it at the market. Yusuf tells me that he would like to see the market building more warehouses so the association could buy, store and trade maize. He says this will benefit more people compared to when private people are building warehouses around the village outside the market.

The cargo porters and their association, remain very important. In addition to the loading of trucks, they still arrange security, replace any stock lost and cover healthcare and some education costs for the members and their families. The loading of the trucks is done on a roster of 25 teams of eight cargo porters, one team allocated to each truck. Interestingly the cargo porters can and often do trade their places on the list. A common practice for a cargo porter who has other business activities is to give/rent their spot to someone else who does the loading and gives a proportion to the cargo porter whose space they filled.

Involved with many of the transactions are the *dalalis*. These differ from the traders in that they are not buying with their money; they are instead bringing buyers and sellers together and then getting a commission, paid by the seller, for setting up the deal. When farmers were asked why they do not go straight to the traders, they said they knew the *dalalis*, and they did not know or trust the buyers; they felt that they could be cheated by the buyers. Others involved agreed with this; the market manager said "the farmers are used to/familiar with the agents more than with the traders". Some of the farmers phoned *dalalis* they already knew before coming to the market and some found the *dalali* at the market. The traders also rely on the *dalalis* to find sellers; while Maureen (see Section 6.2.6) and her fellow traders sit on the bench, the *dalalis* are more often walking along the line of trucks and tractors checking the maize available and finding farmers who want to sell. The *dalalis* work all the time at the market and have time to get to know people; the traders on the other hand come only when they need to buy and they go to other markets as well.

Almost all of the people working in the market work for themselves, apart from the staff employed by the market itself. The cargo porters cooperate in an association, but each one is independent; they work for themselves using their asset of association membership to assist with their livelihoods that often involve other activities, as well. For example, many of cargo

porters farm and some also trade in maize and other items. Most of the traders have an assistant; these assistants are not exclusively tied to work with that trader and invariably aspire to be traders themselves. The traders spoken to say they were training their assistants, showing them how the business works; they are conscious and supportive of the assistant getting into business themselves. Many of the traders started out as traders' assistants themselves.

There are many other informal associations and collaborations, including the groups of traders who tend to stay together, the labouring groups who unload the trucks coming in and the ones who fill sacks and sew them closed. There are also more formalized organisations including: the Cargo Porters' Association; the *Dalali* Association; the Traders' Association and the Women Sweepers Association (they sweep up the loose maize during loading and unloading) and the market itself with a Board of Directors and staff.

The Board of the market is made up of three representatives identified by the national farmers' union, MVIWATA (Mtandao wa Vikundi vya *wakulima* Tanzania-National Network of Farmers' Groups in Tanzania), and two from the Kongwa District Municipality. The three from the farmers' union are made up of a farmer representative, a trader representative and a representative of the cargo porters. There have been tensions between the Board and the management of the market and complaints from various quarters, including criticisms that the District takes too much tax and provides few if any services, as well as that the farmer representative is not interested in the small *wakulima* and is not from the area.

The largest amount of maize supplied to Kibaigwa Market came from Kongwa District, which the market is located in. This is followed by the neighbouring Kiteto District with the third largest source of maize, Gairo District, supplying substantially less. Kongwa and Kiteto combined accounted for over 75% of all maize supplied to the market in the 2014/15 year. This is partly an indication of where a lot of maize is grown, but it is also about the areas better served by the market in Kibaigwa. There are substantial sales directly to Dar es Salaam from some districts in the area, for example, from Gairo, as explained in the case of Kitaita in Chapter Six.

**Table 3 - Top three sources of and destinations for maize to and from Kibaigwa Market 2014/15 year.**

Source district	Maize in Tons	Destination region/country	Maize in Tons
Kongwa	42,898	Dar es Salaam	54,881
Kiteto	28,962	Kenya	11,763
Gairo	3,535	Pwani	4,582
<b>Total</b>	<b>90,220</b>	<b>Total</b>	<b>93,691</b>

Dar es Salaam is by far the largest single destination for the maize leaving Kibaigwa Market accounting for close to 60% of all maize in the 2014/15 year (Table 3). Interestingly the second largest destination is Kenya, with Pwani region being the substantially smaller third largest destination. Pwani is the region that surrounds the city Dar es Salaam so it is also likely that some of that maize ends up in Dar es Salaam.

The total value of maize leaving the market in 2014 was approximately TSh 31,921.6 million (\$ 19,346,424), this based on the 89,920 tons that left the market and the average price of maize over the year. The value of maize was even higher for the previous three years. On my last visit to Kibaigwa in July 2015 it looked like the maize harvests and trade through Kibaigwa would be low. The price was rising and at TSh 525 per kilo at that time.

**Table 4 - Key statistics from Kibaigwa Market**

Years	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Maize coming into market (tons)	60,904	50,959	90,134	83,514	58,062	71,739	116,095	96,587	65,867	84,071
Maize leaving market (tons)	58,606	47,398	93,068	94,518	64,294	75,773	129,953	102,863	67,921	89,920
Annual average maize prices (TSh per Kg)	150	208	135	278	353	294	358	503	556	355
Low - High maize price (TSh per Kg) and months they occurred	129-243 Jan-Dec	110-308 Dec-Apr	107-164 Jun-Dec	230-343 Jul-Jan	299-450 Jul-Dec	210-450 May-Feb	344-389 Mar-Jun	360-750 Jan-Nov	421-756 May-Jan	270-485 Sep-Jan
Tax payments to Kongwa District (TSh 1,000)	27,880	7,500	24,300	84,407	78,195	1287,668	269,144	429,351	314,404	382,680

It is interesting that from 2007 onwards there is more maize recorded as leaving the market than arriving in the market. The larger amount coming into the market than leaving in 2005 and 2006 could be due to maize being put into the newly built warehouses. The main reason I can see for more recorded as going out thereafter is that the statistics are based on what is weighed on the weighbridge, which does not include all the very small amounts brought on foot and on bicycles. Yet, quite a lot of those small amounts end up getting aggregated together, packed in sacks and made part of loads going out on the big trucks which are weighed and so appear in the statistics.

The tax collected at the market is a substantial source of revenue for the Kongwa District Municipality contributing over TSh 382.7 million (\$ 231,900) in 2014. This is a lot of money for a rural district municipality that is heavily dependent on tax paid from agricultural produce.

The market contributes substantially to the local economy, in addition to the tax it pays. Across the village, or now small town, of Kibaigwa there are businesses that serve the users of the market. There are guest houses used by traders and transporters, restaurants and bars, stationery shops and clothes shops that benefit from the flow of people and money going through the market.

What we can see at the Kibaigwa Market is how a wide range of different actors, including a range of different more and less structured associations, are together creating a vibrant economic and social hub of activity. This contributes to the local community and supplies maize and other grains to Dar es Salaam and elsewhere. There are no large, or even small, corporate entities and the relationships are not primarily structured around worker and employer/owner arrangements; rather they are structured around different forms of association between peers each with their own enterprises. The operations at the Kibaigwa market, crucial as they are for the supply of maize, do not resemble a value chain. There are constantly shifting arrangements between different interdependent actors. There are many actors who in various relations with other actors both benefit from and make the whole system work, but would not be included in any typical value chain analysis. For example, Rosy selling *uji* and the women who sweep up the maize would likely be missed.

More will be said in Chapter Six about the maize traders and transporters operating in and around Kibaigwa Market.

### **5.3.3. Ubaruku: regional rice market**

I have spent the day around the seven large milling operations on the edge of the village of Ubaruku in Mbarali District about 800 kms from Dar es Salaam. I watched the large machines husking and sorting rice, impressed by the great mounds of chaff piling up all the time behind the mills as the machines ground on. I ate lunch and chatted with some of the traders and *wakulima* at one of the eating places along the road next to the mills.

Now it is 8 pm and dark outside, I am sitting talking with Mposi in his small office at the mill he owns. The power has gone off so the mill has stopped running, but there are still some builders outside extending Mposi's warehouse. Mposi explains that the profit margins are so low that if he uses a generator to keep milling the diesel cost will mean he is running at a loss. He also commented that "I have to extend the warehouse or they [traders and *wakulima*] will go to another mill".

Mposi dropped out of high school due to a lack of money and then trained as a mechanic and farmed on some of his father's land in Mfinga Region, where he is from. He bought and fixed up an old tractor for his own farming and then came to Ubaruku in 1992 to provide

ploughing services, after seeing, while visiting a friend, that the rice farmers had limited access to machinery. For years, he drove the tractor himself, "I used to work 24 hours during the ploughing season" he said. Later, working with his brother, he added another tractor and started to grow rice as well. In 1999 he bought his first milling machine. Later he bought bigger machines and built his first warehouse in 2007. Now Mposi has two milling machines on the same site with the capacity to husk 30 tons of rice a day and his warehouses are full with approximately 2,300 tons of rice paddy belonging to many different *wakulima* and traders.

Mposi still grows rice, mostly on hired land, and carries on the business of hiring out farm machinery. As he put it, "up too now I am here and go forward with the small farmers and the traders, I plough and mill the rice for the small and big farmers". He sells his own rice paddy to the small traders, who use his machines. He knows he could make a bit more profit selling the husked rice directly, but says "you will lose time, so better to leave it to these small traders, while I continue with other things". Other things he wants to do include buying bigger machines, building a much bigger warehouse and opening a rice centre in Dar es Salaam. What is holding him back is that he has been unable to get a bank loan, "there is a big problem with the bank, if you are an investor like me it is difficult, they want a person who can pay every month" he complains.

After the interview, I go on my hired bicycle to one of the many bars in Ubaruku, get a drink and food and talk to more people who are all in some way linked to the rice industry.

Ubaruku is an important source of rice for Dar es Salaam. There is no structured market space, like at Kibaigwa, but the area around seven large rice milling operations, including Mposi's, serves the same purpose. This is where *wakulima* and local traders come to store and husk their rice paddy. It is also where the traders from Dar es Salaam come to buy rice. The local rice traders queue outside the rice mills waiting their turn to use the machines and they meet traders there and in the nearby eating places. The traders spend a lot of time together, share information and collaborate at times, such as when they join together to fill orders. The traders from Dar es Salaam often travel together and stay in the same guest houses.

There is a continuous bustle around the mills; it goes on all night if the electricity is working. There are always trucks organised by the transport *dalalis* arriving or waiting to collect their loads. These loads almost always made up of rice from a number of different traders. A tax collector sits under a tree keeping an eye on the comings and goings and collecting the tax that makes up a large part of the revenue for the Mbarali District Municipality. Teams of casual workers are kept busy around each mill unloading sacks of rice paddy and then loading sacks of husked rice onto other trucks.

There is no management of the space as a market, as there is in Kibaigwa, nor is there any common pool resource management system. There is, however, an enormous amount of collaboration in the common interest of the actors involved and the same functions that one

finds in Kibaigwa and other more structured markets are continuing in a similar manner. The elements of common pool resource management continue, but in a more organic, symbiotic, way. As with Kibaigwa, the rice trading activities around Ubaruku make a large contribution to the local economy.

Each mill at Ubaruku is owned by a separate business person employing their own team to run the mills and the warehouses that form an integral part of the operation. All the traders, food vendors, *dalalis* and others are independent operators. A government intervention motivated on health grounds, resulted in the mills being relocated from the centre of the village to one reasonably planned space outside the village. This has created space not just for the mills, but also for the trucks and other related businesses. The roads are gravel, but in reasonable condition which is important for the *semis* (trucks with trailers able to carry loads of 30-33 tons) coming to collect. The other infrastructure the government put in place was the three-phase electricity supply needed by the large husking and sorting machines. The transport *dalali* association is one of the important and more structured institutions, with their own office not far from the mills.

The functioning of the actual 'market', as a place for the exchange of goods and money, has developed around this core infrastructure with the mills at the centre. Traders and *wakulima* are naturally drawn to this place where the rice processing takes place and therefore where rice and rice buyers can be found. The mills have become more central, because the traders from Dar es Salaam buy the husked rice and the rice paddy sellers, whether local traders or *wakulima* (often they are both in one), only husk when they have a buyer. The rice paddy is thus taken to the mill by one owner and comes out as rice belonging to a new owner. Traders also meet at the guest houses and bars around Ubaruku, but the actual transfers of rice always involve the mills.

Just as the green vegetable sellers in Mikoroshoni assist each other, so the rice traders are constantly working together with at least a few other traders who they know. Like the relationship Josephine has with the traders she buys vegetables and coconuts from, the traders from Dar es Salaam are also familiar with the local traders and *wakulima* they buy rice from in Ubaruku.

At present the mill owners, even the large ones, like Mposi, are in an interdependent relationship with the small *wakulima* and the traders. Mposi needs the farmers and the traders both to keep his mills and farm machinery working and paid for and to buy his rice paddy. This could change, however, if he had a very large buyer that would buy his rice in bulk, or potentially if he could get that bank loan he could expand his own operations and bypass traders and sell straight to Dar es Salaam. The competition from the other millers and warehouse owners also encourages new investment and keen pricing for the essential services that Mposi and the other mill owners provide.

More is said about the rice traders and transporters in Chapter Six.

#### 5.3.4. Beef slaughtering and selling<sup>14</sup>

It was a Sunday afternoon and I was with Larry and Samuel who are meat traders and butchers sitting drinking beer and eating a grilled goat's leg. We were at the Pugu cattle market on the edge of Dar es Salaam to buy cattle. From our table in the shade, we could see groups of cattle and observe negotiations going on and the odd fight between bulls and arguments between traders.

Two days before, about 400 kms away, Ezekiel walked with his son, herding two of his 20 cows from his village of Kitaita to the larger village of Chakwale 15 kms away. Cattle, goats and some sheep were gathered in large numbers in the open ground in Chakwale, more often used for football, but every two weeks converted into a livestock market. Local *wakulima* and pastoralists brought their livestock to sell, and traders came, some from far afield, to buy. The gathering attracts more business with food, clothes and other items being sold. Ezekiel sold his two cows to a Masai trader. People often say the Masai do not sell cattle, but this Masai trader made his living from selling and buying cattle.

At the end of the day, the trader had his cattle herded to the town of Gairo, where, with the help of cattle pens and a loading ramp, the cattle were put on trucks, along with those belonging to other traders, and driven to the Pugu market in Dar es Salaam. Now, Ezekiel's cows were probably somewhere in the large market where Larry, Samuel and I sat.

After some time, the meat and more beers finished, Larry had bought four cattle from two different sellers and arranged to have them loaded on a truck, each one with his number written on its side with a marker pen. When the cattle were unloaded at the Ukonga-Mazizini abattoir, a few kilometres away, Larry's workers used the numbers to identify and separate these from dozens of other cattle on the truck and tie them up at Larry's place in the slaughtering area.

Larry and I went to Ukonga-Mazizini to see the trucks starting to unload hundreds of cattle in the dusty ground where they would meet their end. This is the biggest abattoir in Dar es Salaam. It consists of a large walled ground within which there are three slaughtering sheds, some cattle pens, a small office, toilet facilities and shops. Each slaughter shed is a concrete slab with a zinc roof over it and rows of metal rails with hooks on which to hang the meat.

After going home to rest, Larry returned to the Ukonga-Mazizini abattoir after 11 pm that night; the place was filling up. Over 200 hundred butchers are members of the butchers' association and working at the abattoir most nights. Each has several assistants and there are numerous other traders and service providers all there creating a business from different parts of the animals. The slaughter sheds were full of cattle, tied up, waiting uneasily. A few bare light bulbs cast shadows on what was becoming a crowd of people busy with different

---

<sup>14</sup> Much of the content of this section was previously published as a blog: Wegerif MCA. (2016) Feeding Dar es Salaam: Where does all the meat come from? *Rural Sociology Group Wageningen University*. Wageningen, Netherlands.

activities. The street outside the ground had filled up with women and men selling food and drinks and other traders selling cell-phone vouchers and more.

There was no space to move between the over 200 cattle in the slaughter area where Larry worked. At one side, a tall man, showing his muscular body to good effect in cut-off jean shorts and a sleeveless t-shirt, was talking loudly to a group of men who watched his work. The axe blade at the end of a metre-long axe handle was glinting in the dim light as he scraped it fast on the concrete and then inspected it.

More men were arriving (only four of the 200 butchers are women and even their assistants are all men) and cattle were being wrestled to the floor, their legs tied together. The men then gathered around the slaughter areas, everyone with a sharp knife, many sitting or leaning on the low walls that ran down two sides of the concrete floor where the cattle waited.

Quiet descended on the cattle lying in lines on the floor and the men around, a pause. Then, at midnight, two men held a cow at one side of the shed, while a third wearing a round, brimless, embroidered hat slit the cow's throat with such a swift motion it was hard to see, but the cow gasped and the blood was real. Then, there was a stab in the chest that released another stream of blood, and the man was already slicing the throat of the next in line, stepping, slicing and stabbing with swift and economical movements. The butcher's assistants scrambling to have the next cow held still, with throat exposed, ready for the knife. The blood spread on the slightly sloped floors running into gutters and forming small warm crimson streams running to concrete pits at the edge of the shed. Behind the man with the hat was a trail of dead cattle quickly being skinned and dissected. The tall man with the sharp axe swung into noisy action chopping off the horns and then returning later to split each carcass in half straight down the length of its spine with accurate, practiced blows. Another axe man was stepping from cow to cow, doing the same task in another part of the shed. The same process was being repeated on the two other slaughtering floors.

Larry was overseeing the dissection of his cattle and negotiating who would get which bits for what price. By this stage, the feet and heads had been taken away, the stomach was carried off by someone else and the skin had already been sold. Soon what was left of the cow would be in quarters hanging from large hooks and rails about two metres high running the length of the slaughter areas. All of the miscellaneous bits that had helped the cattle in different ways in life had been removed and become part of another business from which multitudes of different traders, some with workers, some working alone, all derive a livelihood.

There are many bits to sell and many costs, as well. For every animal slaughtered, Larry pays the owners of the abattoir, an association of five of them descended from those who started the operation in the early 1970s. He pays for the slaughter done by people from the Muslim association, who do the actual kill in rough conformity with requirements for it to

be halal. He pays a tax for the municipality, pays the axe man and pays his workers who handle the cattle when alive and later skin and cut up the beasts.

In another part of the ground I found a concrete slab about a metre above ground level covered with rows of stomachs; these were being energetically cleaned. Not far away, the stomach lining was being strung up on sticks for cleaning. A little way from there, the penises from the bulls were being cleaned and piled up on sacks ready for sale to Chinese businessmen. The testicles had become part of another business. Two men sat on crates, one holding the testicles of a fallen bull for the other to slice the skin from around the top, throwing the resulting bracelet of skin and hair into a pile that will be sold as treats for dogs to chew. The testicles themselves are then scraped clean with the knife before being put on another pile ready to go to market. Nearby, cows' heads were being thrown onto the back of a three-ton truck; many would later end up in beef soups.

Back at the slaughter shed, some beasts were still being cut up, men lifting heavy carcasses to hang on hooks and pushing past each other in the crowded space. A young man stood knee deep in blood in a pit at the edge of the shed, using a bucket to scoop the content up and pour it into a 200-litre drum on a push cart. More than 10 of these 200-litre drums would be filled that night, from this one of three slaughtering sheds; the blood later cooked, dried and sold as an ingredient for chicken food.

In one of the corridors of hanging meat, I saw an attractive young woman in a bleached white coat, her braided hair under a white hair net almost covering her bright orange earrings. In her hand was a knife as long and sharp as any of the men's; she made deep slices into slabs of meat in front of her, then moved to the next. She flashed silent stares, knife in hand, at anyone daring to call to her or argue with her pronouncements. Following behind her, a man held a large stamp and ink pad, on her nod (she never spoke) he stamped the meat as government inspected; fit, or reasonably so, for human consumption. She is a university graduate in veterinary sciences, one of the government employed health inspectors who work every night providing some form of oversight and regulation, although they are the first to admit this does not conform with ideal or internationally-accepted standards. If the inspectors are not satisfied, the meat is condemned; not a common occurrence, but it happens. The cows had already undergone at least a cursory health examination before being allowed to be slaughtered; hence, a few lost and lonely cattle that did not satisfy the vets were still standing in a pen to the side. Not surprisingly, this abattoir, along with all others in Dar es Salaam, has been the subject of health concerns. The government has shut it a few times and instructed that improvements be made (Qorro, 2015; Agri-Business Africa, 2015). The saving grace of the system, from a hygiene perspective, is the speed of it all. The live animal is slaughtered after midnight, beef is in the shop by dawn and most is sold the same day.

The floor was still red, but the lines of hanging meat were beginning to look almost orderly, buyers were arriving and walking down the lines, inspecting carcasses, squeezing dead

thighs, sometimes cutting a bit to get a better look and feel. The trading became a cacophony of voices as people negotiated and argued over prices and meat quality.

By 3 am, there were more than a dozen two-ton trucks and another ten smaller vans, all painted white in conformity with at least one part of the regulations. Leaning on one truck was a smartly-dressed owner/driver watching a movie on his iPad. He obtained an accounting degree at university, then after a year employed in a car company, he started his own business, importing a few cars, farming chickens and then branching into meat transport. He has two trucks, one he drives himself. He carries meat for a number of traders every night delivering normally to ten butchers in different parts of town.

By 4 am the trucks are leaving down the narrow and crowded road, the slaughter sheds are getting emptier. By sunrise, the place is empty and shutting down.

The formal organisations at Ukonga-Mazizini are the association of the owners; the meat traders/butchers' association; the market management and the health inspectors from the government. The market management is a minimalist operation that employs a security guard at the gate and collects and hands over taxes. Most of the operations and interactions are happening through multiple sets of relations with the different economic actors, all dependent on the other parts of the business, but with no planned coordination.

### **5.3.5. Chicken selling and slaughtering<sup>15</sup>**

It is 5 am, still dark, I am at the Shekilango people's market in Dar es Salaam, a variety of vehicles are arriving and stopping in the street next to the market; the clucking of chickens fills the air. Motorbikes are pulling up, most with two large woven baskets full of live chickens tied on top of each other on the back. The baskets carrying up to 50 chickens each are arranged on the ground. Small Suzuki pick-up trucks and other vehicles with wood and wire frames on the back arrive with hundreds of chickens, the various buyers crowding around them as the morning business picks up and the sun begins to light the sky. Some customers are buying directly from the vans and motorbikes. Some of the butchers, identifiable in their white overalls and boots, are also buying direct from the vehicles to fill orders they already have. I watch the scene while sitting on a large rock on the edge of the road. The man sitting next to me on the rock is selling plastic bags of different sizes and cigarettes to customers most of whom are traders. Some of the people with the vans and motorbikes also have a stall in the market or cooperate with someone who does. The chickens not sold directly in the morning are transferred to the market and sold there through the rest of the day. Under a high roof that covers a raised concrete platform there are thousands of chickens in lines of cages four levels high. The alley ways left between the cages are busy with people selling and buying chickens, negotiating or just talking. There is an alley at a lower level between the platform and six white tiled chicken slaughtering and

---

<sup>15</sup> Much of the content of this section was shared in a blog: Wegerif MCA. (2014c) Symbiotic Chicken Supplies: Food provisioning in Dar es Salaam.

cleaning areas that run along two sides of the platform. Men in now blood splattered white coats fill the slaughter areas ending the lives of chicken after chicken and helping them off with their heads and feet before a few more quick flashes of sharp knives relieve the victims of their innards. Women sit on the ground or on some bricks cleaning the chicken intestines, heads and legs. Each of the six cleaning areas has a 200-litre steel drum on top of a wood fire boiling the water used to clean the chickens and loosen the feathers for plucking. Steam mixes with the wood smoke to shroud the dead birds, dumped into the drums with their legs tied together in bundles. The butchers take turns to stir them with a long wooden pole and lift them out again for the plucking to begin.

The morning rush of deliveries was over, the slaughter was well underway, the chicken trading continued. I talked to the chicken sellers under the high roof, then to some of the men in the once white coats and later to women sitting with their buckets of heads and feet. I wanted to understand how this whole system works that takes in live chickens and churns out upwards of 6,000 slaughtered ones a day.

Many customers choose their live chickens from among the more than 50 cages and buy them from the chicken sellers. The customer can take the chicken with them and do what they want with it, but most have it killed and cleaned at the market and leave with something in a plastic bag a little bit closer in appearance to the chicken that most European and North American chicken eaters carry out of supermarkets. If you want the head, feet and intestines then you will need to pay the man who does the killing and cleaning an extra TSh 500 (\$ 0.30) for these bits. If you see those bits of the chicken as surplus to your requirements then you don't need to pay for the slaughter, it is done for free and you will still have the liver and gizzards. The chicken killer, of which there are more than 60 present on most days working from 5am to 6pm, will make his money (they are all men) by selling the heads, feet and intestines for between TSh 300 and TSh 500 a set to the dozens of women who buy these parts. Prices vary according to the size of the chickens and the ability of the women to negotiate. These women cook and sell the chicken parts in their normally poorer neighbourhoods of Dar es Salaam. One woman I spoke to buys 100 sets of head, feet and intestines at TSh 300 a set every day. She seems to get a good deal from butchers as a result of knowing them and due to the quantity she buys. She sells these cooked for TSh 750 in total per set (300 per intestine, 150 per head and per foot) so a gross profit of about TSh 45,000 (\$ 27.27) per day plus what she gets for four whole chickens she also buys at the market and sells to some of her wealthier customers. There are other costs that she has to cover from this, like TSh 800 (\$ 0.48) for transport on the *daladala*, but in a country where the minimum wage is TSh 80,000 (\$ 48.48) per month she is taking home a reasonable amount each day.

The market provides the space and the basic facilities around which the different actors, all individual or very small business operators perform their interconnected roles. The chicken sellers pay TSh 15,000 (\$ 9.09) per month for the space to put their chicken cages. The chicken killers pay TSh 1,500 (\$ 0.91) per day for the use of the slaughtering spaces. The

women buying and cleaning the intestines, heads and feet, pay TSh 300 (\$ 0.18) for her space for cleaning and with it the buying opportunity. These funds support the market cleaning, the security, and a part of it goes as a tax to the municipality that has allocated this space to the market and arranges the bulk rubbish collection. A young man in a dirty white coat who I was talking with says it is good work, most days he kills 50 to 100 chickens, which is an income of up to TSh 50,000 (\$ 30.30), from which he has to pay the market rent of just TSh 1,500 (\$ 0.91). By noon on the day I was there he had killed 15 chickens, so had already covered the day's rent and had cleared TSh 6,000 (\$ 3.64) profit, more than he would get for a day's work on a commercial farm or as a security guard. The chicken seller I was speaking to had sold 94 chickens by that time and was running out of stock. With his mark-up of between TSh 300 and TSh 500 per chicken (He was reluctant to give a definite figure and it probably varied based on negotiations with customers) he has made some money and will have most of the rest of the day off. A woman I sat and talked with has still got to cook and make her sales, but is confident she will have enough money to feed her two children.

There are eating areas around the market where one can get lunch, including chicken of course. Quite a lot of the chicken buyers are taking them to restaurants where the chickens will be grilled, boiled in soup or fried to feed the customers. In the meantime, women are cleaning the intestines of the same chickens and getting ready to cook and serve them to their own clients. There are a multitude of other small enterprises that are supplied through this market with its own large number of different actors.

The chicken market's links with other parts of the food system and wider economy go beyond food. A few minutes' walk from the market are some plots of land, around 300 metres square each, filled with green vegetables, mostly *mchicha*. These are on the edge of a river valley and in the space behind some apartment buildings. Next to a number of the plots are piles of chicken manure that are bought from the chicken sellers in the market and after sitting for a while (it is too strong initially) will be spread on the small fields. When the vegetables are harvested some will be sold to the vegetable traders who have stalls in the same market where the chickens are also sold.

There are young men who have a business buying water from the flats nearby and delivering it to the butchers for the steaming 200-litre barrels they are using. They transport the water in plastic containers on *mkokoteni* (push cart with bicycle wheels) and sell it to the butchers. Many of the residents in those flats are also customers in the market. Another person is bringing and selling firewood to heat the water.

All of the people in the chicken and related businesses are buying other food, cooked and uncooked, in the market, it is the place where they are spending a large part of their lives, working seven days most weeks. Chicken sellers who have finished selling all their stock for the day often stay around the market, sitting and chatting with friends. Along with being part of the overall market operation and individual entrepreneurs competing for customers

and suppliers, the actors are also involved in other layers of collaboration formal and informal.

Each of the six slaughter areas is run through the cooperation of 10 to 15 butchers. They share the 200-litre barrels of boiling water pooling money to buy the water and firewood and taking turns to look after the fire and stir the chickens.

The stall holders under the large roof pooled their resources to build the structure and all contribute to its upkeep, in addition to the contributions they make to the overall market operation, such as paying for the security guards and cleaners.

## **5.4. Speciality shops**

There are shops that specialise in selling certain foods at more competitive prices, and in the case of grains with a greater variety, when compared to the local *dukas*. These tend to be located around market areas where they are accessible for deliveries and for people coming to and from the market. I will just touch on two examples of these, one selling eggs and one selling grains. There are similar shops, to the ones described here, around all the market areas in Dar es Salaam.

### **5.4.1. Egg shop**

Mama Hamisi has an egg shop right next to the Mikoroshoni Market; in fact it is part of the market area. She rents it from the person who built the shop and she pays the market dues and tax as well. An advantage of being within the market area is that she does not need a shop licence as she is considered a trader in the market.

The shop is a single room in a simple concrete structure with the whole front made up of folding metal doors that open onto the road. She always has trays of eggs stacked on the floor and sells them by the tray often to people with their own businesses, such as nearby *dukas* or chip sellers. She also supplies a restaurant nearby and a bakery that is in the Shoppers Plaza alongside the Shoppers Supermarket. Some people buy the trays for their own use due to the low prices and some buy per egg at a more expensive, but still reasonable, per egg price. More details of her business are given in Chapter Seven.

Mama Hamisi started the shop with money from her husband who is a teacher. Before that she did some small businesses selling clothes. She was told about the egg business by a sister in law who has a shop in another part of town, she said "I could see a profit in it and it is a business that does not give trouble". She runs the shop from about 8 am until 7 pm daily apart from Sundays when she closes around 2 pm. Most of the time she was running the shop alone and later when she was busy with other activities she had an assistant. At times, she also left her shop being looked after by the shopkeeper from the neighbouring shop.

Whenever I have been to Mama Hamisi's shop she is with a number of people, normally sitting in the shade just outside the shop, talking with the shopkeepers of the neighbouring shops and with passers-by and customers. She is always beautifully dressed in colourful

dresses and scarves. There are few vehicles on the narrow track between the shops and stalls, but many people walk by and interact with Mama Hamisi and other shop owners.

#### 5.4.2. Grain shop

About 200 metres from the Mikoroshoni Market is a grain shop run by Nassor. Nassor and his brother rent the shop space made up of a room about four metres wide that faces onto the road with a further small store room behind it (Photograph 5). They are in a row of other shops, including other grain shops, that stretches on either side of the road from the market to where Nassor's shop is and beyond. Every morning from about 7 am Nassor opens the shops doors and moves the sacks of grains he sells to the space in front of his shop, he packs up and closes at around 9 pm. He sells other basic items common to a typical *duka*, but his stock is not as comprehensive as for example the stock in Mangi's Duka and his focus is on the variety of grains and pulses he sells.

Nassor has at least eight different qualities and varieties of eating rice on sale at any one time with a range of prices. For example, in July 2014 the prices were from TSh 1,150 (\$ 0.70) to TSh 1,700 (\$ 1.03) per kilo. In addition, he had three types of rice of more broken up grains and lower quality that people use for baking rice bread and *vitumbua*. These included one type of rice from Thailand for TSh 1,200 per kilo and two Tanzanian varieties for TSh 850 and TSh 900 per Kilo. He sells different whole maize varieties including a yellow variety and also sells *sembe*. One can find millet, wheat, sorghum and a range of beans, pigeon peas and pulses in other sacks. Nassor sells by weight in any quantity the customer wants. The grains or pulses are taken from large sacks – normally he has between 27 and 30 sacks of different items - and weighed on scales he has at the shop counter. He also sells some pre-packaged items like *sembe* and *dona*.

People buy the whole maize kernesles to grind for themselves, often when they want *dona*. There are dishes that are cooked with the whole maize kernels and there is also a practice of grinding the maize along with other grains or pulses such as grinding in some sorghum and beans to add more nutrition and variety of flavour. Nassor also sells the pre-ground *dona*, but this does not stop people buying the whole maize kernels if they like to have the *dona* made in their own particular way.

The shop was started early in 2013 by Nassor's brother with capital saved from his job as a security guard at the USA Embassy. Nassor runs the shop and says his brother does not know the business. They share the profits with Nassor saying he gets a bigger share than his brother. The brothers are from Kigoma region where Nassor finished primary school and used to farm.

Nassor buys most of the maize, pulses and other grains from Tandale Market going there about once a month and hiring transport to bring the stock back. He says "there are lots of traders in Tandale and the prices are low". The rice is bought from a shop in Kawe that has better prices. Asked how and where he learnt to run the business Nassor says "I learnt here

here [pointing at the floor of his shop]”. He also explains that a shop owner from just across the road gave him advice and showed him where to get stock, “he took me there [the rice shop in Kawa]” Nassor says gesturing to the shop across the road. The shop across the road looks very much like Nassor’s and sells essentially the same items. The owner is also from the Kigoma region, although they only met in Dar es Salaam where Nassor says “we became friends”. Indeed, on a number of occasions, when with Nassor, I met the other shop owner and his children. The two shopkeepers stop at each other’s shops to chat and always greet each other when they pass by.



**Photograph 5 – Nassor’s shop with sacks of grains and pulses.**

I tried to inquire about the notion of competition between these two shops selling very similar goods. Nassor said “we get from the same place and sell at the same price, we cannot be competing”. He also explained another advantage for customers of the shops being close by, which is that “if he [shop across the road] does not have something, they [customers] come here and if I do not have they go to his shop”. As for other reasons why a customer chooses Nassor’s shop over the other grain shops in the same street, Nassor says of his customers “we know each other”.

## **5.5. Supermarkets**

Early in the research process, after interviewing the first 18 Tanzanian eaters in Dar es Salaam, I found that none of them ever got food from any supermarket. The reasons for this have been elaborated in the previous chapter. What it was quickly possible to verify was that the foods these eaters depended on were more expensive in the supermarkets. It was clearly only a small proportion of Tanzanians, an elite group, who regularly used a supermarket. For this reason, I did not pursue the supermarket model of food supply in-

depth, preferring to focus on the main source of food for the majority of people and for most of the food in the city. I did, however, take some time looking at the egg supplies through the supermarket as well as from other sources, as this was one of the first foods I followed. I also continued, throughout the close to four years of research, to compare prices of key foods at the people's markets, *dukas* and supermarkets. The supermarkets remained more expensive for all the foods looked at in this thesis, except for the Tanga Fresh milk discussed in Chapter Eight.

### **5.5.1. Shoppers**

Shoppers Supermarket is one of the largest in Dar es Salaam. When I started my research, they had one branch at Mikocheni. It is in a small shopping complex called Shoppers Plaza surrounded by car parks (Photograph 6). By the end of my field research they had opened two new stores; one in Masaki and one in Mbezi Beach. The air-conditioned interiors of their stores have shelves packed with different products similar to small (it would be considered small compared to almost any supermarket one would find in South Africa or the Netherlands) supermarkets in other parts of the world. As well as food, they sell household goods such as pots and pans, towels and blankets. If the main electricity supply is cut, a large diesel generator kicks in to continue running the lights and equipment.

The owners of Shoppers Supermarkets are a Tanzanian family of Indian decent and they are directly involved in the operations, coming to the stores and going to markets to source products. The general manager (GM) is from India, although he has been in Tanzania for over twenty years, and most of the senior management are also from India or of Indian decent.

The GM said they cater to all income groups and that customer satisfaction is their priority. The GM also stated that the Masaki branch was more targeting the international community in that suburb where many expatriates live. Given that they do not meet the food buying needs of the vast majority of Tanzanians in Dar es Salaam, while they do import lots of processed and luxury food items that few Tanzanians eat, they are clearly in practice targeting the richer customers.

According to the GM they are happy to source food locally as long as the quality is right, "we don't compromise quality. It is better if supplies are local, but the needs of the customer, customer satisfaction, matter" he said. At the same time, he said they have about reached the maximum they can import due to the limitation on the importation of food by the Tanzania Food and Drug Authority (TFDA) that has to approve all imported products. The GM said they lodge about 15 product applications per month, but only about one or two are approved. They import foods and other items from the United Kingdom, South Africa, Dubai and the United State of America. He explained they get a lot from Dubai as they are more orientated to the Asian market. Important to the approach of Shoppers is that "our customers know they will get the product here".

Shoppers' payment terms for suppliers vary, from a few weeks to 30 days or 45 days for some. For some suppliers, as discovered in the egg research (Chapter Seven), Shoppers' payment terms, while not ideal, were manageable while Shoprite's were not. The Purchasing Manager makes decisions based on price and reliability of delivery, when asked he knew little about where the foods delivered to the back of the shop come from. As for the eater, they never see the driver making the delivery, let alone someone close to the production. This is a classic example of producers and consumers "disconnecting" although, in this case, the benefit of improved cost effectiveness is not there (Wiskerke, 2010; Wiskerke, 2007).



**Photograph 6 - Shoppers Plaza where Shoppers Supermarket is found.**

While supermarkets are more expensive and involve people leaving the areas where they live to shop, it can be argued that supermarkets in cities such as Dar es Salaam create a new social space of "Western style shopping" (Lonely Planet, 2012). It is a place where the eaters who can afford to are more likely to meet other car owners, senior managers and professionals. The air-conditioned "amiable space with the highest standards of safety, cleanliness and comfort" (Shoppers Plaza, 2013) is a welcome change for some people from the heat and humidity of Dar es Salaam. If you are already at the supermarket for other reasons it is easy to pick up some items there even if they are cheaper at the local *duka*. This is a different form of accessibility of most things being available under one roof for those in this social and economic sphere. Shoppers have coffee shops close to their supermarkets that form a place to meet others who can afford the coffee that costs 30 times more per cup than the excellent coffee that Mzee Steven used to drink outside Mangi's Duka.

### **5.5.2. Shoprite**

Shoprite Holdings Ltd., which proclaims itself to be “Africa’s largest food retailer” (Shoprite Holdings Ltd., 2014), had a store in Mikocheni, close to the street where I lived, but this closed in 2008, leaving two other Shoprite stores in Dar es Salaam (Crush and Frayne, 2011; Abrahams, 2009). Due to Shoprite’s prominence in debates on supermarkets in Africa they could not be ignored in this study. Efforts to get a full interview with the company or answers to questions were unsuccessful. One manager spoke to me briefly and then referred me to their head office in South Africa saying he could not talk to me. Phoning and emailing Shoprite did not get me much further, only eliciting a threatening response that included inquiring about “which government organ is supporting your research as we only deal with organizations linked to government” and the statement “it is illegal for you to dig information from a company”.

There are documented examples of small-farmers who have tried to supply Shoprite, such as that of farmers from Luangeni in Zambia who felt they could not compete with the Shoprite branch in Chipata and, therefore, went into a supply partnership with them (Miller, 2008). This partnership in Zambia, like others, later collapsed (Miller, 2008). Many producers and suppliers in Tanzania also seem to prefer supplying other outlets. Late in 2013 the news emerged that Shoprite was selling its three branches in Tanzania to Nakumat, a Kenyan retail group, thus ending Shoprite’s efforts to penetrate the Tanzanian market (Ciuri, 2013; Miriri, 2014).

### **5.5.3. Supermarket differences**

Shoppers Supermarket and Shoprite may in many ways look similar, but they are also very different, importantly in the ownership structure and style of management. Shoprite are very corporate serving distant managers and shareholders, while Shoppers is much more approachable with hands on owners. Interestingly, Nakumat that took over the Shoprite stores is also a family owned business and their manager for Tanzania could be found on the shop floor and was very approachable and willing to discuss their operations. As noted, there was a difference for suppliers for whom the supplying on credit to supermarkets is a problematic issue, but worse with some supermarkets than others. Shoppers never seemed to have difficulties with staff, but Shoprite did (Abrahams, 2009). While Shoppers opened a new store in 2014 and Nakumat was also coming into Tanzania at the same time, another Kenyan supermarket group, Uchumi, was running into trouble. Uchumi finally closed their Tanzania operations in October 2015 owing large amounts of money to suppliers and workers and saying that they had been losing money for the last five years (Lazaro, 2015; Ngugi, 2015).

### **5.6. Kentucky Fried Chicken**

In May 2013, the first Kentucky Fried Chicken (KFC) branch opened in Dar es Salaam. This was their first in Tanzania, followed by three more stores over the following two years. The opening of this international fast-food outlet was an interesting phenomenon to explore so I made several visits to KFC and interviewed some of their management including the

General Manager (GM) for the KFC operation in Tanzania. I share briefly on the KFC operation here not because it is an important part of food supply to Dar es Salaam, at least not yet, but more for some lessons and by way of contrast to the main food system of the city. It is also illustrative of the dynamics and risks of this type of 'food' corporation coming into Tanzania.

Kuku Foods East Africa is the company that has started the KFC operation in Tanzania. They are a South African owned, but Kenyan based, company that has the KFC franchise for Kenya, Uganda and Tanzania. They got the licence to open in Tanzania in 2012 along with a "certificate of incentives" entitling them to various investor incentives for setting up operation in Tanzania.

One of the striking things when entering a KFC store in Dar es Salaam is the imagery that is being portrayed. In the first store in Mikocheni the entire wall next to the counter is covered in large pictures of people. There are 11 different images making up the collage of people and, in this African city, eight of the 11 images are exclusively of white people. Two of the images are of black people and one image has a combination of black and white people in it.

The GM for Tanzania is a South African woman, a white Afrikaner. She is proud that "KFC is bringing an international brand standard to Tanzania". Other positive impacts she claims for the operation are employment and training of staff, including training them to deal with customers in English (Tanzania is a Kiswahili speaking country). All of the store managers are brought from outside Tanzania, at the time of the interview they were from the Philippines and India. Everything in the store is imported, including the advertising that comes from South Africa. The boxes and bags that the customers are served in is from South Africa, the tables, cooking equipment, chairs are all imported. Bread rolls for chicken burgers and the coleslaw is imported from South Africa. The chips are flown frozen from the Netherlands.

The only things not imported are the Coca-Cola products that come from the Coca-Cola plant in Tanzania and the chicken. The GM is clear that they would have brought in Rainbow chicken from South Africa if they were allowed to, but "In Tanzania you cannot import chicken". They therefore had to find a local supplier, so they went to the Bahari Bounty group who have a chicken operation that among others focusses on supermarkets and "International fast food chains" (Bahari Bounty Group, 2015).

The reason for importation is that the "international standards" have to be maintained and all items and all suppliers have to be approved by the KFC head office in the USA. Getting this approval takes time, so it is easier to import an already approved product.

The pricing, as well as the advertising, orientates KFC to a particular wealthier market. In May 2015 KFC were selling 500 ml cold drinks for TSh 2,000 (\$ 1.21) and one piece of chicken for TSh 4,000 (\$ 2.42). By comparison the popular Jacky's Bar, which is not at all the cheapest in Dar es Salaam and is also popular with expatriates as well as local clients, was

selling cold drink for TSh 1,000 (\$ 0.61) and a whole grilled chicken for TSh 12,000 (\$ 7.27), the equivalent of just three pieces of KFC. Jacky's also has more generous portions than KFC, a far wider menu including more Tanzanian foods, they are owned by two Tanzanian women who can often be found there eating and drinking their own products, and they buy from a range of local suppliers.

Asked about health concerns with the high fat and salt content of KFC products in the context of growing obesity, the GM argued that it was people choosing to eat too much and not exercising that is the problem, not their product, as she said "the culprit is the human race, not what is offered".

The challenges that KFC face are the logistics especially of importing things, which includes having to get Tanzania Food and Drug Authority (TFDA) and Tanzania Bureau of Standards (TBS) approvals. There is also poor infrastructure and unreliable electricity supplies requiring generators. The GM noted the language challenge as people do not speak English as well as they do in Kenya and Uganda. But, the GM said they are doing Ok and noted "every day you learn about Africa. As time goes by you conquer all these things".

The company wants to expand across Tanzania and the GM shared that KFC had five stores in South Africa in the 1970s and now have 700-800, "we see this sort of potential in Tanzania" she said.

## 5.7. Conclusion

We see in these examples of trading places some of the core characteristics of the symbiotic food system, which will be elaborated further in the concluding Chapter Nine, as well as some of the challenges of the corporate outlets.

The symbiotic characteristics include the way many actors are completely interdependent, relying on others, but with no centralised management. The way different parts of a slaughtered cow, or chicken, form business opportunities for different people is probably the most graphic, but not only illustration of this phenomenon. We see the way actors are assisting each other, such as neighbouring shopkeepers and stallholders watching stock and selling for each other, rather than or as well as competing with each other. The low barriers to entry into the business, combined with collaboration, can be seen in how shopkeepers and security guards can become business owners with the little capital they can save along with the advice and assistance they receive from others already in the business. Even with the relatively large investment in rice milling and warehousing operations in Ubaruku, the owners are still dependent on and serving *wakulima* and small traders.

The people's markets involve a range of forms and levels of association. A lot of this fits with the theory of common pool resource management with governance structures and rules of operation to ensure the shared physical infrastructure and market demand are used sustainably to members' mutual benefit (Ostrom, 1990). These include mutual assistance such as the Cargo Porters in Kibaigwa organising health and education assistance for their

members and the contributions of members to things like funeral costs in Mikoroshoni. We also see, however, that markets in some places operate in a similar way without formalised structures, for example, the rice trading around the mills in Ubaruku. This is based more on symbiotic relations, rather than the structures and rules found in common pool resource management. These trading places and activities, structured or not, have a high level of inclusion, meet practical needs and build community.

The trading places and markets supplying Dar es Salaam have similarities to the concept of “nested markets”, but also differences (Schneider et al., 2015; Van der Ploeg et al., 2012). Importantly we can see that, unlike nested markets, they are based on long-standing practices and they are not created for a purpose or as an alternative to the dominant food system. They are the dominant system meeting food needs of the eaters in the city.

The *dukas* in particular create spaces and opportunities for social interaction close to where people live thus enabling, almost requiring, people who live near to each other to meet and interact if they want to buy. All this is contact that contributes to holding communities as well as the food system together. The space outside and around Mama Hamisi’s shop is, like the market area it is part of, also a social space, the traders all know each other and many of their customers stop to talk. Inside the market the stall holders have ongoing interaction with each other as well as with their clients, building trust and familiarity.

Supermarkets, on the other hand, draw people away from the streets on which they live and create a more depersonalized shopping experience. There may be a certain social space created, especially at the linked coffee shops, but this is a very elite grouping more detached from the majority of residents in Dar es Salaam. Customers help themselves from the shelves and can pay the cashiers and leave without saying a word. The Purchasing Manager does not know where the suppliers and foods are from and the buyers have no direct contact with anyone involved with or linked to the production. The high level of personal contact at the *duka* is replaced by packaging, labelling and refrigeration which is all aimed at inspiring consumer confidence. The viability of the supermarket model also comes into question with both Shoprite from South Africa and Uchumi from Kenya failing to survive in the Tanzanian market.

A company like KFC is completely inaccessible to the small local suppliers and could never buy from the people’s markets. The very nature of the markets and the food system that works for most eaters in Dar es Salaam is inaccessible to a corporation like KFC with its procedures for approval of suppliers and supplies. It can only relate to corporations like itself that have production processes divorced from the variation of particular local contexts or changing seasons. In stark contrast, the predominant food system feeding Dar es Salaam is made up of many actors who are completely embedded within the local context and follow the seasonal and other shifts of that context. KFC comes not only with its own food, but also its own images, its preferred language and all of these are determined and overseen by a corporation from elsewhere through its imported managers in Tanzania. KFC currently

reaches only a small elite target group, but that could change and the implications of the expansion of this approach could be enormous for food producers and others.

It is remarkable how often development interventions involve building the infrastructure of market places not realising that the market is not the building but the exchange of goods and money. Market infrastructure where there is existing trade makes sense and can add value through improving the conditions for the people and the food in the market place. Market infrastructure will, however, never create the actual trading. I have seen a number of white elephant projects in the form of empty market places due to this misunderstanding of the relationship between the market as trade and the market place.

In all the examples of people's markets given above, the trading pre-dated the infrastructure of the market place. At Mikoroshoni the existing traders with their businesses created the market space. They continue to receive very little assistance for this despite the important economic and community function the market performs. At Kibaigwa the trading activities also pre-dated the market infrastructure that was put in by government and donors. Two important additional success factors for Kibaigwa Market can be seen and learnt from. One is the continuation of a central role for the cargo porters and their association which anchored the existing trading relations with their services of unloading, loading and security. Two is the weighbridge, which provides a new and important service, quick and accurate weighing of large amounts of grains, that adds value for the traders and thus encourages them to use the facilities and space even though there is a cost. At Ubaruku there is no organised market space, showing how it is not a market place that makes a market. There has, however, been the provision of key infrastructure - electricity and roads - that has enabled the growth of a milling industry and it is around the key service of milling that trading has developed. The success of a market place depends on the actual, normally pre-existing, trade and the provision by the market place of a key service or services that add value to the trading.

Interestingly in both the case of Kibaigwa and of Ubaruku the state and donor interventions happened in response to health and safety concerns, not initially with the motivation to actually stimulate trading. This indicates how short sighted the state and many development agents are when it comes to seeing and responding supportively to market activities.

Many of the trading places are structured around key parts of the production process. At Ubaruku it is around the rice husking, in the chicken and beef cases around the slaughter process. At Ukonga-Mazizini the meat is bought from where it hangs directly over the floor where the cow was slaughtered only an hour or so before. At Shekilango the chicken slaughter areas surround the space where the live chickens are kept and sold. The live animal is converted to meat and sold in the same space with an immediacy and lack of the separation and distantation of the traders, buyers and butchers from each other.



## Chapter Six – Staple Foods: Maize, Rice and Potatoes<sup>16</sup>

### 6.1. Introduction

This chapter maps the supply of the key staple foods of maize, rice and potatoes to Dar es Salaam. These foods provide the primary source of carbohydrates for the majority of eaters in the city. There are other important staples, such as cassava and bananas/plantains, but it was beyond the scope of this study to look at all of them. The supply of the staple foods that were looked at provides a useful lens through which to look at the food system that feeds the city as they are central to meeting people's food needs. Through their more spatially distant origins, these foods challenge those who have tended to focus narrowly on the local, 'short food supply chains' and planning for food production within city regional administrative boundaries. We will need to think beyond such geographic and administrative limits if we are to meet the food needs of urban residents.

For the last century the supply of grains and other foods to Dar es Salaam has drawn on production in different regions of the country as well as at times involving imports (Bryceson, 1987). The symbiotic food system supplying Dar es Salaam, while covering an extensive area, looks very different from the internationally dominant agro-industrial food system. This chapter will also highlight the importance of the urban market for the livelihoods of *wakulima* in the rural hinterland and rural development more broadly.

Tanzania produces most of the food, especially basic foods, that it needs, and most of this production is done by *wakulima* in the six million households that are engaged in agricultural production with an average of just 1.3 hectares of land each. Around 3.5 million households plant maize, 1.2 million grow rice and only around 110,000 grow Irish potatoes (National Bureau of Statistics, 2012a). Maize and potatoes are grown almost exclusively by small farmers in Tanzania and around 90% of rice production is also by small farmers (Photograph 7)(SAGCOT, Undated). Low productivity and lack of access to land and inputs are constraints (The World Bank, 2012; National Bureau of Statistics, 2012a), but despite this production has increased steadily and significantly over the recent years with rice paddy production doubling between 2004 and 2014 and potato production going up 2.5 times in the same ten year period (FAOSTAT, 2016).

Today in Tanzania there is some importation of rice and maize, but also some exports to neighbouring countries. More significant amounts of wheat, soy and cooking oil, as well as other processed foods are imported (SAGCOT, Undated). It is found that the bulk of key staple foods essential to the diet of the majority of residents of Dar es Salaam are being produced and transported across a geography that includes far flung rural parts of the country (Figure 2). That there is not more staple foods imported from outside the country is in part due to the tariff and other regulatory protection of the national market (East African

---

<sup>16</sup> Substantial portions of this chapter were previously published as a journal article (Wegerif and Hebinck, 2016)

Community, 2012; Ministry of Finance and Planning, 2014) and because there is a functioning food system that delivers within the country.

The importance of selling their crops is shown by the fact that sales of food crops is the primary source of income for 61.5% of the six million farming households, followed by sale of cash crops that is the primary income for 9.9% (National Bureau of Statistics, 2012a: 17). Production by small-scale *wakulima* continues to be the mainstay of livelihoods for rural people and, as has been the case since the beginning of the last century, it continues to be the main source of food for Dar es Salaam and the nation as a whole. There have been periods of crisis in the supply of food to Dar es Salaam which have been created by wars (the two world wars and then the war with Uganda), droughts and misguided colonial and post-colonial interventions in the food system. After each period of crisis, it has been *wakulima* who have been central in the impressive recoveries. As Bryceson puts it, “[i]n the wake of this devastation the upsurge of grain production and exports in the early 1920s has to be viewed as remarkable” (Bryceson, 1987: 163). Despite the heavy toll of poverty, disease and mortality that peasants suffered “[i]t was the peasant sector which provided the bulwark of productive dynamism in the recovery” (ibid: 187). This *wakulima* driven recovery in food, especially grain supplies, happened again in the 1950s and again after liberalization from the mid-1980s onwards (Bryceson, 1987; Bryceson, 1993; FAOSTAT, 2016).

When it comes to supplying food for Dar es Salaam, “[w]hile the main actors in the evolution of the city’s food supply have been the urban consumers and peasant producers, marketing agents have been the vital go-between” (Bryceson, 1987: 157). These marketing ‘agents’ (*dalalis* and traders) have changed over time due, in part, to the regulatory interventions of the colonial and post-colonial governments. For the first half of the 20th century an ‘Asian’ commercial class dominated trade. Towards the end of the colonial era and in the 1960s African run cooperatives arose and where for a time state supported, until the state imposed the state-owned National Milling Company (NMC) to play the central role in food distribution. The failings of the NMC led to a reinstatement of a state sanctioned and supported role for cooperatives in the early 1980s. With the further liberalisation of trading in the mid-1980s, small-scale African traders came to the fore and have continued to play the central role up to now. Significantly, through all of the interventions, including virtual bans on private trading, trading networks have continued as part of the ‘black-market’ and ‘parallel-market’ to link *wakulima* food production to Dar es Salaam eaters. They have done so, even when illegal, more competitively than the state sanctioned marketing agents and cooperatives. For example, in the late 1970s many *wakulima* refused to sell to the cooperatives because the prices were too low, this was no surprise Bryceson observed “with the free market [‘black-market’] ex-farm price of maize over twice the official price” (Bryceson, 1987: 188).

Whenever trade was liberalised - notably post the first world war and in the 1950s and the mid-1980s – the food system primarily composed of small-scale *wakulima* linked with private traders (whether Asian or African) proved very effective in delivering food to Dar es

Salaam. Importantly the margins that the traders took were extremely low including being significantly lower than the cooperatives that were in turn taking smaller margins than the state run enterprises (Bryceson, 1987; Bryceson, 1993). This competitiveness continues today as indicated by among others, the ability of the small traders to out compete supermarket groups. The rise of the African traders from the 1980s onwards was undoubtedly assisted by the decades of fairly sustained attacks on the Asian traders by state and African petty-bourgeois actors including through the establishment of cooperatives, state agencies and campaigns against 'economic saboteurs' (Bryceson, 1993; Raikes, 1978; Shivji, 1976). There had always been African food traders, regardless of the obstacles placed in their way by colonial and post-colonial governments, with more space created they took the opportunities up with enthusiasm despite having low levels of capital available to them.

Tracing the supply of maize, rice and potatoes for this study followed the same actor orientated ethnography methodology of following the food as explained in Chapter Three. Due to the distances from which these crops were found to come, this involved considerable travel to areas identified by the traders in Dar es Salaam as important sources of their supplies. The visits to these crop producing areas were carried out over a year with repeat visits during 2014 and 2015.



Photograph 7 - A couple harvesting rice paddy from their field in Morogoro Region.

## 6.2. Following the maize

### 6.2.1. The eaters and retailers

It is 6.30pm, Mama Lina, who was introduced in Chapter Four, leans over two charcoal stoves in the yard surrounded by small low zinc roofed rooms that she, her husband and extended family members live in. On one stove a pot of water is waiting for *sembe* in order to cook *ugali*, the staple dish for this and many other meals across Tanzania (Photograph 8). Mama Lina's husband and son get a modest and inconsistent income from odd bits of work as *dalalis*, finding people rooms or houses to rent and selling charcoal.

Mama Lina waits for her husband to come home with *sembe* or the money to buy *sembe*, but after a while she gives up and sends one of her sons to the *duka*. It is less than 50 m away and owned by the shopkeeper who knows her whole family. He returns a few minutes later with one kilo of Enjo *sembe* obtained on interest free credit for TSh 1,000 (\$ 0.61). All the *sembe* is immediately cooked for whomever from among the extended family and friends may pass by to eat. After cooking there is no food left that needs storing anywhere, which is a good thing, because in the crowded living conditions there is almost no storage space and the fridge doesn't work. If Mama Lina's son had walked another 200 m he would have come to Mangi's Duka (see Chapter Five) selling Chapa Asili *sembe* and been able to buy a kilo for the same price as the Enjo and also on credit as he and his family are well known to that slightly more distant shop as well.

Mama Lina could, if she had time, have got *sembe* for a slightly lower price (TSh 800 per 1-kg in March 2015) from shops specialising in selling grains, such as Nassor's shop described in Chapter Five. Her son could even have walked to a maize mill where she takes maize to grind when her husband or another relative brings it from the village.



**Photograph 8 - Mama Lina cooking ugali for her extended family the bag of recently acquired sembe at her feet.**

They could also have got *sembe* from a Supermarket, but they never do. Supermarkets are more expensive than local shops for staple foods like *sembe* and they only sell packages of

fixed quantities with their more affordable prices (still higher than local *duka*) only available if one buys larger quantities. For example, in March 2015 the *dukas* near to Mama Lina were selling *sembe* in any quantity for TSh 1,000 (\$ 0.61) per kilo, while the cheapest 1-kg packet of *sembe* in the nearest supermarket, Shoppers, was TSh 1,900. Shoppers' cheapest *sembe* per kilo at that time was being sold in a 5-kg plastic bag for TSh 5,500, so still TSh 1,100 per kilo. The largest supermarket in Dar es Salaam, Nakumat, was at the same time selling its cheapest *sembe* for TSh 1,800 per kilo or TSh 7,500 for five kilos, still TSh 1,500 per kilo. These prices fluctuated, by May of the same year Shoppers was selling one kilo of *sembe* for TSh 1,600, but their cheapest was then a 5-kg bag for TSh 7,500, so TSh 1,500 per kilo. Nakumat had also dropped its one kilo price to TSh 1,500, but the price of five kilos was the same. The *duka* near Mama Lina's house was still selling any quantity she wanted for TSh 1,000 per kilo.

**Table 5 - Lowest purchase prices for one kilo of *sembe* in different outlets, March 2015**

Mama Lina's local <i>duka</i> :	TSh 1,000 (\$ 0.61)
Shoppers supermarket:	TSh 1,900 (\$ 1.15)
Nakumat supermarket:	TSh 1,800 (\$ 1.09)
Nassor's grain shop near market:	TSh 800 (\$ 0.48)

### 6.2.2. The millers and distributors



**Photograph 9 - The author with one of the Enjo owners and on the right Mama Bibi, another *sembe* brand sharing the same mill with Enjo.**

The *sembe* Mama Lina cooked is a brand called Enjo (Photograph 9) that was started by two sisters and their brother. Enjo and another brand of *sembe* can be bought from a wholesaler

owned and run by Mama Malia and her husband. The wholesale shop on the corner of two dust roads looks similar to other *dukas* and is only about 3.5 metres wide. The exterior is rather shabby, it opens onto the street, but the low and sagging ceiling and the goods hanging over the entrance make it quite dark inside. Mama Malia is always standing behind the counter that is loaded with various items for sale like any *duka* and they do sell retail as well. Mama Malia's two sons, both young adults, are always there assisting her in the shop. There are no other workers. They disappear down a narrow corridor to fetch the wholesale goods such as the 50-kg sacks of Enjo *sembe*, other *sembe*, flour, sugar, large packets of baby nappies and cartons of cigarettes. The choice of which *sembe* to sell depends on the quality and price. "We choose because quality is good and the price has some profit" said Mama Malia. Most customers are coming with the *mkokoteni* push carts and delivering to *dukas* within walking distance (sometimes a long walk), a few come on motorbikes. The shop owners have a 2-ton Toyota Canter truck that Mama Malia's husband uses to collect stock.

The family are from Bagamoyo (about 70 kms from Dar es Salaam) where Mama Malia's family were *wakulima* and her husband's family had a small *duka* that he took over when they passed away. They started the wholesale business in Dar es Salaam in 1986, just at the time of trade liberalisation, using the little capital they had from farming and the *duka*.

Enjo mill their maize in Temeke, package it immediately and distribute to wholesalers, like Mama Malia's and direct to some local *dukas*. They pay to mill with a machine used by eight other *sembe* traders, mostly women, although the machine owner is a local business man. This is one of thousands of such mills across Dar es Salaam. Enjo buy maize from several agents and traders, most of it coming from the Morogoro and Dodoma Regions. When they need to distribute the ground and packed *sembe* to their clients they hire a small truck. They normally deliver and get paid some days later. Enjo and other *sembe* traders also sell *pumba* (chaff/bran) as animal feed, to people who keep chickens and to chicken feed producers who use it as one of the core ingredients. Before selling the *pumba* is spread on tarpaulins to dry outside the mill that Enjo use.

The company, Chapa Asili, who sell maize to Mangi's *Duka*, slightly further away from Mama Lina, have their own mill used only for their *sembe*. They also have a 3-ton truck used for distributing to wholesalers, but it is still a family business run by a husband and wife with 11 staff. If they need maize, they call Maureen, or another trader (there are three they regularly buy from) and she can have a truck load of maize in Dar es Salaam the following day. They mill enough maize to be able to buy a 30-ton truck load themselves.

Chapa Asili deliver to, among other places, a wholesaler called Martha and Mary Wholesaler (M&M) in Kinondoni that supplies the *dukas* near where Mama Lina lives and other areas. The wholesaler is in a neat building with trees planted around it on the corner of two side streets. It is bigger than Mama Malia's wholesaler, the front shop area is about six or seven metres across. Martha and Mary are the daughters of the owners of the shop. Mama Martha is always sitting on a stool at the counter running across the front of the shop,

the customers stand under the generous overhang of the roof, shaded by the roof and the trees. The husband of Mama Martha is sometimes out collecting stock or moving around overseeing the packing for customers. There is an assistant to Mama Martha in the shop area dealing with customers and several young men who are employed to fetch stock from the store rooms behind the shop and load the goods for customers. The customers arrive with cars, pick-ups, motorbikes, *mkokoteni* and the three wheel *gotas*.

The couple who own the shop came to Tanzania from Kenya in 1996. They started their wholesale business in 1999 and before that ran a small *duka*. They moved to the current building when they expanded in 2005. They never borrowed money, aside from getting some stock on short-term credit. Mama Martha explains that “we got profit little by little, we budgeted and added bit by bit”. They also do not advertise, people hear about them through word of mouth, “a customer tells another customer, who tells another customer. They tell their friends, they tell others” said Mama Martha. Martha and Mary themselves are now studying. Martha completing high-school in a boarding school and Mary is at University.

The owner of Chapa Asili arranges delivery of *sembe* to the shop and often comes himself as well. Mama Martha says she they know him well and have been buying from him since they started the business.

Often when Enjo buy maize they cannot fill a truck themselves, even the smaller ten-ton trucks they frequently have maize delivered on, and they then share a truck load of maize with other *sembe* traders. These arrangements are made with the other traders using the same mill as Enjo. The Enjo sisters are often sitting chatting with their fellow traders on a low wall in the shade of a tree outside the mill. The arrangements are made verbally and the transactions concluded with cash payments or in some cases, where the seller is far away, a bank or cell-phone based cash transfer.

In the Kinondoni District of Dar es Salaam the Tanzania Revenue Authorities (TRA) have registered 792 grain millers. They estimate that there are a similar number in the other two districts of Dar es Salaam, so over 2,000 millers in the city. Many of these serve a number of different *sembe* suppliers, like Enjo, it has proved difficult to confirm exactly how many *sembe* companies and brands there are, but certainly it is some multiples of the number of mills. Visits to ten maize millers in the city and interviews with people in the industry confirmed the high prevalence of mills and *sembe* dealers such as the ones described here. There are some concentrations of mills, such as around Manzese, but they are also scattered across the city.

### **6.2.3. Producers’ perspectives**

#### **Daniel**

Over 300 kms from Dar es Salaam in the village of Zombo, in Morogoro Region, Daniel in his early 30s and his wife, assisted at times by casual labourers, work six acres of land. Daniel was born in the village, he is ethnically Msagara and started farming on his parent’s

land in the village, learning from them since he was young. Although Daniel does not when asked identify learning from other *wakulima*, one can observe that in the fields he both looks at what others are doing and talks to the *wakulima* ploughing neighbouring fields. Socially he spends almost all his time with fellow *wakulima* from the same village and conversation includes farming as well as trading. This form of learning through exchange of information and from example of others is generally taken for granted, but is clearly valuable.

Daniel now has four acres (just over 1.6 hectares) of his own land that he got through requesting it from the village council. This is just a little more than the average of 1.3 hectares of land that farming households have in Tanzania (National Bureau of Statistics, 2012a; The World Bank, 2012). Daniel rents the other two acres from other land owners in the village. Maize is the dominant staple crop in Tanzania and it is grown “almost exclusively by small-scale farmers” (SAGCOT, Undated: 32). In 2014, the rain was not good, but Daniel got 20 sacks (approximately 126 kilos each) of maize. This 2.5 tons of maize harvested amounted to a yield of 1.5 tons per hectare, which is in line with the average yields in the region and country. He sold 12 sacks of maize for cash to a trader who came to the village from Dar es Salaam.

Many other farmers in Zombo and other villages sell in the same way. The trader comes to the village and finds a local person, normally a *wakulima* themselves, to act as a *dalali* (agent), who goes around the village identifying and collecting maize that *wakulima* have to sell (Photograph 11). When enough is collected, the trader comes back to get it. Almost all the traders travel on public transport and they buy quantities of between 20 and 80 sacks of maize, roughly three to ten tons. Thus, their scale and mode of operation is not very different from that of the *wakulima*.

In terms of yield and land size, Daniel is fairly typical of maize farmers in Tanzania and certainly typical of other farmers in Zombo who were found to be selling maize to Dar es Salaam. He also grew rice and sesame, most of that on the rented land, which was in the valley with better water. Sesame is an important cash crop in Zombo and is almost all sold. Interestingly, Daniel and other *wakulima* who grow sesame often organise together to jointly hire a truck when they have enough sesame and they go themselves to Dar es Salaam to sell it. They are aware of the possibility to sell directly in the city and have done so. Daniel has used his trips to Dar es Salaam to check the maize markets and prices and he says he has a friend at a market in Dar es Salaam who he sometimes calls to check on prices. At the end of the day Daniel and other *wakulima* are making an informed decision to sell to the maize traders who come to the village, rather than selling more directly.

We can see from the above important features of the symbiotic food system that permeate beyond the farming to the nature of trading, processing and retail operations. There is learning from others, in this case family and then friends, friends who from an orthodox economics perspective are competitors as maize producers and sellers. The barriers to entry

into one's own production are low given availability of land (for now) and the ability to start production and selling on a small scale, such as selling just 12 sacks of maize. There is a reasonably equitable fit in the scale of operations of the *wakulima* and the traders they sell to. There is collaboration that happens without contracts or formal structures, including in the joint transporting and selling of produce.

### **Sakina**

Sakina, in her early 40s, is from Kilombero and is ethnically Mgindo. She has two children, a 16-year old daughter at boarding school in Morogoro and a 20-year old son who has finished college and is in Dar es Salaam and at the time had been looking for work for almost a year. Sakina and her husband have six acres of land that they bought from other residents of Zombo. In 2014 she planted 2 acres of maize and got 14 sacks in one harvest and about nine in a second harvest. They get casual labourers to assist in labour intensive activities such as weeding and harvesting. Some of the maize is used by the family, some selected for replanting and she sold 18 sacks to a trader from Dar es Salaam who came with a local *dalali*. She also eats and sells the rice paddy that she grows. In 2015 she had only harvested five sacks of rice paddy from one acre as the rain came late. She sold mostly to local people who husk at the machine in the village and use for their own consumption. Sakina also grows beans, sesame and vegetables for home use. She and her husband, along with five other *wakulima*, hired a truck from the one person in the village who owns a truck, to take their sesame to Dar es Salaam to sell.

This bit of information on Sakina shows a common pattern with that of Daniel. The home consumption as well as seed selection and reusing is also common across the *wakulima* spoken to. They are enhancing non-commoditised circuits of production and consumption that increase autonomy in relation to the agro-industrial food system and its farm inputs (Van der Ploeg, 2008). The availability of milling and husking machines in the village also facilitates people milling their own or bought grains, also avoiding any corporate involvement in that part of their food provisioning.

Sakina's story also brings out a common occurrence of *wakulima* moving between different rural areas, a phenomenon that is common in Tanzania and is less written about by studies of migration that tend to focus on urban rural migration patterns. Such migration likely facilitates growth in agricultural production as it enables those who want to and are able to produce to use the available land. Coming from outside the village Sakina and her husband have not inherited land and because all land has been allocated already, they had to buy land. Yet, the cost of land remains low enough to have enabled them to do so.

### **Fanana**

Fanana is forty years old and has three children. He is from Njombe about 600 kms away and from the Bena ethnic group. His parents are also from Njombe and although they came to Zombo when Fanana was young they sent him to attend school in Njombe. Fanana grew

up farming with his father who is still alive and farming on ten acres of land on the edge of the village. Fanana visits his father on a regular basis and still works with his father at times as became clear when he showed me around his father's fields.

Fanana has two acres of land and rents two more acres from another land owner. The main crops he and his wife grow are maize, sesame and beans. They get two harvests per year of maize from the valley land that is not far from water (Photograph 10). Fanana reuses seeds for several years and buys from a supply shop in Kilosa when he needs seeds or other inputs. He has experimented with different maize seeds and uses some pesticides when required, but no chemical fertiliser. Last year they harvested 29 sacks of maize and sold 25 to traders from Dar es Salaam. If he does not have many sacks of sesame, he sells to someone locally. When he has had a good harvest in the past he has gone with Daniel to Dar es Salaam to sell.

We see here a similar pattern of learning, production and selling to the other *wakulima*. A new dimension of land acquisition is land rental, which is being done by many *wakulima* in Zombo and other villages where there is good production potential. This enables those willing to produce to access the land and gives some benefits to the land rights holders.



**Photograph 10 - Fanana in his maize fields planted at different times.**

### **Sumrah**

Sumrah is the largest land holder in Zombo and owns the only tractor in the village. He inherited the over 100 acres of land from his parents. He is of mixed Arab and African decent and was born in Kilosa, although he says his parents are from Zombo and he sees himself as a native of the village. He uses about 50-60 acres of land for his own production and rents out other land to local farmers. In 2014 he harvested 130 sacks of maize and sold

160 sacks in Dar es Salaam. He hired trucks and took the maize to Dar es Salaam himself, where he sold it to a mill. The sale was arranged through a *dalali*. This year, 2015, he only got 16 sacks of maize due to the poor rainfall and he has lost money. "Farming is a hazard, I want to farm with certainty, but to depend on the rain falling on a particular day [he shakes his head], the weather has changed a lot" said Sumrah. He also grows rice and beans and harvested 40 sacks of rice in 2015.

Sumrah uses the tractor to plough his own land and rents it out for ploughing the fields of other *wakulima*. Sumrah lives on his land a little way outside the main village. He explained that during the villagization programme that took place in the 1970s all the other families were moved into the village, but his family was allowed to stay on their land as it was a large enough farm. It is worth noting that this privileging of the larger farmers during villagization was probably not common. Bryceson notes that 'kulaks' had to leave their homes during villagization in the 1970s (Bryceson, 1987: 183). On the other hand Mbilinyi has found that during farmer support programmes in the 1970s and early 1980s "[r]ich peasants and small capitalists received more credit than others at the local level" (Mbilinyi, 1994: 171). In this case Sumrah was again assisted by the government when the tractor was supplied to him through the SUMA-JKT (Shirika la Uzalishaji Mali - Jeshi la Kujenga Taifa, which is the organisation for production of the national services). They imported tractors to encourage an increase in agricultural production and supplied this one to Sumrah based on a 30% payment upfront and a loan at concessional interest rates which is being paid off in instalments made every six months.

It is telling that the most direct state assistance to any *wakulima* that I found in Zombo, went to the single largest land owner and *wakulima*. The scale of Sumrah's operation allows him to sell his maize directly to Dar es Salaam, thus bypassing the *dalalis* and traders and also bypassing the collaboration with other *wakulima*. His farming is as vulnerable to weather and other factors as any and his production seems to be no more reliable a source of maize for Dar es Salaam than that of the other smaller *wakulima*. That his larger scale production, even with state subsidised tractor, is not more effective than other *wakulima* is also indicated by his renting of much of his land to others.

#### **6.2.4. Producers who are not suppliers to Dar es Salaam**

Most of this study focusses on the actors within the food system that feeds Dar es Salaam, but an important perspective on the food system is the actors, especially *wakulima*, who are not supplying Dar es Salaam. Particular attention was given to exploring this in the village of Zombo where maize and rice that finds its way to Dar es Salaam is produced. Those who do not contribute to this supply overlapped with people in greater poverty within the village enabling some analysis of differentiation and the reasons for it within this agrarian setting. The other question that emerges is the prognosis going forward for further exclusion and differentiation. The disappearance of publicly held land and climate change were two

factors that stood out as having a significant impact with potential for greater impact in the future.

### **Hafsa**

Hafsa is close to seventy years old, she does not know exactly when she was born. She is from the Mgindo ethnic group and was born in the coastal region of Lindi some 700 kms to the south-east of Zombo. Hafsa considers herself to be a native (mwenyeji) of Zombo where she has now lived for most of her life and where her children were born and grew up. Her husband passed away years ago and she now lives with an old man in a small one room house that is half fallen down and covered in plastic sheeting to keep out the rain. She speaks rather disparagingly of her companion: "what can I do?" she asks with a shrug when mentioning him. They survive from farming on the acre of land that belongs to Hafsa and the acre of land the old man has. They do not sell produce, as Hafsa explains, "I farm a little, just a little...I am not farming to get money, what will I sell? [she shakes her head] I can't". Hafsa has one son who is in the army and he sends her money sometimes and is helping to build her a better house.

The acre of land that Hafsa has is up the hill, not in the valley where the land is fertile and there is more water. "The field is there, but I don't farm like others here, I am old these days, don't you see, I plough because I depend on myself alone, what will I eat?" She also cannot rent out the land up the hill; "there in the mountain, who will rent?" she says.

"In the past I farmed and my husband, who was taken by God, he farmed, we got harvest and ate. We got good harvests in those days" Hafsa said with some enthusiasm. She attributes the change in her fortunes to two main things. One is her age and poor health that has reduced her strength, she has been sick, including getting malaria. The other change is the weather conditions. She explains how the sun is too hot and just kills the maize and the rain is unreliable; "in the past the rain used to really fall here, but these years it has changed".

### **Kafil**

Kafil came to Zombo in 2012, just over three years before he was interviewed. He and his wife came from Tabora Region, about 650 kms away to the north-west. He is, however, originally from Kigoma region and is of the Ha ethnic group. He went to Tabora with his family as a child. He has three children, all of them grown up and living in different places; Mwanza, Tabora and Dar es Salaam. Kafil and his wife live in a small mud house with a roof of reeds and grass that is too low for him to be able to stand up straight inside.

Asked why he moved to Zombo, Kafil said "Mr, in our place the sun is very harsh". The big benefit he notes, about farming in Zombo, is that in good years you can get two harvests, "here the sun is strong, but there is a bit of profit. I can plough and return again... Here I get enough, I plant I get food". He was told about Zombo by a neighbour in Tabora and he sold his house and land, close to six acres, and used the money for transport to get to Zombo.

Asked again why he would give up land in Tabora, when he has none here, Kafil explained further that the reason was “drought, harsh sun, you plough and get nothing, there if you have input and fertiliser you can get maize, without fertiliser there is nothing to eat, there to farm you need to first borrow to get fertiliser”.

In Zombo, Kafil does not own any land, but he has borrowed a few acres of land on the hillside from a resident of Zombo who Kafil says “is just helping me. I did not pay”. He was also given some seeds by another person and he currently grows maize, beans and peas as well as vegetables. He eats most of what he grows, but also sold some maize and beans last year in order to be able to buy a few things he needed. He sold to local people by the bucket, he does not have enough to sell to traders as he harvested only 5 sacks of maize last year. His other source of livelihood is working as a casual labourer in other people’s fields. He earns TSh 40,000 (\$ 24.24) for weeding an acre of land and TSh 45,000 (\$ 27.27) for ploughing one acre by hand with a hoe. It takes him about six days to weed an acre; “I am an old man, slowly slowly” he explains. It takes him more time to plough an acre; up to 10 days. Kafil’s wife also helps him with the work in the fields, although she is not very healthy so is often at home.

Kafil aims to get land in the valley; “land in the valley, has bigger profits”. He says that with TSh 100,000 (\$ 60.60) he could rent and plough land in the valley. With more harvest, he would sell to traders that come to the village to buy from *wakulima*, then, with the profits he says he will be able to secure his own land. “For us *wakulima* if you don’t have a farm that is poverty number one. You will be poor to the end. If you have a farm you have progress”. For now, Kafil does not have that money to rent better land so he ploughs on the hill for free.

While, Kafil is still struggling to establish his farming, we see the assistance from others playing an important role along with low barriers to starting his own production. Increasing land pressures will make this more difficult. For him labouring on other people’s land is not only a means of survival, he is using that income and the collaboration with other *wakulima*, including the land owners, to establish himself. Provided he manages to do so, a classic class analysis will not be relevant and this is not an isolated case. Most of those labouring on other people’s land also had land themselves.

### **Busara**

Busara is ethnically Msagara and was born and lived her whole life in Zombo. She has eight children, seven daughters and one son, most have grown up and moved out. She now lives in a two-room mud house with three of her children and three grandchildren. Her husband passed away in 1998 (17 years before the interview), she said he had TB.

The family survive through Busara and some of her daughters doing casual work on other people’s land. They get paid TSh 20,000 (\$ 12.12) per half hectare for weeding or ploughing. Busara sometimes rents an acre or two of land to grow crops for herself, but not this year, “If

God helps I will rent land” she said. With no production of their own this year and only limited production on rented land in the past, Busara and her family do not even consider selling grains to traders. But it has not always been like this. “Long ago I had land, just problems, it reduced and reduced” Busara said. She told me how she used to have three acres of land that she inherited from her father. Her husband also had four acres of land that he inherited from his parents.

It took some time and discussion before Busara explained in more depth what happened to the land. She said “the old man [her husband], by himself, he sold the fields. It was his life. Then he sold the fields”. Busara related how he drank and liked to enjoy a lot and said; “I would ask him why [he sold the land] and he would say “I have my issues””. Busara continued to elaborate “It was his enjoyment only, he enjoyed, you see, a lot of pleasure, he was a man”. Then he became sick and passed away, by the time he needed medical attention the land was already gone. Now Busara says “If I get money I will buy land to own myself”, but for now there is no money for such an investment.

Unequal gender power relations allowed an apparently irresponsible husband to squander the land that the family depended on. Unlike with Kafil, mentioned above, it seems that Busara and her daughters are stuck as labourers on other’s land, still relying on this for income more than 17 years after the family’s land was lost. This indicates the need for interventions both to protect the land and livelihoods of women and to enable people to break out of the poverty trap that some fall into.

#### **6.2.5. Producers in other areas**

##### **Ezekiel**

In the village of Kitaita Ezekiel grows maize alongside beans and livestock keeping on 20 acres of land (much drier land than in Zombo). Ezekiel moved to Kitaita in the year 2000 from a village about 30 kms away. He was looking for more land and was allocated ten acres by the Kitaita Village Council. He bought the other ten acres from someone else in the village in 2006 as the village had no land left to allocate. In 2015 he harvested 26 sacks of maize and sold 16 sacks for cash to a trader who collected it from his house.

Ezekiel also keeps cattle (as referred to in section 5.3.4.) and goats. He employs casual labourers for some of the planting, weeding and harvesting and also has a worker who lives with him assisting with general tasks and with looking after the livestock along with Ezekiel’s sons. This worker is from a poorer farming family and is not paid much, but is accommodated and fed by Ezekiel and importantly learning as well.

Ezekiel uses manure on his land, but doesn’t have enough to cover it all. He does not use any chemical fertiliser. Ezekiel uses different maize seeds, hedging his planting investment by combining those that he says will give more return if the rainfall is good with those that will survive and at least give some return if there is little rain. He and his wife are careful in selecting the best seeds for replanting. I observed how they swapped seeds with neighbours

assisting their neighbours with the better-quality seed for planting, which they had plenty of, in exchange for lower quality grain that would be fine for milling and eating. The neighbours got better seeds and Ezekiel saw no loss for himself as he still had the same amount of maize to sell or mill.

Near to where Ezekiel stays a *wakulima*, Jonathon who is from a village about 70 kms away, rents 20 acres of land. Ezekiel helped to arrange the renting of the land for Jonathon who contacted him through a friend. Jonathon planted maize, but in 2015 made a loss due to poor weather, he will try again in 2016.



**Photograph 11 - Trader buying half a sack of maize from a woman farmer in Kiteto District.**

The trader who bought the maize from Ezekiel lives in the same village, although he moved there from Dodoma region looking for land as he said “there is no fertility there [Dodoma Region], the fields, without a doubt, have no fertility”. He is worried that the same thing will happen around Kitaita if people do not improve farming practices. He is from a farming family and continues to farm for himself mostly on rented land. In 2014 he was renting 280 acres of land in the Kiteto District of Manyara Region, but crops were destroyed in conflicts between farmers and pastoralists. He is not renting this year. He buys maize from *wakulima* in the area until he can fill a truck and then sends it on the 360-km journey to Dar es Salaam. In 2015 he was sending 18-ton loads direct to Dar es Salaam. This size truck is a pragmatic compromise. Smaller trucks are less viable in terms of the costs of transport per ton, but the larger *semi* would first of all not get down the bad road to the village and would also cost the trader too much to fill. This trader used to collect maize and sell it at the market in

Kibaigwa, about 70 kms away, now with the ability to buy more and the contacts in Dar es Salaam, he sends it directly.

We see the mobility, land availability to buy and rent as well as the trading system working, in that Ezekiel got land, produces and sells to a local trader who gets it to Dar es Salaam. As with the *wakulima* in Zombo, Ezekiel is employing labour as well as using his own and family labour. Based on Ezekiel and other farmers of a similar scale there is a consistent supply of maize from the area. In other areas, however, especially when much larger amounts of land are at stake, the nature of mobility and accumulation by some is leading to conflicts and unreliable production.

### **Mwamba**

Mwamba is a *wakulima* living about 500 metres away from Ezekiel in Kitaita. The two mud houses with grass rooves that he, his wife and three children live in, as well as the nearby cattle kraal, are all unusually neat and well kept. Mwamba is in his early thirties and visibly muscular and fit. He is from a farming family in a village about 20 kms away and moved to Kitaita as a young man in 1999. He said he came to Kitaita to change his life because of the fertile soil. He was allocated land by the Village Council and has worked to clear the land and produce. Asked where he got capital from to start production Mwamba said “it was just me, myself, I went myself when there was work to be done”. He does not use any fertiliser or pesticides, but does spread some of his cow manure on the fields, which helps, “I can see the difference in the maize where I put manure, and even the following year the maize grows better there”. Now Mwamba has 20 acres that he works with his wife and children and he uses his cattle to plough. He also hires casual labourers to help when he has the money. They grow maize, beans and sunflower and also keep livestock. Maize is the most important crop and in 2014 he harvested 40 sacks of maize and sold 20 to two different traders that came to his house to buy from him.

Mwamba explained that “the big big problem in farming, the one that is troubling us, you can have a goal, this year is an example, I farmed a lot to get, maybe, a lot of maize. Now rain, the rain did not come. This is not an issue of irrigation; I depend on the rain”. He continued to say that “now it has changed, it is different from the past. When it rained, it used to rain across the whole country, now it rains only in places. It can rain here, but not by this guy up the hill [nodding to Ezekiel who lives 500 metres away]”.

The low barriers to entry and passing on of farming knowledge have enabled Mwamba, like many others, to get into effective production. The availability of traders buying at his scale of production and competing with each other is enabling him to get an important cash income for his maize. Climate changes are, however, a serious threat along with loss of soil fertility.

## **Masopakyindi**

Masopakyindi is another *wakulima* in Kitaita. Like Mwamba he is married and has three children, but his small house is not well kept and he says he is “suffering in farming”. Asked why, he said because he does not have capital and has only three acres of land. The result he said is that “I only farm to get food for use at home, I have nothing to sell to get money to buy clothes, to buy a goat, all the maize stays for food, so I can’t move forward here, I cannot take a step”. He had managed to sell ten sacks of maize last year (2014), but he said “this year I have failed for sure, I only got [harvested] four sacks”. His hope for improving his life is if he can get some money; “I will rent land, maybe eight, or even five acres, then I will farm, but if it is like this year [with an air of resignation in his voice and slump of his shoulders], the sun has hit very hard, lots of maize died, lots of maize has died”. Asked about other opportunities to earn money he said that there is work available, like packing maize for traders and clearing trees on land people want to farm, but he said “I cannot do that work, because my body hurts. If I do hard work I get sick”.

The reason Masopakyindi seems unable to follow the same path to progress that Mwamba has followed, is primarily due to health. Health issues have reduced his ability to effectively work his own land and to take on other work that would enable him to rent or buy more land or invest more in improved production on the land he has. Improved health services and less physically demanding economic activities will clearly be important for some people, including the aged such as Hafsa from Zombo.

## **Godfrey**

Godfrey farms maize on 20 acres of land in Kiteto district. On the day I first met him, he had travelled all night on a tractor to deliver 6.6 tons of maize to Kibaigwa Market (described in Chapter Five) in Kongwa District. Almost a ton of maize on the tractor belonged to a woman *wakulima* from the same village and the rest was Godfrey’s. The tractor had also carried sacks of sunflower seeds that three farmers were selling in Kibaigwa and a plough that needed to be repaired. It did not take Godfrey long to find a buyer and sell the maize at the busy Kibaigwa Market.

I share this brief paragraph on Godfrey to illustrate another market route that some farmers use, which is direct access to a regional market. It is also another example of *wakulima* collaboration in marketing their produce. Different forms of sharing and mutually beneficial collaborations are ubiquitous among *wakulima*. I believe these practices have permeated other parts of the symbiotic food system.

### **6.2.6. Maize traders and transporters at Kibaigwa Market**

#### **Faizah**

“The road to Mariti is bad” Faizah told me. She had arrived in Kibaigwa at noon the day before after an early start and seven and a half hours traveling from Mariti village, in Kiteto District, on a Suzuki pick up she had hired to bring ten sacks of maize (about 1,260 kilos) to

the market. During the maize harvesting season, she goes three or four times a month to Mariti, where she has contacts, to buy maize. She has in the past done the journey with maize on ox carts, taking two long days. She bought the maize from four different *wakulima* paying them TSh 50,000 (\$ 30.30) per sack of approximately 126 kilos each. She sold soon after arriving in Kibaigwa for TSh 510 (\$ 0.31) per kilo for a gross margin of approximately TSh 114 (\$ 0.07) per kilo and a total gross margin for that trip of about TSh 143,600 (\$ 87.03). Her transport and tax expenses came to around TSh 65,000 (\$ 39.39) for a profit of approximately TSh 78,600 (\$ 48) before paying other incidental expenses such as food, accommodation and bribes.

Faizah lives in Kibaigwa and has four children. She and her husband farm on rented land. They have grown maize on about 10 acres for the last years. In 2015 they only got five sacks of maize due to the poor weather. In 2014 they did much better, harvesting 50 sacks and in 2013 they got 45 sacks of maize. They keep some maize for eating at home, some for replanting and they sell the rest. She said she only uses cow manure and has no other inputs in the farming. She also grows beans, sunflower and peanuts. The maize trading brings in extra cash and in addition to buying in Mariti, she sometimes also buys and sells at the Kibaigwa Market, if she sees an opportunity.

We see here that the scale of the trader's operation can fit with some of the smallest scale *wakulima*. There is also an overlap between *wakulima* and traders, with Faizah, like many other traders, also farming. This challenges common assumptions about the exploitation of farmers by traders.

### **Mama Jane**

Mama Jane sits under a tree with several other women in Kibaigwa Market (Photograph 12) buying maize in amounts from 20 kilos up to several tons. *Wakulima* and small local traders come with sacks on bicycles, in push carts and ox carts. On a busy day, Mama Jane buys from up to 150 different sellers. She arranges to pack the maize into standard sacks, and when business is good, she sends two 30-ton truck loads a week on the 340-km journey to Dar es Salaam. There are a number of other buyers of maize in the same part of the market as Mama Jane, all of whom are buying the smaller quantities, which are being weighed on a manual scale operated by the market. The traders, like Mama Jane, play a key role in bulking the small amounts to make up larger quantities that can be sent to Dar es Salaam or sold to other traders who are bulking at a larger scale. There are frequent collaborations between these small traders, such as when for example Jane has an order to fill urgently and she gets maize from other small traders to fill the truck and make the delivery. The next day, it may be the other trader who needs the assistance from Jane to meet a large order.

### **Maureen**

Maureen, who is a regular supplier to Chapa Asili (mentioned above), sits chatting with other traders on a bench near the gate through which maize arrives. She is wearing a red sun

hat, sun glasses and a scarf covering her mouth and nose to keep out maize dust (Photograph 12). There are approximately 50 such traders who are regular buyers at the Kibaigwa Market. These traders do not buy from the very small sellers like Mama Jane does; instead, they buy from the bigger sellers, like Godfrey, who come with at least a few tons of maize, mostly with tractors or Fuso trucks. These get weighed on the computerized weigh-bridge. A trader like Maureen still needs to buy from several sellers to fill orders and trucks. Sometimes, if she needs to make up a load, she will buy from other traders, and often, they share a truck to get their respective loads to Dar es Salaam. These traders spend many days sitting together and chatting and often have lunch together; some meet up for drinks or dinner later in the many eating places around Kibaigwa. They are also competitors; they are all trying to buy maize; they all need to find buyers and most of those buyers are in Dar es Salaam. As one of the traders put it; “we are competitors and friends, we apologize when beating someone in a business deal and also help each other”.



**Photograph 12 - Maize traders at Kibaigwa Market.**

### **Sabiha**

Sabiha is sitting near the gate with other traders, but unlike them she is not buying maize to sell on to the *sembe* distributors, she wants ten tons that she will mill herself and distribute under her own brand. Sabiha sometimes buys maize in Dar es Salaam, but says “it is expensive there now, I thought it is better to come to Kibaigwa directly”. She is in partnership with the younger brother of her husband, they mill at another person’s machine in Tandale, paying per ton for the milling and also hiring a truck to distribute the *sembe*.

Sabiha is 29 years old and has two children, she is Chagga from the Kilimanjaro Region and came to Dar es Salaam in 2006. She has been in the maize business for the past six years. “I used to be a housewife and sell *vitumbua*” she says, “then I met a friend at one of the maize

machines, the friend called me to learn and I started small, selling small". The friend who advised her is not a relative and is ethnically Nyakyusa and from Iringa Region.

As she only needs ten tons Sabiha will share a truck with other traders. This will be organised by the transport *dalali* who she says she has known for a long time now. She thinks the cost of transport to Dar es Salaam will be between TSh 19,000 (\$ 11.52) to TSh 20,000 (\$ 12.12) per ton of maize. Sabiha had arrived in Kibaigwa by bus late one night, stayed in a guest house that costs TSh 5,000 (\$ 3.03) per night, two days later she had secured the maize she needed and returned to Dar es Salaam with the maize truck.

### **Akida**

Akida is a local trader from Mbande village in Kiteto and buys maize from *wakulima* to bring to Kibaigwa. He is in his late 30s and an Mgogo who came to Mbande in 1999 from Dodoma Region. He started out farming and continues to farm. He began trading mostly in maize in 2012. He also trades in sunflower seeds and goats. He buys the goats from Masai livestock keepers and sells them to traders from Dar es Salaam.

Akida has seven acres of land where he grows maize and sunflowers. He says he does not grow beans because the cattle like them so much. Some years he rents additional acres, for example in 2013 and 2014 he rented an additional five acres of land, but with a very bad harvest in 2014 he lost money and did not rent again in 2015. 2014 was also a time of land conflicts that led to crop destruction, but Akida did not mention that. He used capital from the sale of crops to get into trading and from a small start has built it up into a bigger business.

### **Collecting maize**

One morning I went with a truck that Akida had hired to collect his maize and transport it to Kibaigwa. The driver, Simon, is in his late twenties and his assistant, Saidi, is younger. The owner of the truck is from Bagamoyo on the coast. As well as providing transport he also does some trading in rice and beans. He has six trucks, Toyota Canters and Mitsubishi Fusos with carrying capacities from two to ten tons each. He normally sends four trucks to work around Kibaigwa during the busy periods for grain harvesting. Simon and Saidi stay in a cheap guest house when in Kibaigwa. Their main work is collecting maize from villages for traders and *wakulima*. Simon arranges with the clients and collects the payments, all in cash, when the grain is delivered to the market. They get paid for the transport after the trader has sold the grain that was transported. Simon and Saidi get paid according to the amount of work done. They take money for expenses, such as petrol, truck repairs, food and accommodation from the income they get from the truck. They send some money every week to the truck owner by cell-phone based money transfer. On the day I was with them we left just before sunrise, it was a cold morning, the wind chilling us as it rushed in through the truck windows that did not close.

The drive from Kibaigwa to Mbande took more than two hours on gravel roads and it was slower on the way back with a full load. After getting to Mbande we went to *wakulima* in the area to pick up maize and sunflower that Akida had agreed to buy. The Masai have the longest history in the area and have traditionally relied on mobile pastoralist livestock keeping, but now many also farm crops. Two of the *wakulima* that Akida collected from on the morning I was with him were Masai. Another *wakulima* was from the neighbouring district of Babati and had been in Kiteto for two years. Another supplier was a *wakulima* from Kalema on the shores of Lake Tanganyika who had at that point been in Kiteto for five years. There are people from a range of areas and ethnicities living and farming in the area and others that come from outside the area to farm, such as the trader and farmer I had met in Kitaita. Akida explains that all the land in the area has been allocated; “right now there is no land, not a bit of it... you can only get from a private person”. He also believes a lot of the land is owned by a small number of rich people from outside the area, from places like Kibaigwa and Dodoma.

Back at Mbande the truck was loaded with maize that Akida had already collected and piled outside his house (Photograph 13). He bought some more from people nearby and as we were loading people brought additional sacks or even half sacks. All of them were paid cash (between TSh 49,000 (\$ 29.70) and 55,000 (\$ 33.33) per sack that is estimated to weigh 126 kilos) based on the number of buckets (*debe*) or by an estimation of the size of the sack. Akida will later sell in in Kibaigwa by weight and therefore carries the risk of incorrectly estimating the volumes and weights that he is buying. The total grains transported, according to the weighbridge in Kibaigwa, was 3,760 kilos of maize and 818 kilos of sunflower for a total load of 4,578 kilos plus eight people traveling on the truck which was a ‘2-ton’ Toyota Canter. Not surprisingly, the clutch started to give problems on the return journey and then gave up completely just as we arrived in the Kibaigwa Market. It was, however, quickly fixed with Saidi disappearing under the truck and coming out covered in oil and grime, but the truck moving again.

The first tax was paid in the sub-village where we went to collect maize and sunflower, the next on the larger road when the truck was full. Further tax collection points were passed by showing the receipt for what was already paid. The third tax payment was in the market when the grains were sold. There was also a bribe of TSh 1,500 (just under \$ 1) paid to a traffic policeman to avoid the delay he could have caused. The tax on the road was based on Akida’s deliberate under estimation of how many sacks they were carrying, it is hard of course to accurately count all sacks without unloading the truck and most of the maize was piled loose. The weighing at Kibaigwa revealed that the declared size of the load and tax paid was about 75% of what it should have been. The tax at Kibaigwa was based on weight so there was no ‘discount’ there.

When the truck arrived outside the gate to Kibaigwa Market it was approached by a number of *dalalis* checking the load and trying to secure the purchase for buyers they had lined up. On the journey Akida had discussed with the driver about the prices at the market and he

had decided on the minimum that he would sell for, which for maize was TSh 515 (\$ 0.31) per kilo. This price instruction was given to his assistants traveling on the back of the truck. Akida left the discussion with the *dalalis* to his assistants, remaining in the cab of the truck. A buyer was secured at TSh 520 (\$ 0.32) per kilo before the truck had come to a stop in the market. Even when the deal was finalised with the exchange and counting of bundles of cash, Akida was sitting some distance away, his assistants bringing him the money after counting (Photograph 13).



**Photograph 13 - Collecting maize in Mbande (on the left) and finalising the sale in Kibaiywa by counting the cash.**

Akida paid between TSh 388.89 (\$ 0.24) and 436.51 (\$ 0.26) per Kilo assuming the debe of maize was the expected 18-kg and the sacks were 126-kg. Thus, he got a gross margin of somewhere between about TSh 83 (\$ 0.05) and 131 (\$ 0.08) per kilo. The gap between these two reveals how big a change he can get in his profits if there is some over estimation of weight or slight difference in prices either at the buying or the selling end of the transaction. This was a good trip, the prices in the market where on an upward curve; he got more than he had targeted per kilo which was already more than the price of the day before. He was buying with an idea in mind of the prices the previous week when they were lower. On this trip, he took an overall gross surplus on the maize of around TSh 400,000 (\$ 242.00). Out of this he of course had to pay taxes, market fees, transport, the casual labourers who did the loading, his assistants and he has to get transport home again (he normally uses a bus). The transporters got a remarkably low TSh 148,000 (\$ 90) for the maize and the sunflower transporting. I say low given that they spent most of the day on this job, drove for more than two hours in each direction on bad roads and went around to different farms to collect sacks and they have to maintain and at some point replace the truck. It is little wonder that they overload the truck to maximise the capital investment and that the windows don't close and the other niceties like the heater do not work. Simon and Saidi earn their money not only in driving, but also in dealing with money and clients and as mechanics that keep the vehicle going.

## Getting the maize to Dar es Salaam

When a trader buying at Kibaigwa Market needs transport, they call a transport *dalali* working around the market. He (they are all men) finds and arranges transport, almost always a *semi* capable of carrying loads of 30-33 tons at a time, from many different companies they have contact with. Sometimes traders share trucks; the transport *dalalis* or the traders themselves arrange with a few other traders and the truck driver until the truck is full. Almost all the transport of grain from Kibaigwa to Dar es Salaam is done with *semis* going back to Dar es Salaam after dropping loads further along the same road. Most are coming from Rwanda and Burundi and some from Dodoma. If they did not have the maize to carry, they would go back empty to the suppliers and, most importantly, the harbour in Dar es Salaam to pick up another load to carry inland. There are a few big truck companies, but many are quite small. A truck that I travelled with turned out to be owned by a businessman and farmer from Kibaigwa who had four *semis*.

Getting the truck loaded and ready to go took hours and a range of actors (Photograph 14). The team of eight cargo porters did the core of the work, stacking the sacks carefully to ensure the balance across the different axles of the truck is correct and that they sit firmly with less chance of the load shifting on the way. The final stage of the loading involves a team that straps down the sacks of maize and ties on the tarpaulin. The ones fixing the tarpaulin on the truck I traveled with were a team of three young men. They work together as a team and are paid directly by the truck drivers or owners.



**Photograph 14 - Trucks being loaded with maize at Kibaigwa Market.**

Along the road, the truck has to navigate weigh stations, traffic police and tax collectors as well as the hazards of the road. While the truck is weighed at Kibaigwa one truck I travelled

with was still overweight on one axle due to a weight distribution problem in the suspension set up. A TSh 10,000 (\$6.10) bribe quickly resolved the problem. The tax receipts from Kibaigwa were shown to the tax inspectors on route to confirm tax had been paid. Because the tax paid at Kibaigwa is based on the weighing of the truck, it is not possible to get away with paying a lower tax through deliberate understating of the load, as was done by the truck bringing maize to Kibaigwa (as described above) and as done routinely by the transport *dalalis* arranging the rice transport from Ubaruku. This is good for tax collection, but may add a disincentive for people to use the Kibaigwa Market as they will not be able to get the tax 'discount' and in addition they have to pay the market fees. The market has to keep on providing a service that makes the expenses worthwhile. Traffic police stop the trucks along the road to inspect them. TSh 1,000 (\$0.61) or so normally allows the truck to carry on without the delay and possible fines involved in an inspection.

**Table 6 - Prices received by different actors per kilo of maize based on an average conversion of one kilo of whole maize to 0.75 kilos of sembe. This is a real scenario for maize going through Kibaigwa in July 2015.**

Actor and stage in the maize journey to Dar es Salaam		TSh Price per Kg of maize.	Gross % of retail price received by each actor.
1	To maize farmer (TSh 49,000 per sack)	389	43.2%
2	To local maize trader selling in Kibaigwa	520	14.6%
3	To Dar es Salaam Trader (most of the gross income goes to transport)	580	6.7%
4	<i>sembe</i> trader (they pay for milling. <i>sembe</i> at TSh 48,000 per 50 kg sack)	720	15.6%
5	Mangi selling to the eater at the <i>duka</i> ( <i>sembe</i> TSh 1,200)	900	20.0%
Nb: These are gross prices that occurred on some transactions. They will vary between trades and through the seasons as will the expenses that all actors incur.			

Many of the maize trucks head to Manzese when they arrive in Dar es Salaam. There are always dozens of trucks along the roads in the area. This is a key place where sellers, *dalalis* and buyers meet. Sometimes the buyer wants the maize delivered elsewhere and sometimes it is delivered to one of the many mills in Manzese. This is central point for the bulk maize trade but there are no services at all. No space made available specifically for the trucks, no toilet facilities provided for drivers and traders. The truck I travelled with arrived around 4 am in Manzese after an eight-hour journey from Kibaigwa. The driver phoned a *dalali* that the trader who owned the maize on the truck had given him the number for. The *dalali* instructed the driver where to wait. The unloading started around 6 am and was done by a team of 10 men. Each sack was lifted from the truck, weighed on manual scales and then packed in the store room of a mill. The total weight was calculated from the sum of the sacks. The *dalali* arranged the payment for the maize trader and the payment of the balance

owed for the transport. A transport deposit had been paid in Kibaigwa. It was almost 10am before the driver could finally leave, the truck unloaded and the payments made. I share some more experiences from this 'ride-along' in Chapter Nine.

The maize delivered to Dar es Salaam is then milled and distributed as *sembe* by the different *sembe* traders, as described above for Enjo and Chapa Asili. Table 6 shows the prices received by different actors in the maize trade based on specific transactions that went through the Kibaigwa Market in July 2015. All the prices are converted to the equivalent of one kilo unground maize for comparability. In this process the local trader carries the risk involved in the transition from a volume based measure when buying from the farmer to a weight based measure. The *sembe* trader in Dar es Salaam carries the risk involved in the conversion of whole grains into *sembe*, which typically results in a return of about 75 kilos of *sembe* from a 100-kg sack of maize. The profit margins, especially for the traders taking the maize to Dar es Salaam, are very low. The *wakulima* gets about 43% of the retail value of the maize. The figures shift slightly from one transaction to the next and due to different scenarios. When a trader sends maize straight to Dar es Salaam, such as the examples from Kitaita, they combine the gross income from rows two and three, when a *sembe* trader goes directly to Kibaigwa to buy maize, as Sabiha does; they combine the gross income from rows three and four. They are of course also taking more risks and having to do more organising for that extra share of the value.

### **6.3. Following the rice**

#### **6.3.1. Rice eaters and retailers**

Sharifa, introduced in Chapter Four, is ten years old. It is about 7pm, the sun has set and the limited light in the street comes from the windows and open doors of people's houses, she knocks on the gate of one of her neighbours and asks for a few shillings to buy some rice. Her father is not home from Kariakoo in the centre of Dar es Salaam where he has a small shop. Sharifa is given TSh 1,000 (\$ 0.61) by one of her neighbours. She goes to Mangi's Duka, sitting in a pool of its own light, about 50 metres away and buys rice to the value of TSh 1,000. The rice is scooped from a sack in the shop and weighed on scales. Mangi knows Sharifa and knows her family as do the other people in the street. There is nothing unusual or perceived as dangerous about a ten-year-old going to the shop on her own in the evening. She walks the short distance home where her mother immediately cooks the rice. The beans cooked with coconut are already prepared.

Mangi always has two sacks of rice at the *duka*, one more affordable (TSh 1,500 - \$ 0.91 - per kilo in July 2015), one of a better quality and a bit more expensive (TSh 1,700 - \$1.03 per kilo). He weighs and sells any quantity that customers want. The rice prices are consistently cheaper in the local shops than in the super markets, for example at that time the cheapest rice in the Nakumat was TSh 5,900 (\$ 3.58) for a 2-kg packet (they had no 1-Kg option at that time), so TSh 2,950 (\$ 1.79) for one kilo. Rice is also sold in the grain shops and markets, normally at a lower price than the *duka*. Any customer, with the means, can go to the

Mwananyamala market where Mangi goes on his motorbike to buy rice, but they may not get the same price that Mangi can negotiate as he is a regular and larger customer. Much of Mangi's profit margin is the discount that he can negotiate, meaning that the price Sharifa is paying for rice at his *duka* is not very different from the normal retail price she would pay even if she could get to the market. There are a number of other markets selling rice retail and wholesale across Dar es Salaam. There is also a supermarket within about 20 minutes' walk of where Sharifa lives, but she has never been inside it. That would not be a safe walk at night and she and her family know that for the food they eat, beans and rice being the most common dinner, the supermarket will not always sell the quantities they can afford at the times they have the money and, in any case, it would be more expensive.

At the Mwananyamala market Mangi buys from traders who have small stalls on which they set out their rice in little pyramids for the customers to see, feel and smell. Behind the stall the traders have sacks of rice piled up (Photograph 15). There is also a shared storage area where traders can store more rice if they need extra space. Mwananyamala market has about 30 rice traders, but also many other stalls selling different foods and around the edge of the main market areas are more shops. Other traders in all sorts of foods and other goods spread out down the road from the main market building.

There is a variety of rice of different types, prices and qualities available. The rice quality is associated with regions and with the quality of the husking, in particular how many wholegrains there are or how broken up the rice grains are. At Mwananyamala, customers walk in the spaces between the stalls, stop and talk to traders they know, looking at the rice and taking handfuls of it, watching it run through their fingers, sometimes smelling it (the aromatic rice is preferred and fetches a higher price) before deciding which rice to buy.

A big difference in the production process for rice compared to maize is that the rice husking is done close to the place of production, whereas the maize milling is done in the city. These differences are in part driven by the different physical qualities of the two grains. Maize stores and travels well when a whole grain, but as a flour has to be packed in better sacks and is more subject to damage from damp and also is not so easily cleaned. The rice remains very durable after husking and is easy to rinse before cooking. The large amount of chaff from rice and the difficulty of disposing of it also mitigates against the husking being done in town, whereas the *pumba* (maize bran) from the maize milling is easy to manage (less dusty) and has a ready market as feed for livestock such as cows and chickens that are widely kept in Dar es Salaam and surrounds.

Almost all the rice found at the Mwananyamala market comes from Mbarali District of Mbeya Region, some 800 kms away. With flat valley land and sufficient water for irrigation (Photograph 15), in an otherwise arid area, this is one of the most important sources of rice for Dar es Salaam. Other significant rice growing regions are Shinyanga, Morogoro, Mwanza, Tabora, Ruvuma and Rukwa (National Bureau of Statistics, 2012a). Rice from Mbarali and some of these other regions gets exported to neighbouring countries. The rice in

Mbarali Region is grown on land irrigated through traditional irrigations system and in three large irrigation schemes, each one of about 3,000 hectares, built by the Chinese Government in the 1970s. These were originally run as state farms and then in 2006 two of them were privatized and handed over to companies with the idea that they would be run as large commercial estates (Greco, 2015; Bräutigam and Tang, 2012). In practice *wakulima* have taken over and continued most of the production on these irrigation schemes during the state run era and continuing today, despite the corporate ownership. The over 3,000 hectares of the irrigation scheme in Ubaruku is largely used by small and medium-scale local farmers who rent the land on an annual basis from the company, Highland Estate, who obtained the land in 2006 through the contested privatization process (Greco, 2015). Highland Estate now only uses about 300 hectares of the land themselves.



Photograph 15 - Rice trader at Mwananyamala market in Dar es Salaam and on the right a rice field in Ubaruku with seedlings ready to be planted out.

Ubaruku is a vibrant town, restaurants, bars, bicycle shops, farm input shops, places to buy ploughs and farm implements and mills for husking rice paddy. Rice is the core business of the area and at the centre of that rice business are the rice milling machines (used to husk and sort the rice). There are rice mills throughout the small town, but of particular significance are seven large millers located together on the outside of the town (Photograph 16 and sub-section 5.3.3.). The mills were moved to this site a few years ago, when the municipality decided that the town was too congested and the milling operations, with their production of large amounts of chaff, were a health hazard. The move is working for the millers as well. They are expanding their mills and warehouses and there is more space for the large trucks that are collecting rice every day, most of them heading towards Dar es Salaam.

*Wakulima* and traders queue with their sacks of rice paddy (Photograph 16). Traders from elsewhere, almost all from Dar es Salaam, meet outside the machines with the local traders and *wakulima*. Tractors and power tillers pulling trailers bring in the rice paddy, *semis* are being loaded or waiting for their load before leaving to Dar es Salaam. The transport *dalalis* are following up traders and truckers. The buzz of activity is in stark contrast to the normally quiet environment around the large mill at the Highland Estate, which is only husking the rice paddy they have grown themselves.



**Photograph 16 - Local rice traders with sacks of rice queuing outside one of the rice mills in Ubaruku. And on the right traders keep a close eye on their rice and the machines inside the mill.**

Most of the mill owners are or were rice farmers, sometimes combined with other work or business, but the main business of their machines is husking rice for *wakulima* and traders. Some *wakulima* are much bigger than others, a few growing rice on several hundred acres, but none has become so dominant that they have their own milling or transport operation for their exclusive use. The mill owners have made considerable capital investments and all of them depend on the many *wakulima* in the area to keep their machines going and paid for.

### **6.3.2. Rice producers and traders**

#### **Lina**

Lina is in her early thirties, her parents are not from Ubaruku, but she grew up there. She farms rice and does a bit of rice trading as well. In 2015 she harvested 70 sacks of rice paddy from 3 acres (1.21 Ha) of land that she rents in the Highland Estate. That makes a harvest of approximately 7 tons for a yield of 5.78 tons a hectare. This is well above the average yield in Tanzania of 2.83 tons (FAOSTAT, 2016) and in the range of average yields for rice production on irrigated land (SAGCOT, Undated). She rents the estate land for TSh 825,000 (\$ 500) per season. She also has to pay for a tractor to plough and for labourers who prepare the land, plant, weed and harvest. She buys inputs of fertilizer and pesticide. In July, Lina had not yet sold her rice paddy; she was waiting until December when she thought the price would be better. She stores the paddy in a *godown* (warehouse) belonging to one of the large mill owners and if she mills at his machine she will not have to pay for the storage. When Lina finds a buyer, almost always from Dar es Salaam, she will arrange the husking and sell the processed rice directly.

From the above we see that there are similarities and differences with the maize business. There is much more use of chemical inputs and a similar use of casual labour. Important to note is the combination of farming and trading. It is common to find that traders are or were *wakulima* blurring the distinction, often made in political economy and value chain analysis, of these as separate and antagonistic actors. Lina's operation depends on the owners of the large mills as they provide a place for her to store her harvest and to find buyers and husk the paddy. *Wakulima*, like Lina, are the core clients that ensure Mposi's (Section 5.3.3 above) warehouses are full and milling machines are running whenever there is electricity.

### **Sarah**

Sarah is a typical local rice trader in Ubaruku; "I go to the villages I buy rice paddy, then I come to the machines, I husk it and I sell rice, that is my work", she explains. Sarah came from Iringa to Ubaruku in 2010 after her husband was killed in a car crash. She was seeking a new life and opportunities. She lives in one rented room with her youngest son and sends her other three children to boarding school. When not collecting rice paddy she can be found at the milling machines that she describes as "my office". She has *dalalis* in the villages. When she knows what kind of rice paddy and what quantities she needs she contacts them and they collect from *wakulima* and call her when the load of rice paddy is ready. These *dalalis* all live in their respective villages and they get TSh 2,000 (\$ 1.20) from Sarah per sack of rice paddy they arrange.

Sarah arranges transport to bring the rice paddy to the husking machines. She makes a sale about once per week throughout the year with each sale being between 4 and 15 tons. The buyers are from Dar es Salaam and Sarah only arranges the husking once the buyer has checked the rice and they have agreed a price. This price can sometimes be re-negotiated if the quality after husking is not what was expected. Sarah has many expenses: transporting of rice paddy to the mill; casual labourers to unload; workers who spread out the rice paddy to dry (done on the open ground around the mills); labourers to carry the paddy into the mill; the husking itself (TSh 70 - \$ 0.04 - per kilo); and labourers to pack the rice into sacks and sew them shut after the husking. "I pay for every step" she says. Sarah also carries a number of risks; a big one is that she buys the rice paddy by volume in sacks that have not been weighed, but are assumed to be around 100 kilos. After the husking, she has to sell by weight. If the paddy is of a poor quality with a lot of soil mixed in she may only get 75 kilos after husking; "then it is just a loss" she says. She hopes to get between 80 and 85 kilos of rice per sack of paddy, then she will have a profit. The price of rice paddy from the farmers was between TSh 80,000 and 85,000 (\$ 48.50 and \$51.50 - in July 2015) per approximately 100-kg sack and the selling price of the rice (after husking) in Ubaruku between TSh 1,200 (\$0.73) and 1,300 (\$0.79) per kilo. If the conversion of paddy to rice is at a reasonable 80 kilos per sack Sarah will have a gross margin of between TSh 200 (\$0.12) and TSh 300 (\$0.18) per kilo from which she must pay all costs and make her profit (Table 7).

Sarah defies the common image of the exploitative trader (see section 9.4.7.). She doesn't live a lifestyle that could be described as lavish and she provides a key service, paying cash to *wakulima* for rice paddy, and getting it transported, husked and sold on again all at low margins (Table 7). Some of those I spoke to who work for Sarah also defied my assumptions about labourers, in particular a few of them are land owners, who have decided, for now, to rent out their land to others. As with Lina, the mills are central to Sarah's operation, she referred at times to the mills as "my office". This is where she spends most of her time and from where she does her business, often in different forms of collaboration with other traders.

### Darweshi

Darweshi is a 35-year old rice trader from Dar es Salaam who often comes to Ubaruku. I met him at the cheap (less than US\$ 7 per night) guest house where he and other traders stay. When discussing with him we were joined by two other traders who he knows and who shared similar experiences and information. He has been in the business since 2001 when he started by buying 1.5 tons of rice in Ifikara. Darweshi saved the money to buy the rice by working in someone else's shop. A woman rice trader from his extended family network travelled with him and showed him the business when he started. "It is essential to get someone who does that business who can hold your hand, you can stay with them for one week or two. My small mother taught me this business when I first went to Ifikara" he explained. He first came to Ubaruku in 2006 and he now has a shop near the Buguruni market in Dar es Salaam where he sells rice, mostly wholesale, that for him is from 10 kilos upwards. The challenges he and other traders from Dar es Salaam speak of are truck breakdowns and price fluctuations that can leave them selling at a loss.

**Table 7 - Prices received by different actors per kilo of rice, for the lower cost rice as of July 2015 and based on an average conversion of one kilo of paddy to 0.8 kilos of rice.**

	TSh Price per Kg of rice (after husking)	Gross % of retail price received by each actor.
To rice farmer	1,000	66.6%
To local rice trader	1,200	13.3%
To Dar es Salaam Trader (discounted to buyer like Mangi)	1,300 - 1,400	6.7% - 13.3%
Mangi selling at the <i>duka</i>	1,500	13.3%
Nb: These are gross prices and all actors incur expenses. These prices also vary with rice quality, negotiations between particular actors and through the seasons.		

The rice farmers in Ubaruku are getting around two-thirds of the retail price of the rice sold in Dar es Salaam through the food system described in this thesis (Table 7). As noted the supermarkets are considerably more expensive so take a larger share of the retail price when

they sell. Table 7 shows the gross income per kilo of rice to the main actors based on July 2015 prices of the cheaper rice varieties and assuming an average of 80 kilos of rice from 100 kilos of paddy. The buyers from Dar es Salaam are often selling directly at markets like Mwananyamala, as shown in Table 7, although there are some who sell on in bulk to such market traders. These figures illustrate a particular set of transactions at a specific time. There are a number of variations that take place based on slightly different business models, negotiations and seasonal and other price fluctuations.

### **6.3.3. Transporters and transport organisers**

The typical trader from Dar es Salaam, like Darweshi, will buy from a few local traders or farmers, such as Sarah mentioned above, to make up the amount of rice that they want. When the trader has secured the rice he or she needs they call a transport *dalali* to arrange transport almost always on a *semi*. Most of the *semis* going to Dar es Salaam are carrying rice for a few different traders. For example, one truck I travelled with to Dar es Salaam from Ubaruku was carrying rice for five different traders. The largest amount for one trader was 12.9 tons and the smallest was 2.25 tons. The packing of the rice in 100-kg sacks is essential for this flexibility, the name of the trader (or nickname) is written on the sacks with marker pens to be able to identify them and ensure they are offloaded at the appropriate place in the city. Most of these traders have several other traders in markets that they deliver to in Dar es Salaam or they have their own market stall or shop from where they sell. They often work with a partner so that when one is on a buying trip to a place like Ubaruku, which can take weeks, the other keeps on selling.

The trucks can be observed moving from one mill to another, to pick up the various loads. The job of the transport *dalali* does not end when the truck is loaded; they then calculate the money owed by each trader and arrange the collection of the money from them. Some of the traders have by that time gone back to Dar es Salaam so it involves money transfers and picking up the cash from a money transfer agent. The *dalali* then arranges to pay the casual workers who have done the loading, pay the tax that is due to the District Municipality, pay the transport deposit (the balance paid on delivery) and gives the driver the instructions as to where and to who the various rice deliveries must be made. The *dalali* also keeps the details of the driver, the load and all the owners of the rice on the truck, which becomes very important if there is an accident or any loss on the way.

The *semis* picking up rice in Ubaruku are all on their way back to Dar es Salaam after delivering other goods in the Democratic Republic of Congo, Malawi and Zambia. For example, the truck I travelled with, mentioned above, had delivered bottles imported through the Dar es Salaam harbour to a bottling company in Zambia. After waiting a few days in Mbeya, they got the job to pick up rice in Ubaruku. As noted for the maize trade and trucks that pass Kibaigwa, the trip becomes more viable for the truck company and the transport to Dar es Salaam more affordable for the rice traders, thanks to this symbiotic relationship. There are also now some small and locally owned truck companies in Ubaruku.

The transport *dalalis* play a central role in arranging the transport. They have contacts with the trucking companies and the traders go to them when they have rice ready to transport. The *dalalis* find a truck going to the right destination, almost always Dar es Salaam, and organise the loads from the different traders to fill the truck. The other side of the transport business is collecting from the farmers to bring rice paddy to the mills. This is done by small transporters mostly using power tillers and trailers. These of course, also get hired in the planting season for preparing the rice paddy fields. The available technology is going to shape any production and distribution process, this is particularly visible in Ubaruku where the milling machines, all the big ones imported from China, are making the operations possible and improving rice quality and the power tillers, from India, are changing the land preparation and local transport. The Chinese built irrigation scheme also plays a major role. Although there are more hectares of rice under irrigation outside the schemes, the land in the schemes is well laid out and the irrigation system, fed by a large dam, is more reliable, especially in dry years.

## **6.4. Following the potatoes**

### **6.4.1. Potato eating and cooking**

Sharifa loves potato chips, just as many other children around the world do. When she can afford chips, she buys them from *mamantilie* who fry them in pans of boiling oil on top of charcoal stoves at the edge of her school grounds. These chips are cooked direct from fresh potatoes that the women buy in large sacks and slice up.

Hassan, also introduced in Chapter Four, is a *bodaboda* rider, when earnings have been reasonable he likes to buy the popular dish of chips and eggs from a vendor who cooks them on the side of the road (Photograph 17). Hassan's main chip supplier is Juma, a man in his early thirties from Dodoma Region. Juma came to Dar es Salaam in 2005 and started the current chip business in Msasani around 2008. Before that he sold chips in Mabibo area, where he still lives. He buys an enormous sack of potatoes from the Urafiki market every three days. He and his assistant sit and peel and slice the potatoes and cook them in a large wok like pan of oil on a charcoal stove. He sells plain chips and the chips and eggs. They also fry chicken, bought from the Shekilango chicken market (Chapter Five)(Wegerif, 2014c), that some with more money eat with their chips. The chips are served with kachambali (a simple tomato and onion salad) the ingredients bought along with the potatoes at the Urafiki market.



**Photograph 17 - Juma's chip spot.**

Juma is selling from late morning until around 10 pm daily, he has one table, a bench and about six chairs where customers can sit and eat and other people also relax, meet and chat or listen to the radio playing music or covering football games. On one side of Juma is a *genge* and on the other a *duka*. Juma gets the cooking oil and chili and tomato sauce from the *duka* that is just next to where he cooks. Juma's customers frequently buy soft drinks to accompany their meal from the same *duka*. Juma buys eggs from bicycle delivery people and also from the *duka*, if his trays of eggs run out. The *duka* owner, *genge* owner and Juma assist each other, helping out with change for customers, supplying each other and providing a level of security through their joint presence. One of the challenges for Juma is that 'Indians' and foreigners are moving into the area and they are not buying from him like the locals who are moving away did.

#### **6.4.2. Source of potatoes**

It is the end of December 2014 in the small village of Isyonje, which is in the hills about 40 kms to the south of the town of Mbeya. The cool air and fertile soils in these hills make it an ideal area to grow potatoes (Photograph 18) for which there is a large demand in Dar es Salaam, mostly for making chips. The tar road that goes to the border with Malawi runs through Isyonje making it accessible for trucks. On this day, there are nine *semis* all waiting

to be filled with 30 tons or more of potatoes that are destined for Dar es Salaam, around 900 kms away (Photograph 19). Potatoes are brought to Isyonje from the surrounding areas by small trucks and old Land Rovers and sometimes on the back of motorbikes.

The village council has built a warehouse from rough wooden planks and levelled an area of ground near it where four of the *semis* are parked. Inside the warehouse, Angie is taking potatoes from a pile on the floor and packing them in sacks of around 140 kilos each. She buys them by the bucket from farmers who bring them to the warehouse. When she has enough she sells to traders who are sending the potatoes to other places, almost all to Dar es Salaam. One of Angie's two children is playing near the pile of potatoes on the floor while



**Photograph 18 - Potato field and sacks of potatoes waiting to be collected in Mbeya Region.**

her mother works. Angie and her husband have some land and farm as well, but she says a lack of capital limits her from farming more.

Outside the warehouse Ikupa stands, with a baby wrapped in blankets on her back, watching casual labourers moving 40 sacks of her potatoes from the smaller truck she came with directly onto one of the *semis*. Ikupa has sold 105 sacks on that day and is checking by phone where the other truck she hired is. She and her husband farm potatoes on land that they rent for TSh 2,000,000 (\$ 1,212) per season. Ikupa's other main inputs and expenses are paying for ploughing, fertiliser, pesticides and the TSh 3,000 a sack she pays for transport to Isyonje. She and her husband harvested a total of around 800 sacks this year and are one of the bigger growers in the area.

The buyer of Ikupa's potatoes on this day is known as 'Msousi', a man in his late twenties who lives in Uyole and got his nickname from the time he spent in South Africa. Ikupa lost TSh 700,000 (\$424) once when a buyer went off with the potatoes and never paid. They could not find him and he switched off his phone. She has dealt with Msousi before though and trusts him.

Msousi is buying from others as well in order to fill the *semi* with 210 sacks of potatoes. When the loading is complete Ikupa waits for Msousi to come and pay her, the labourers, the village tax and a transport deposit to the *semi* driver. Msousi also has to give the driver instructions about where to deliver the potatoes in Dar es Salaam. Msousi arrives by bus, a

skinny young man wearing dusty sandals, jeans and a T-shirt and carrying a bundle of cash in a backpack slung over his shoulder.

The driver of the *semi* carrying Msousi's potatoes is also the owner. He has two *semis*, one he drives and the other he employs someone to drive. Both of his trucks, like most on the roads in Tanzania, were bought second hand and imported, in this case from the United Kingdom. This journey started for him with taking building materials imported through the harbour in Dar es Salaam to Mukamba in the Democratic Republic of Congo (DRC). Now he is on the way back to Dar es Salaam where he lives. All the *semis* picking up potatoes today are on their way back to Dar es Salaam after making deliveries in either Zambia or the DRC.



**Photograph 19 - Trucks waiting in Isonje village and on the right Land Rovers bringing potatoes from surrounding villages to be loaded.**

The potatoes were selling in Isonje for between TSh 30,000 (\$ 18.18) and 45,000 (\$ 27.27) per sack depending on size and quality. The village collects a tax of TSh 1,000 (USD 0.60) per sack of potatoes that is sold outside the village by traders and larger *wakulima*. The tax is reduced to TSh 500 (USD 0.30) per sack for small *wakulima* who are selling directly.

#### **6.4.3. Urafiki market in Dar es Salaam**

A week later at Urafiki, one of the main potato markets in Dar es Salaam, sacks of potatoes were selling for between TSh 65,000 (\$ 40) and 90,000 (\$54.55) unless they were getting old. The last sacks of aging potatoes left on some of the trucks were being sold for as little as 45,000 (\$27.27). Thus, the farmer selling in Isonje gets approximately 50% of the wholesale price in Dar es Salaam. To speak of a retail price is rather tricky as many of the potatoes are sold cooked as chips or uncooked in people's markets and *genge* (vegetable stalls) in small piles that are rarely weighed.

The Urafiki market comprises a large open piece of land surrounded by a wall. It is not far from the Morogoro Road that is the main route for trucks coming into and leaving Dar es Salaam including those that go through Mbeya on their way to Zambia, Malawi and the DRC. This market arose on the current site through the actions of traders who were moved by the government from next to the Morogoro Road to the market at Buguruni, which did not work for them. The status of the site remains temporary and uncertain, although it has now been in place for 15 years (Mbisso, 2011). The potatoes are sold directly from the back of

dozens off *semis* and some smaller trucks that are parked around the ground (Photograph 20). Sitting with the trucks of potatoes are *dalalis* who do the selling for a commission of between TSh 1,000 (\$ 0.61) and 1,500 (\$ 91) per sack sold. Potatoes do not grow well in the hot and humid Dar es Salaam and all the potatoes at Urafiki come from higher altitude inland areas with cooler weather suitable for potatoes growing, including Isyonje and other areas around Mbeya Region, Njombe Region, Kilimanjaro Region and some from neighbouring Kenya.

Around the market grounds there are also a few zinc rooves on poles under which traders pile stock, mostly bananas, on the ground. At one side, there are roughly built shelters where women cook and sell food. The Kinondoni Municipality that collect taxes from the



**Photograph 20 - Trucks loaded with potatoes at Urafiki Market and *gota* transporters waiting to distribute the potatoes around Dar es Salaam. On the right are some potatoes waiting to be sold from the back of a truck.**

market list 698 traders who work there. Others have estimated that 3,000 traders operate from the site daily (Mbisso, 2011), the difference likely due to the number of *dalalis* and assistants who work around the market in addition to the registered traders. There are also the three-wheeled *gotas* lined up waiting to distribute the potatoes and other foods that have been bought at the market to outlets across the city, such as Juma's chip stall and to the women cooking chips outside Sharifa's school.

## **6.5. Land rights and farm size**

Access to land for one's own production is, unsurprisingly, essential for the prosperity of farmers. This was said by *wakulima* and also clear to see when comparing the situation of actors in rural villages who have access to land and those who don't. A lack of access to their own land was one of the common characteristics of those in poverty who were not supplying food for Dar es Salaam. At the same time, however, owning land was not necessarily a common characteristic of all the wealthier farmers and land was not necessarily

the only route out of poverty. Some farmed successfully on rented land. Many farmers moved into trading and other forms of business.

Daniel, the *wakulima* from Zombo, explained the steps to getting wealthy; “some rent land, they rent from someone, they can plant until they harvest produce, they can then get their own land”. There is a risk in this land rental route, however, as Daniel explains “it is possible to fail in farming this year, then you will fail to have money to rent land next year”. In his view the richer people in the village have farmed and got a big income from selling their harvest and then moved beyond farming and gone into other businesses.

One of the most striking things about the land situation is that village land in many areas has all been allocated. In all the grain supplying villages I visited the village authorities have no land left to allocate. It is all now in private hands and this has happened in the last ten years. Someone growing up in one of these villages can no longer go to the village council and request a piece of land. Instead they will have to buy it from a private land holder. This represents a significant step in the commoditisation of land with a potentially large impact in the future, given how important land access is for local farmers. This already means that more people are relying on renting land in order to get access. Some of the largest farmers in maize growing areas like Kiteto and Kitaita as well as rice growing areas like Mbarali are farming on rented land. The renting of land, certainly in Ubaruku, is also facilitating more women independently accessing land for their own production. This is perhaps because the estate land is not subject to any historical cultural norms that often prejudice women’s access to land. The field of land policy studies and work, however, needs to catch up with this new reality. There is little academic and policy work dealing specifically with land rental issues in Africa.

The question of what land one has access to is as important as the question of whether one has any land at all. The different potential of the different lands and the impact that has on people’s livelihoods was stark, especially in Zombo and Ubaruku. In Zombo there was a clear difference between the valley land and the hillside land. The valley land was more fertile and with more water. Those in the valley land could also irrigate if they had a pump. This meant far greater returns per hectare and more harvests for those with valley land. In Ubaruku those accessing land inside the estate and some places with more reliable irrigation outside the estate got much more consistent and higher yields than those on most of the land outside the estate. In both cases climate changes are exacerbating the difference. In the past, when there was consistent rainfall, those with land on the hills around Zombo and those using the traditional irrigation land around Ubaruku still got good harvests. Now they are frequently getting very limited harvests and making losses. Those in the valley and irrigation land are a little affected, but still get good crops due to water availability, they also benefit from higher prices due to shortages of supply from less fertile and less well watered land.

The land may be held individually, but it is not yet fully commoditised. For one, people do not have certificates of ownership. Such certificates potentially increase the land holder's powers over the land, especially when it comes to selling. The transactions in land are still subject to many social conventions as reflected in the discounted market price, which is closer to an administrative fee. The low market price for buying land is also reflected in the ratio of rental rates to purchase price. For example, in Kitaita one can buy land for TSh 150,000 (\$ 90.90) an acre and rent for TSh 30,000 (\$ 18.18) per year. In Zombo valley land can be bought for around TSh 200,000 (\$ 121.21) an acre, whereas renting is about TSh 50,000 (\$ 30.30) to rent. Thus, four or five years of rent will buy the land.

The debate on farm sizes is always made difficult by the large differences in the quality and productive potential of land in different places. Even within the same village one often finds land of very different potential as illustrated in Zombo by the difference between the valley land and the land on the surrounding hills. Jayne et al have pointed to the trend of 'medium-scale farmers' crowding out the smaller farmers, but their definition of medium as being a farm size of between 5 and 100 hectares is not very helpful (Jayne et al., 2014). Mellor and Malik's differentiation of 'small commercial farmers', 'large commercial farmer', 'feudal landholders' and 'rural non-farm households' is more useful (Mellor and Malik, 2017), although I would not agree with the terminology. Their 'small commercial farmers', like most of the *wakulima* supplying Dar es Salaam, have enough land to get themselves out of poverty including through selling a good proportion of their production, but do not have "urban consumption patterns" (ibid: 3). The majority of farmers engaged with in this study fall within Mellor and Malik's land size definition for 'small commercial farmers' as those using between 3 and 75 acres, which is 1.21 to 30.35 hectares (ibid). They do not fit well with the definition used by Jayne et al as they tended to fall in the lower end of the medium size farm and upper end of the small farm size, straddling the important 5-hectare dividing line.

High value rice farmers on irrigated land were mostly utilising less than 5 hectares, but had higher values of production than farmers doing rain fed maize farming on between five and ten hectares or even 20 hectares. The pattern I have found is that the important divisions related to land size fall firstly between those with over 1 hectare compared to those with 1 hectare or less who are rarely supplying Dar es Salaam. Secondly it is the division between those with less than around 15 hectares and those with more. Even in the dry land areas like Kiteto those with between 2 and 15 hectares are consistently selling maize to traders and all operate in a very similar way with their own and family labour and some hired labour and sometimes hiring of a tractor. Above that there is a jump to farmers who have around 50 hectares or more and are specifically focussed on producing for sale. These are almost all involved in other business activities in addition to farming and employ labour providing little direct labour input or supervision themselves. If we follow Chayanov's suggestion of analysing capitalist factors in the organizing of production we see that these farms involve large access to land and a dependence on hired labour rather than family labour, what Chayanov referred to as "hired labour on farms, not brought in to help their own, but as the

basis on which to obtain unearned income, and oppressive rents” (Chayanov, 1986: 255). Very few *wakulima* have land beyond 100 hectares in size, but also when they do the model of farming is not different from those with 50 hectares, which seems to be the level around which the relation to land and labour becomes different from the majority of farms run by *wakulima*.

For a balance between production and equity, it would appear that the focus should be on farmers utilising between 2 and 15 hectares. These are able to consistently supply markets without large accumulation in few hands at the expense of others. This fits within Mellor and Malik’s 1.21 to 30.35 hectare farm size range that importantly they found to be the most beneficial scale of farming to invest in for maximum poverty reduction (Mellor and Malik, 2017).

## 6.6. Conclusion

With land, capital and good health it is possible for most *wakulima* to build themselves a reasonable life as they get food to eat and have a market for the surplus they produce. Without these three any *wakulima* will struggle and if they have only one or none of the three they are in real trouble. The changing weather conditions have also thrown a new level of uncertainty into the equation.

New technologies that could be considered part of modernisation, such as milling machines are being used, but being incorporated on terms shaped by the actors and within a system that has ordering principles that are not derived from the ‘Western’ derived notion of modernisation. Interestingly a lot of the new technology found in the symbiotic food system is coming not from the ‘West’ but from China and India with their own large peasant and small trader populations that use such machinery.

The picture of the food geography that emerges from following these staple foods is one that is not only disbursed across a wide area (Figure 2), but is also shifting in response to a range of factors. For example, transport routes for other goods create conditions for particular flows of food. Changing weather patterns make some areas more or less viable for certain crops. Conflicts and politically driven interventions shape where certain crops are grown. Particular infrastructure investments, such as irrigation systems in Mbarali District and improved roads to link to neighbouring countries, create, often inadvertently, nodes of production and distribution. This food system, is quite different from what is looked at and presented in work and discussions on ‘city region food systems’ and ‘alternative food networks’ - as discussed in the introductory chapter and picked up again in the conclusions - that tend to focus on administrative areas, local and short supply chains and the consciously constructed new food networks (Maye and Kirwan, 2010; Born and Purcell, 2006; Renting et al., 2003).

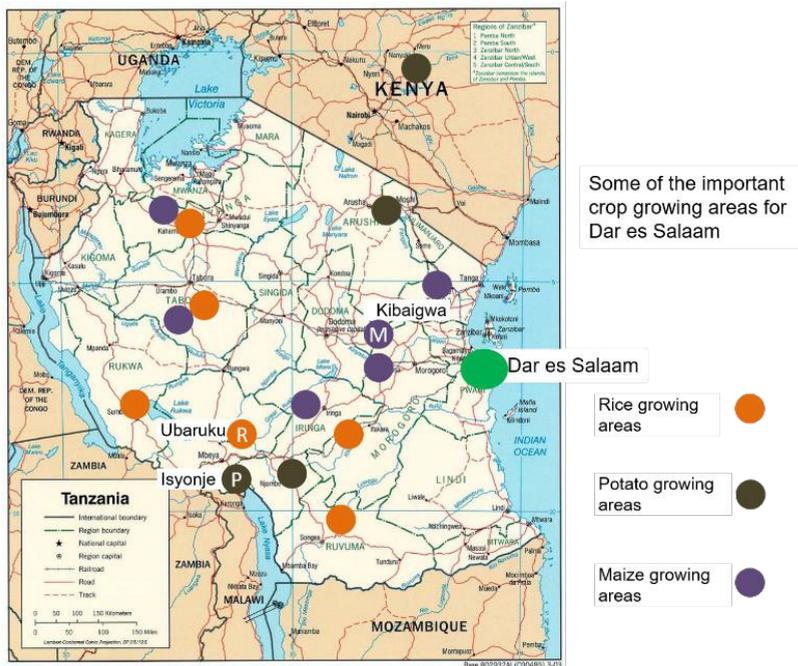


Figure 2 - Map of Tanzania indicating the wide geographic spread of the important production areas for crops looked at in this chapter.

Even very small scale *wakulima* have the opportunity to supply the growing market of Dar es Salaam. This is facilitated through the networks of *dalalis*, traders, markets, processors and retail markets and *dukas*. Small farmers do have access to markets largely through private traders who reach out into remote villages and not just in Tanzania. As Jayne et al conclude from a multi-country study across eastern and southern Africa, “[s]mallholder farmers are less isolated from markets than commonly thought” (Jayne et al., 2010: v). The rice, maize and potatoes are there in the *dukas* and with the road side chip sellers every day. The traders along with *dalalis* play a crucial role in the bulking of staple foods to get them onto *semis* and the road to Dar es Salaam. The profit margins that these traders get for their services is generally very low, especially considering the risks and costs they incur.

Almost all the *wakulima* spoken to and observed use family labour and some hired temporary labour and a few had permanent assistants. These are not the “pure” family or peasant farms of Chayanov (Chayanov, 1986: xiii). A few of the larger *wakulima* who have other economic activities, such as trading and milling, are not directly labouring on their farms and rely entirely on hired labour, although many of these are still very directly involved in supervising and organising what is happening on the farm.

Many *wakulima* are by default using organic or low external input farming styles. Default because there was no conscious effort to be organic for the sake of it, the decision on farming styles being more informed by the farming conditions and lack of capital. Maize growing

*wakulima* in most areas visited used no fertilisers and pesticides at all. Some used cow manure on their fields. It was common to find *wakulima* intercropping and rotating maize with crops like beans. Most of the rice growing *wakulima* used some form of pesticides and herbicides and some also used chemical fertiliser as well as natural manure. All the *wakulima* selected seeds from their harvests for replanting based on seeing which were giving better yields and many used different varieties of maize seeds that they knew would respond differently according to the weather conditions. They hedged their bets by planting seeds that would do well if there was good rainfall alongside seeds that would survive and give at least some yield if the rains were bad. Most *wakulima* also bought some seeds from local supply shops, replacing the seeds after a few years when the ones they had were 'tired'.

Few of the *wakulima* mentioned, even when asked, any assistance they received from the state or from NGO or other sources. Some mentioned the seeds provided through the village office with the assistance of some NGOs (A World Vision vehicle was seen delivering seeds to the office during my time in the village of Zombo). The *wakulima*, however, only mentioned these seed supplies when referring to the problems of poor seed quality and late arrivals of seeds that did not fit the planting season. The clearest direct assistance to a farmer was the provision of a tractor on preferential purchasing terms to the largest land holder in Zombo.

For those who have depended on labouring, in their own fields or the fields of others, the coming of old age and with that a reduced physical capability is a serious challenge. On the other hand *wakulima* who had accumulated enough capital in different forms are able to live out a reasonably comfortable old age.

The impacts of climate change are being felt in all areas, impacting on production with changing and unpredictable weather patterns. We already have people who are internally displaced, at least in part, due to climate changes and environmental destruction. Kafil, referred to above, was clear in identifying the heat and poor soil as his main reasons for moving from Tabora to Zombo. Loss of soil fertility is also a serious concern, but with plenty of opportunities to improve practices of small farmers who are willing, if they know how, to do something to counter this threat that they are aware of.



## Chapter Seven – Examples of Foods from the Urban, Peri-urban and Beyond: Eggs and Green Vegetables<sup>17</sup>

### 7.1. Introduction

This chapter looks at eggs with a shorter description of green vegetable supplies. These are quite different foods, but each has a high market and high nutrition value and both are widely produced in urban and peri-urban Dar es Salaam as well as being brought from other regions.

Eggs are an important source of nutrients, proteins, vitamins, and have been found to contain “substances with biological functions beyond basic nutrition” (Kovacs-Nolan et al., 2005: 8421). In Tanzania in 2002, total egg consumption was around 31,000 tons, which while significantly less than beef consumption was more than 75% of the combined sheep and goat consumption, and more than double pork consumption (Ministry of Livestock Development, 2006a: 8). Between 2002 and 2006/07, egg production increased from 790 million a year to 2.2 billion (Msami, 2008: 7). In the same period, per-person consumption of eggs doubled from 23 to 50 per year (FAO, 2005: 11).

Eggs are easily accessible and are available from the full spectrum of retail outlets including street traders, *dukas*, and supermarkets (Msami, 2008). This makes them an interesting entry point for looking at the relative merits and sustainability of various modes of food supply.

Green vegetables are also widely available from a diverse and different set of outlets and are available by delivery door to door across Dar es Salaam. The last detailed crop census recorded production of over 15,000 tons of amaranths (*mchicha*) and over 12,000 tons of spinach (National Bureau of Statistics, 2012a: 61). Given the suitability of these crops for growing in small spaces and with the common practice of monthly harvesting, it is likely this was a substantial undercount. *Mchicha* is the most commonly grown crop in Dar es Salaam with others including spinach (Chinese variety and others), pumpkins and legumes from which the leaves are also harvested and sold (Masashua et al., 2009).

Green vegetables are an important source of protein and a range of vitamins and minerals and have been found to contain micronutrients and bio-active compounds that are gaining recognition as important in our diets. An increasing interest in foods that are seen as part of people’s culture and a growing awareness of the importance of healthy and diverse diets is resulting in new opportunities and a more important role for green leafy vegetables in people’s diets (Smith and Eyzaguirre, 2007).

---

<sup>17</sup> Substantial portions of this chapter were previously published as a journal article (Wegerif, 2014) and an online magazine article (Wegerif, 2015a).

## 7.2. Egg eaters

The situation of eaters in Dar es Salaam was elaborated in Chapter Four. To recap in relation to eggs and green vegetables, the majority of eaters buy in small quantities what they can afford and when they can afford and need, based on unreliable and low incomes. Some who have more storage space buy trays of eggs when they can get them at a good price, such as from a wholesaler. Green vegetables are eaten by almost everybody, certainly all the eaters referred to in Chapter Four, as an accompaniment to other foods such as beans and meat and sometimes alone with rice or *ugali* when the eater cannot afford anything else.

Tabu, who is introduced in Chapter Four, is HIV positive and believes that high protein foods like milk and eggs are important for her diet, to help her deal with the effects of HIV and the anti-retroviral medication she is on. She says she buys the eggs “two, two, from the *duka*” when she can afford them. She never buys six, which is the minimum size container of eggs available in the supermarkets. Tabu also eats green vegetables whenever she can, she either buys from a market or *genge* and also as part of ready cooked street food. During the research period, she started to earn an income from selling green vegetables from another women’s urban agriculture plot.

Hassan, also mentioned in Chapter Four, eats eggs about once a week. He says, “I like eggs, not every time, but I like eggs... I buy at the *duka* because it is easy, I buy two, not more than two”. He eats eggs with bread for breakfast or with *ugali*; and sometimes he says, “not often as it is expensive, I eat chips and eggs”. These are bought from Juma the chip seller in the street near where Hassan works. Green vegetables form part of most evening meals that Hassan’s grandmother or sister cooks at the home they share. Sometimes green vegetables are part of the meal that Hassan shares with other young men in the street.

Caroline frequently eats eggs and her daughter has a fried egg almost every morning. The eggs are always bought at Mangi’s *Duka* in varying quantities. If Caroline runs out of eggs, the *duka* is about 20 metres away and open from around 7am, often a bit earlier, so it is easy to go and get more.

## 7.3. Following the eggs

The Street I focused on when looking at egg supplies is about 200 metres long, with 25 houses. The road itself is a bumpy dirt surface that changes with the rains and the ad-hoc efforts of residents to patch up holes, dump rubble from building projects, and create speed bumps to slow down the passing cars. It is a family neighbourhood, but the families differ dramatically. On one corner, a three-storey mansion fills almost an entire plot, is surrounded by high walls, and you will rarely see anyone come or go through the gate. Around another corner, where a number of young men sleep in the street, is the *uswahilini* (informal settlement) area of Bondeni, with crowded living conditions, floods in the rainy season, no running water and pit toilets. Between the extremes of mansions with many rooms and satellite dishes and people sleeping in the street, are single storey homes, usually consisting

of four or so rooms, often accommodating extended families. Several of these households rent out one or more of the rooms or backyard shacks for around TSh 30,000 (\$ 18.18) a month. Cooking is often done in the yards on small charcoal stoves. Boys play soccer in the street in the evenings and girls are sent to the shops to buy things their mothers or nannies need. There are some wealthy residents and some who regularly go to the doors of their richer neighbours seeking food or money for medical bills, school fees and other such needs.

### **7.3.1. Mangi's Duka**

Mangi's Duka, described in Chapter Five, is the main egg supplier in The Street. The eggs are arranged in reused trays, holding 30 eggs each, stacked on top of each other on the counter. While the eggs are transported and stored at the *duka* in trays, and some customers bring their own containers, Mangi does give many customers plastic bags in which to carry their eggs and other items. Mangi keeps up to seven trays at a time, and sells about 14 trays a week with prices during the study period varying between TSh 250 (\$ 0.15) and TSh 300 (\$ 0.18) per egg. In 2011 and early 2012 these eggs were supplied every two or three days by the same cyclist, Samuel, who rides with the eggs from the village of Kipunguni 22 kms away. Towards the end of 2012 and through 2013 Mangi continued to buy from Samuel, but also at times bought eggs from a friend of his who is an egg wholesaler in another part of town, fetching them on his motorbike.

Mangi sells eggs one by one, and in any quantity that customers request. Most customers buy a small number of eggs. Typical examples include a man with a child on his arm buying half a kilo of maize meal and two eggs, a woman taking three eggs, and even a man taking one egg on credit at 10 pm.

The other *dukas* within a few minutes' walk from Mangi's Duka sell eggs, normally for the same prices. These *dukas* also had their eggs delivered by cyclists, although different from the one coming to Mangi.

### **7.3.2. Selling from home**

On the other side of The Street about 100 metres from Mangi's Duka is a house with a handwritten sign outside advertising eggs for sale: In February 2012, they were priced at TSh 7,500 (\$ 4.84) per tray or TSh250 (\$0.15) each and by October 2013 after various fluctuations they were selling for TSh 8,000 (\$ 4.85) a tray or TSh 300 (\$ 0.18) each. A young woman, Hadija, sells the eggs. Her sales varied over the period of research normally between one and two trays a day. In February 2012, she was buying them from a shop in Ilala for TSh 6,500 (\$ 4.19) per tray, so her gross profit per tray was TSh 1,000 (\$ 0.61).

Initially Hadija would buy 20 trays of eggs at a time and transport them by *daladala* from Ilala to Msasani, where she then got a bajaji from the bus stop to her house. I took the same journey as Hadija and found the egg shop near the bus stop on a busy road. The young man running the shop sells eggs only. He goes out to buy them from *wakulima* around Kitunda.

In early 2012 he was selling trays for up to TSh 7,500 (\$ 4.55) each, but would reduce his price for bulk buyers like Hadija.

In early 2013, Hadija switched to buying eggs from a bicycle-based egg trader as she found this was more convenient than going to buy her eggs in Ilala and the pricing was competitive.

Hadija's home sales are convenient for customers who live on or near The Street and at times she was cheaper than Mangi's Duka, especially if people can buy per tray. Buying from her is not as convenient as buying from the Duka though as one has to knock on the door and wait. I have not seen customers going there early in the morning or late in the evening.

### 7.3.3. Chip seller

In the next street is the nearest chip seller (muuzaji chipsi in Kiswahili) with a typical large wok-like dish full of boiling oil on a charcoal stove made from an old truck wheel. Next to this is a small grill used for cooking mishikaki (meat on a stick) and the popular dish of chips and eggs cooked into a type of omelette (chipsi mayai). They start cooking the chips



Photograph 21 - Mariam carrying eggs as she goes door to door to sell them.

before lunch and carry on into the evening. On average, they cook three trays of eggs a day. The eggs are mostly sourced from various cyclists, although at times they are bought from Hadija or from a *duka* nearby.

The chips and eggs are cooked with two eggs and sell for TSh 2,000 (\$ 1.21); this price remained unchanged during the research period. Plain chips were sold in 2013 for TSh 1,200 (\$ 0.73), an increase on the TSh1,000 (\$ 0.61) charged in 2012. From this we can consider each egg, when cooked, to be sold for TSh 400 (\$ 0.24) and see that the chip seller is squeezing his profit on the eggs by keeping the price down. This is a competitive market with many chip sellers, all selling chips and eggs. In 2012 a new one opened only about 100 metres down the road from the chip seller described here.

### 7.3.4. Egg delivery door to door

Mariam is from Gongo La Mboto, a village beyond Julius Nyerere International Airport on the road to Kisarawe. Her husband passed away some years ago and she supports herself and

her child by selling eggs, knocking on gates in different streets. She carries 10 to 15 trays of eggs each day wrapped in a cloth balanced on her head or slung over her shoulder when there are not so many left (Photograph 21). She buys eggs from local small *wakulima* in the peri-urban area of Gongo La Mbotto and travels to Msasani on the bus with its government-regulated fare—TSh 400 (\$ 0.24) in 2011 and TSh 600 (\$ 0.36) in 2013—for the approximately 25-km journey across town. She has usually sold her eggs by about 10 am and then heads home. Mariam sells only whole trays of 30 eggs. In 2013 she was buying eggs from the *wakulima* at TSh 6,500 (\$ 3.94) and selling them at TSh 7,500 (\$ 4.55).

In August 2013 Mariam called and asked to see me. Her child had been sick and there had been a funeral in the family. To meet these and other demands she had used up the capital base for her egg business. While in theory state-provided health care for her child should have been free, this is not the case in practice—there are costs of transport and almost always some other charges such as for opening a file and purchasing medicines. Sickness in a child can also lead to the need to buy different and more expensive foods or additional items such as nappies and sachets of rehydrate.

I lent Mariam TSh 100,000 (\$ 60.61) to buy stock and get back into business. She has a regular set of customers that she delivers to. If I had not assisted her she may or may not have been able to find other assistance, she had managed to find her original start-up capital without me. While showing the vulnerability of such traders, this experience also reveals the low financial entry barriers to business for her. Around \$65 enabled her to restart a business from which she supports herself and her family.

### **7.3.5. The supermarket**

At Shoppers Supermarket, the eggs are kept in a fridge in one corner near the vegetable section. At the end of November 2011 five different brands of eggs were available in packs of six or 30. Three brands were Tanzanian, all Dar es Salaam based companies; the two imported brands were from France and the United Arab Emirates. Prices ranged from TSh 1,950 (\$ 1.18) for six Tanzanian eggs up to TSh 19,900 (\$ 12.06) for six eggs imported from France. A price check done on the same day showed that Shrijees and Shoprite (Shrijees is another supermarket group with four stores in Dar es Salaam. Shoprite is a South African based multi-national company) stocked only the same brands of Tanzanian eggs as Shoppers, but at slightly higher prices.

Over the following two years Shoppers stocked different selections of eggs, often only one brand at a time, and rarely had imported eggs. Eggs were always available in the trays of six, and sometimes in other larger quantities as well. At times, they stocked “local eggs” (These “local eggs” are from traditional village chickens (*kuku ya kinyeji*) as opposed to the commercially bred chickens, see more on these in sub-section 7.3.7) at higher prices or other more expensive eggs claiming that they had yellow yolks or were organic. According to the store’s purchasing manager, the imported eggs sold too slowly so they will not stock them again. They prefer, he said, to buy from local suppliers and they choose those who are

reliable. Imported eggs have however appeared again in the Shoppers' fridges a few times, although not for long.

Prices of the cheaper eggs in Shoppers crept up over the study period and never fell. In October 2013, they were TSh 2,800 (\$ 1.70) for six eggs. While this is substantially more than six eggs from Mangi's Duka (which cost TSh 1,800 at that time), Shoppers egg prices were consistently lower than the competing supermarket groups. By October 2013 Shoprite and Shrijees were selling trays of six eggs for TSh 3,000 (\$ 1.82) and TSh 3,400 (\$ 2.06) respectively. In 2014 Shoprite pulled out of Tanzania, selling its operation to Nakumat, a supermarket group from Kenya. Nakumat's egg selling and pricing was very similar, equally uncompetitive, to that of Shoprite.

### **7.3.6. Egg wholesaling**

Mama Hamisi, mentioned in Chapter Five, sells eggs wholesale and retail from her shop next to Mikoroshoni Market. In early 2012 she was selling around 200 trays of 30 eggs a week at TSh 6,500 (\$ 4.94) a tray or TSh 250 (\$ 0.15) per egg to small businesses and individuals in the area. The eggs were bought for TSh 6,000 (\$ 3.64) from a man who hires a truck to bring them to Dar es Salaam from Kibaha village about 50 kilometres away. They were from one of the largest egg farms in Tanzania, known as Mkuza—see Msami (Msami, 2008).

At times Mama Hamisi was selling trays of eggs at between TSh 7,000 (\$ 4.24) and TSh 7,500 (\$ 4.55) with single eggs still at TSh 250 (\$ 0.15). By October 2013 she had reduced prices again selling a tray of large eggs for TSh 7,000 (\$ 4.24) and smaller eggs available at TSh 6,500 (\$ 3.94). She was buying from a range of different suppliers. According to Mama Hamisi, her previous supplier had first shifted to supply eggs to Mtwara, a city in the south of the country and had then stopped supplying eggs entirely saying there was too much competition. Mama Hamisi complained that her business was struggling, but she was not forthcoming about her actual sales quantities or profit margins. She said there was too much competition with a lot of people getting into the business, such as a new egg shop that had opened in a nearby street.

### **7.3.7. The egg as remedy**

Just a few metres from Mama Hamisi's shop, down a small alley and under the main market roof is a duka la dawa asilia (traditional medicine shop) selling 'local eggs' for TSh 600 (\$ 0.36) per egg. The eggs are sold for their health benefits alongside other traditional remedies for a range of ailments and items such as beads. Such 'local eggs' do not sell in large volumes, but as mentioned, are also sometimes stocked at Shoppers Supermarket and at Mangi's Duka. I have not studied them as closely due to time limitations and because they do not sell in large volumes in Dar es Salaam. The local chickens that lay these eggs do make up a significant part of the country's chicken stocks (Msami, 2008: 3) and (Nonga et al., 2012: 11), and people who can afford them are willing to pay higher prices for the eggs and meat

of 'local chickens' believing them to be of a superior quality, healthy and free from chemicals (Nonga et al., 2012; Mlozi et al., 2012).

The local chicken is an interesting alternative to the commercial supply and while currently a niche product, the ubiquitous nature of the local chicken in rural areas shows their resilience. There also appears to be potential for the expansion of this market (Mlozi et al., 2012).

## **7.4. Egg distribution and production**

### **7.4.1. Bicycles**

Others (Oleke and Isinika, 2011; Nnunduma, 2003; Msami, 2008) have noted the large number of bicycles making deliveries of eggs in Dar es Salaam especially from the Kitunda village and surrounds, just beyond the international airport (Photograph 22), the same area Samuel comes from. Bicycles on the Nyerere Road (also known as Julius K. Nyerere Rd and Pugu Rd) coming from the airport into town were counted in February 2012 and again in November 2012. In addition to counting the bicycles with eggs, the number of trays was counted on a sample of bicycles to be able to estimate the total eggs being carried by bicycle on this route. In February 2012, the count was done over three days and gave estimated figures of over 1,000 bicycle journeys a week carrying more than 20,000 trays or over 600,000 eggs. The November count was done for a full week, and 1,543 bicycle trips were observed carrying eggs to town on the Nyerere Road with an estimated over 33,000 trays, just under one million eggs for the week (A further 9,190 bicycle trips, without eggs, were counted on the Nyerere Road in that week). This represents a gross income of over TSh 9 billion (close to \$6 million) to the small-scale egg producers in the villages along that road. These figures are only for the bicycle deliveries going to town; other forms of transport are used, and sales also take place within the villages and nearby suburbs. From observation on other routes it appears that the Nyerere Road is the busiest one for this particular trade, but it is not the only route linking peri-urban egg production to the urban market by bicycle. This is a substantial industry that helps to support thousands of self-employed egg distributors and small-scale egg farmers (Oleke and Isinika, 2011: 344).

At the end of 2011, and into early 2012, Samuel, who delivers to Mangi's Duka, made an average of three trips to town a week to deliver eggs and was clearing a profit from this of around TSh 195,000 (\$ 118.18) a month. By 2013, Samuel had increased his deliveries to five times per week, and also the number of eggs he carried on each trip, varying from 15 to 30 trays a trip. Despite Mangi at times buying from another source, Samuel's egg business had expanded as he found more customers and his net income had gone up to over TSh 300,000 (\$ 181.82) per month, well above TSh 70,000 (\$ 42.42), which is the monthly minimum wage in the agricultural sector, and also over TSh 150,000 (\$ 90.91) per month which is the minimum wage in the 'inland-transport' sector (National Bureau of Statistics, 2013b). Samuel's egg deliver business, including deliveries to Mangi, was continuing at a similar level at the end of my field research in mid-2015.

For peri-urban egg producer, the bicycle-based egg traders provide convenient access to markets. Cyclists come to the farms and pay cash for small and flexible quantities as they collect eggs from a number of small-scale producers to make up a load to take to town. *Duka* owners and other buyers have the convenience of delivery to their doors and being able to buy in flexible quantities. Direct supply from *wakulima* to retailer in small quantities ensures a fresh product. This is an excellent example of the “short and decentralized circuits” characteristic of a peasant mode of food provisioning (Van der Ploeg, 2008: 3).

What the cyclists are not able to do is meet single orders for large quantities from supermarkets. These require either a large producer or an intermediary who will do a greater level of aggregation and packaging to meet the demands of supermarket procurement systems (Weatherspoon and Reardon, 2003).



**Photograph 22 - A bicycle loaded with eggs passes Julius Nyerere International Airport.**

Far from being the “itinerant middlemen” that Msami refers to (Msami, 2008: 19) the cyclists I have interacted with are part of the communities in which the eggs are produced. They spend their income in those communities, they know the egg producers, and are part of the social and cultural life. It was notable that when asked about the challenges their businesses face, many of the cyclists spoke about the problems faced by the egg *wakulima*—such as the costs and poor quality of chicken feed—clearly empathizing with the *wakulima* as well as seeing the impacts of competitiveness on an industry that they both depend on.

The bicycle-based delivery system is environmentally friendly with extremely low carbon emissions, reuse of minimal packaging, and little other environmental impact. In addition, the accessible technology of a bicycle, which costs less than a load of 30 trays of eggs, and less than the profit that can be made in a month, must be a key factor in encouraging the large number of independent operators in the sector. The generally flat terrain of Dar es Salaam and some of the better tar roads, such as the one to the airport, as well as service roads and side paths, help to put the city within bicycle reach of the peri-urban villages.

#### **7.4.2. Peri-urban egg producers**

I first accompanied Samuel to his village in 2011, cycling home with him after he had made his egg deliveries. We arrived at his home before 1 pm and joined his family for lunch in the shade of a tree outside his house. I found that as well as buying from neighbouring small *wakulima* he himself owned 100 commercial egg layers as did his sister in law who lives in the same homestead. These chickens were in sheds around the edges of the plot on which his house stands.

I also visited other egg *wakulima* in the area who supply the bicycle egg traders. Most were fairly small-scale egg producers who had up to 500 commercial layers, but I found some who had a few thousand chickens. The chicks come from different places including Zambia, Kenya, Interchicks and, in the past, from a government-run farmers' support organisation that has since closed. Financial assistance to start came from the National Bank of Commerce (before this was privatized), from a savings and credit cooperative or from the farmers' own resources and networks.

The *wakulima* are using commercially bred layers, but in a way that is far removed from the forms of 'factory farming' that have come in for much criticism from critics of industrial agri-business and groups dedicated to animal rights and healthy food in many countries (Foer, 2009; Vegan Peace; Compassion in World Farming). The typical chicken farm in peri-urban Dar es Salaam is on a small plot that is also a family home with children running around, some shady trees to sit under, sometimes with a few cattle and some crops being grown as well. The chickens on these small, or even micro farms, are generally in spacious enclosures; they have space to run and places to perch.

The main input cost for chicken *wakulima* is the feed that is bought from companies such as Mfugaji Company Ltd., Kiboko, Falcon, and Taboka some of which have operations in Kitunda. All of these appear to be medium-sized Tanzanian businesses. Samuel's chicken farming was made more affordable and convenient, by his being able to walk to the local feed factory with his wheelbarrow to collect sacks of chicken feed. Much of the feed is based on the pumba that is a by-product of the numerous maize milling operations mixed with some *dagaa* and other high protein content such as blood from animal slaughtering.

The main challenges for these *wakulima* are avian diseases as well as the poor quality and high prices of chicks and feed. They are concerned that the government does not adequately

regulate and supervise the production and proper inoculation of chicks or the production of feed.

In early 2013 Samuel restocked with 100 new layers as his old flock was not performing so well. By October, however, his chickens and his sister in law's flock had been sold after some of the chickens got sick. Samuel and his sister-in-law intend to restock again.

There is a wider debate on the ecological sustainability of animal production for food with a growing world population, especially due to high grain consumption with all its negative impacts and feed to food conversion inefficiencies (Weis, 2013). This critique is stronger for meat than for egg and milk consumption and, while proving this requires a more in-depth and technical study, I believe that the form of egg farming described here has a very limited 'hoofprint'.

#### **7.4.3. Public transport**

Interestingly, public transport with its regulated fares, that is also flexible enough to allow goods like trays of eggs to be carried, enables aspects of this food system by linking the periphery with other parts of the city. Public transport in the form of *daladalas* were used by Mariam and Hadija for transporting eggs and this seems to be particularly important for women who are rarely seen riding bicycles in Dar es Salaam.

#### **7.4.4. Supermarket suppliers**

My efforts to obtain information from several of the egg suppliers to Shoppers Supermarket did not succeed due to their apparent reluctance to share information. One of the egg suppliers was, however, cooperative and was visited in February 2012 and on a number of occasions over the following years. The heart of that business turned out to be an entrepreneurial woman, Viola, who works from a small shop in an alley at the back of the Shekilangu people's market. Viola buys eggs from small and medium-sized farms in Bunju, Bagamoyo, Kiluvia, and Kibaha—all peri-urban or rural areas on the periphery of Dar es Salaam, but further away than Kitunda. She phones the *wakulima* who deliver their eggs to her. In early 2012, she was paying TSh 6,000 (\$ 3.64) per tray of 30 eggs, but the prices had been higher in December 2011, lower before that, and continued to fluctuate at around TSh 6,000 (\$ 3.64) per tray.

Viola saw an opportunity and started selling to Shoppers and Shrijees supermarkets in 2008. She did not sell to Shoprite because she said "they delay a lot in paying, they send to South Africa to get it approved and only pay after more than a month...while I wait life is tough". This is another example of Shoprite's inaccessibility for local small-scale suppliers (Crush and Frayne, 2011; Abrahams, 2009). Viola thus sells to Shoppers and Shrijees, which both take stock on credit, but pay after only a few days. She also buys from the *wakulima* on credit, paying them after a few days, but she says if she could get access to more capital she would pay cash up front in order to secure larger and more consistent supplies.

When Viola gets an order from Shoppers, which is once or twice a month, the eggs that are delivered to her are packed by her and her children into plastic trays imported from Kenya. They stick labels on the trays and put them into cardboard boxes. Her usual orders for Shoppers are for 300 trays of six eggs. They sometimes also order trays of 15 or 30 eggs. When packed in trays of six, the cost of the packing materials comes to TSh 1,333 (\$ 0.81) per 30 eggs. Viola also arranges and pays for the transport to deliver the eggs to the supermarkets. In February 2012, she was selling a tray of six eggs to Shoppers for TSh 1,600 (\$ 0.97). In a neighbouring shop Viola was selling the same eggs at TSh 6,500 (\$ 3.94) per tray of 30 in a very similar operation to that of Mama Hamisi and other egg wholesalers I have visited. Prices fluctuated around these levels during the research period and at some points Viola also varied her prices according to different egg sizes.

## **7.5. Egg pricing and accessibility**

### **7.5.1. The eggs**

Eggs were purchased from all the retail outlets mentioned. They were weighed and eaten. Among the cheaper eggs there was no significant difference in the weights and other qualities of the eggs between suppliers, thus making price comparisons between these eggs valid. The more expensive 'local eggs' are smaller and their yolks are significantly more yellow than the other eggs. Other eggs, including imported eggs and eggs claiming to have more yellow yolks, were available at various times at substantially higher prices. Given the erratic availability and the substantially higher prices of these eggs they are not a central part of this analysis as my focus is on the more affordable eggs that sell in larger volumes.

### **7.5.2. Prices for the eaters**

Comparing the prices over the two-year period of the study (Table 8), it is clear that there is a competitive market; and that egg eaters in The Street and across the city have a wide range of options. Prices between all the egg sellers, with the exception of the supermarket and the chip seller, fluctuated up and down within an approximately 20% range. Mangi sells at a price above the wholesaler, but not much higher or buyers will take the extra walk to get cheaper eggs. Conversely, if wholesalers like Mama Hamisi with her mark-up of as little as TSh 500 (\$0.30) per tray do not offer a better deal, customers, apart from those nearby, will not walk the extra distance and the wholesalers will not sell the volumes they need to sustain their businesses. Customers can always turn to Hadija, Mariam and similar traders for eggs.

Mama Hamisi maintained the lowest per-egg price, equalling the prices of other traders at times if one bought small quantities, but always cheaper than anyone else if buying a tray of 30. While her prices fluctuated slightly (in a range of around 20%) during the period of research, by October 2013 she was again selling eggs at the same price she had been early in 2012. She had also innovated by charging different amounts for small and large eggs. She

complained of stiff competition and there is little doubt this kept her prices low, but she was still in business.

**Table 8 - Retail prices for eggs in Dar es Salaam, November 2011 to October 2013.**

	TSh per egg	TSh per 6 eggs	TSh per 30 eggs
<b>Eggs bought end November 2011</b>			
Hadija's house	250.00	1,500.00	7,500.00
Mangi's Duka	250.00	1,500.00	7,500.00
Shoppers: cheapest option for 6	325.00	1,950.00	9,750.00
Shoppers: cheapest option for 30	280.00	1,680.00	8,400.00
<b>Eggs bought February 2012</b>			
Mama Hamisi's shop: less than 30	250.00	1,500.00	7,500.00
Mama Hamisi's shop: tray of 30	216.67	1,300.00	6,500.00
Hadija's house per egg or tray of 30	250.00	1,500.00	7,500.00
Mangi's Duka	300.00	1,800.00	9,000.00
Shoppers: cheapest option for 6	350.00	2,100.00	10,500.00
<b>Eggs bought April 2013</b>			
Mama Hamisi's shop: less than 30	250.00	1,500.00	7,500.00
Mama Hamisi's shop: tray of 30	233.33	1,400.00	7,000.00
Hadija's house per egg or tray of 30	250.00	1,500.00	7,500.00
Mangi's Duka	300.00	1,800.00	9,000.00
Shoppers: cheapest option for 6	366.67	2,200.00	11,000.00
Shoppers: cheapest option for 30	300.00	1,800.00	9,000.00
<b>Eggs bought October 2013</b>			
Mama Hamisi's shop: less than 30	250.00	1,500.00	7,500.00
Mama Hamisi's shop: tray of 30 small	216.67	1,300.00	6,500.00
Mama Hamisi's shop: tray of 30 large	233.33	1,400.00	7,000.00
Hadija's house per egg	300.00	1,800.00	9,000.00
Hadija's house per tray of 30	266.67	1,600.00	8,000.00
Mangi's Duka	300.00	1,800.00	9,000.00
Shoppers: cheapest option for 6	466.67	2,800.00	14,000.00
Shoppers: cheapest option for tray of 15	366.67	2,200.00	11,000.00

Shoppers: cheapest option for tray of 30	350.00	2,100.00	10,500.00
Mariam's delivery per tray of 30	250.00	1,500.00	7,500.00
Lowest Shoprite prices during 2013			
Cheapest option for tray of 6	500.00	3,000.00	15,000.00
Cheapest option for tray of 30	373.33	2,240.00	11,200.00

**Notes:** The amounts underlined indicate the units for which the price was determined (for example, per egg at Mangi's and usually per tray of six eggs at Shoppers). Prices are compared per egg, per 6 and per 30, even though, for the amounts shown in italics, you could not actually buy that quantity for that price (that is, where a price per egg is only available if you purchase a tray of 30 you cannot buy 6 at that price).

Mangi kept prices in the range of TSh 250 (\$ 0.15) to TSh 300 (\$ 0.18) per egg, ending the two-year period with prices at the 20% higher TSh 300 (\$ 0.18). This jump of 20% is to some extent determined by the fact that the smallest denomination coin in circulation in Tanzania is TSh 50 (\$ 0.03). When Mangi bought eggs at TSh 7,000 (\$ 4.24) a tray he usually sold them at TSh 250 (\$ 0.15) each for a gross profit of only TSh 500 (\$0.30) a tray. When Samuel's per tray price went to TSh 7,500 (\$ 4.55) Mangi had to adjust to make a profit and increased his price to TSh 300 (\$0.18) an egg, making for a three times better gross profit per tray of TSh 1 500 (\$ 0.91). He never sold trays or larger quantities at lower prices perhaps as most of his customer buy in small numbers and his small store did not make it advantageous for him to stock higher volumes at a lower profit margin.

The chip seller kept his prices the same for two years absorbing the cost increases even though the price of eggs and potatoes fluctuated. Competition, including the fact that a new chip seller opened a stall only 100 metres away on the same road, probably contributed to this keen pricing.

Egg prices at Shoppers Supermarket rose steadily. They started as the most expensive option (aside from other supermarkets that were further away and had even higher prices) and the prices steadily increased ending at 43% more expensive for trays of six eggs at the end of the two-year period when I focussed on eggs. This trend continued for the following years of my studies. This indicates that the supermarket is insulated from competition posed by other egg sellers, perhaps due to catering for a different market. Their customers almost all use motorised and mostly private transport, many stop on their way from work and buy a number of goods at the same time, including more imported and luxury items than the average Dar es Salaam resident. Perhaps they have bought into the comforts and lifestyle associated with supermarkets. It would certainly appear that these eaters are not very price sensitive on basic food items and are possibly also not exposed to the lower prices they could get in local shops and markets.

At times, it was possible to buy trays of 15 or 30 eggs at Shoppers for relatively lower prices than the normal options. While this worked out cheaper per egg than the trays of six from the same store, these eggs were only once over about four years as affordable as the eggs from Mangi's Duka, and were always considerably more expensive per egg than options available from other traders such as Mama Hamisi.

As can be seen in other chapters of this thesis, it is not only eggs that are more expensive in the supermarket than in a range of other outlets. A key element of sustainable development, as defined in the 'Brundtland Report', is meeting the needs of people who live in poverty (Brundtland, 1987). For the poorer eaters in Dar es Salaam low prices are a key factor. The supermarkets are clearly not meeting, or even trying to meet the needs of these citizens. They are overpriced, inaccessible and inflexible, offering no credit facilities. Luckily for these people, the *duka* sells cheaper eggs, and you can get even lower prices if you knock on Hadija's door or walk for fifteen minutes to Mama Hamisi's egg wholesaler and buy a tray of eggs.

### 7.5.3. Accessibility

Almost as important as price for the buyer of eggs is the accessibility. Mangi's Duka appears to be the main source of eggs for people in The Street and equivalent *dukas* populate almost all streets in Dar es Salaam. Even when his prices are higher Mangi is, probably due to convenience and loyalty, selling more eggs than Hadija sells from home. Mariam delivers her trays of eggs to regular customers in the neighbourhood including a few in The Street, but she only sells trays of 30, therefore to people who can afford that and have storage space and of course you can only buy from her when she is there. You can call on her cell-phone and ask her to come, but that will likely be the next day unless you call early in the morning. Shoppers Supermarket is selling mostly to people with motorised transport, and draw customers from a larger area. They claim a turnover of around 3000 eggs a week (although information from suppliers indicates that this is a high estimate), which is not large considering the size of the shop and that a local egg shop, such as Mama Hamisi, sells twice that amount.

When compared to other retailers the *duka* clearly provides superior benefits to the eaters in terms of accessibility related to: (1) proximity, Mangi's Duka or another similar store, is always within walking distance; (2) the flexibility of being able to buy small numbers of eggs from one upwards (as in Tabu's "two, two") at a competitive price; and (3) potential access to short-term interest-free credit. As has been noted elsewhere in this thesis, such factors are crucial for people surviving on limited and sporadic incomes, living in cramped spaces with uncertain tenure security.

### 7.5.4. Price for the egg producers

While egg eaters benefit from low prices, egg *wakulima* are, of course, made wealthier and more able and more motivated to maintain production and supplies if they receive higher prices for their eggs.

From among the sample of egg suppliers looked at in my study, Shoppers Supermarket provided eggs at the highest price to eaters, but this did not result in better returns for the egg producers (Table 8 and Figure 3). Egg producers supplying the Shoppers Supermarket through Viola appeared to be getting similar prices to others, but on worse terms in that they had to transport the eggs to Viola and provide them on credit.

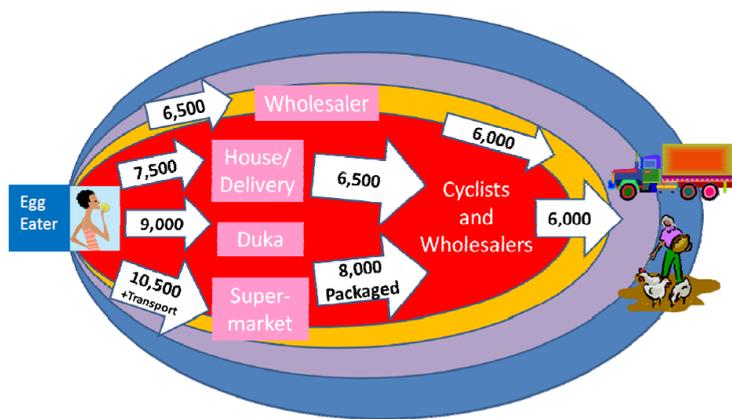
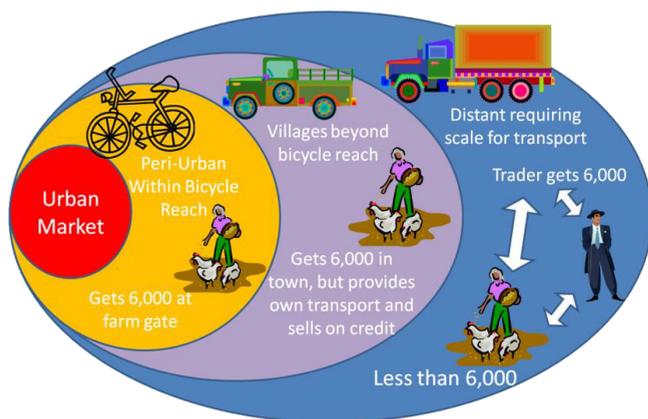


Figure 3 - Simplified diagram showing amounts paid by eaters per 30 eggs to different retailers and amounts paid to producers or other distributors, Dar es Salaam, February 2012.

Figure 3 shows the prices paid per 30 eggs in February 2012. While prices fluctuated during the research period this basic pattern of benefit remained similar. Each sphere represents the situation of different producers according to their locations and links to the market.

In looking at the benefits to egg producers related to the different modes of egg supply, a significant spatial dimension emerged (Figure 4). Peri-urban small and medium size egg producers who farm within reach of bicycle or public transport get TSh 6,000 (\$ 3.64) at their farm gates. Egg producers who farm beyond bicycle range, but close enough for motorised transport (public or private) to be feasible, get TSh 6,000 (\$ 3.64), but usually have to cover the transport costs and at times have to sell on credit. Producers who live well beyond the city or produce quantities that require larger scale transport, depend on traders, *dalalis* and transporters and receive less for their eggs. Traders get the TSh 6,000 (\$ 3.64) but take a cut to cover their own costs and to make a profit.



**Figure 4 - Simplified diagram showing different relationships to the urban market and benefit of egg producers affected by location.**

Essentially egg producers have access to a number of different patterns of distribution and retailing that connect them to Dar es Salaam’s growing urban market and which offer them different levels of return. These patterns of provisioning also create numerous income earning opportunities that on the whole have fairly low entry barriers, such as bicycle or public-transport-based distribution channels. There is also space for local entrepreneurs to start larger enterprises, such as the *dukas* and egg wholesalers. Low entry barriers for small business owners not only enable existing operators to get back into or continue in business if they suffer losses, but also make it possible for new operators to replace any who drop out and to expand the sector to meet growing needs. This all makes the system as a whole quite sustainable in that it is capable of fulfilling its role even as demand increases.

## 7.6. Green vegetables

Common ways that the majority of Dar es Salaam residents obtain green vegetables are through door to door sales of green vegetables, the other two main sources are the people’s markets where numerous stall holders sell them and the small vegetable and fruit selling stalls (*genge*) scattered throughout the city. The *genge* are not as numerous as the *dukas*, but there are enough of them that you will rarely be more than a few minutes away from them or a market. For those living near to areas of urban agricultural production it is possible to go straight to the fields to buy. The retailers all get their supplies from wholesale markets and urban *wakulima*. *Mchicha* that takes about 28 days to grow from seed and grows all year round is a very popular crop that gives a consistent income to the urban *wakulima*.

### 7.6.1. Vegetable sellers

#### Lingo by Bicycle

“Mchichooooo”, the booming voice rings out down The Street, clearly audible from inside my house. He is one of three people, two on bicycles one on foot, who deliver fresh green vegetables in The Street every day. This is the same street where Mangi’s Duka is and which

was the starting point for the egg research discussed in this chapter. Lingo is cycling slowly along, stopping when customers come out of their houses (Photograph 23), a woven reed basket on the back of his bicycle loaded with green vegetables, including the ubiquitous *mchicha* that forms the core of his advertising call. He is also selling spinach, cassava leaves, pumpkin leaves, sweet potato leaves and mnavu (black nightshade). At TSh 100 (\$ 0.06) a bunch *mchicha* is one of the most affordable foods around, delivered to your door daily it is also one of the most accessible. These crops form an essential part of the diet of millions of the poorer residents in Dar es Salaam and are the main stay of urban horticulture in Dar es Salaam. Flood valleys alongside rivers, larger peri-urban plots and bits of ground not built on around the city are frequently found with small fields of *mchicha*.

Lingo has a daily bicycle round through parts of Msasani and Masaki. He delivers to small restaurants and other regular customers, stops at the more affordable apartment complexes, such as those owned by the National Housing Cooperation, and also sells to domestic workers, for their own and their employers consumption, in these relatively wealthy areas.

Just after midday, Lingo has sold about two thirds of his stock of around 200 bunches of green leafy vegetables and heads home to have lunch with his family and take a rest.

Lingo leaves home again just after 5 pm, this time cycling straight to a spot on the side of the road, not far from the Mikoroshoni Market, where he sets out his remaining stock on two upturned tomato crates stored at a nearby house. He carefully rinses the vegetables and stacks them on the crates, talking to his neighbouring traders and passers-by as he works. The road is a dirt track, just wide enough for a car to pass, but very few do, it is mostly used by pedestrians, with a few bicycles, motorbikes and push carts. A constant stream of people is passing, many coming from work, some stopping and shopping. Lingo stays on the roadside until his remaining stock is sold.

Lingo buys *mchicha* every morning directly from Mama Mchicha (see below) who grows it on the land surrounding the small apartment building where she lives. Lingo also goes every morning to the large vegetable market in Ilala where he gets the other vegetables that he sells. It is half an hour, *daladala* ride to the Ilala market. From the early hours of the morning (3 am onwards) the streets around the main market buildings are crowded and noisy. The market has long overflowed from the central market area with its zinc roof, stalls and surrounding shops. Now all the surrounding streets have become a crowded part of the market with buyers working their way through the narrow space left between lines of sellers.

Most of the traders in Ilala either buy vegetables from trucks that stop in the side roads around the market after coming overnight from Morogoro, Bagamoyo, Tanga and other regions that are hours (not days) away, or they buy direct from *wakulima*. The trucks, almost all the ten-ton Mitsubishi Fuso, are loaded with vegetables from a number of small *wakulima* or traders, the sale of the goods facilitated in Dar es Salaam by *dalalis* for a commission. Other traders go directly to farms in peri-urban areas - such as Kitunda, Kibaha and

Kigamboni – and a few are *wakulima* themselves bringing their own crops from the same areas or from other urban agricultural plots such as those along the river where Sunday farms (see below).



**Photograph 23 - Lingo on his bicycle selling green vegetables to a customer.**

### **Gengi**

Around the corner from The Street, just next to the chip seller mentioned above, is a typical *genge*, vegetable stand, comprising a large wooden table and surrounded in part by a wire mesh which gets used to hang some of the vegetables on and to provide some form of security for the vegetables and items stored inside. The owner of the *genge*, Baba Zamara, goes in the early hours of the morning to buy vegetables at the Kariakoo market in town and is back and ready to sell before 7 am. What he sells varies a bit with the seasons, but he is always selling *mchicha*, other green vegetables, tomatoes and onions. He is also normally selling other forms of green leafy vegetables like spinach as well as garlic, chillies, cabbage, aubergine, sour tomatoes, coconut, potatoes, banana and mangoes. Baba Zamara, stays all day, often chatting to the chip seller and their customers next to him and taking a nap sometimes if business is slow. His wife joins him in the morning selling tea and chapatis just next to the *genge* to people who sit on the rough bench that Baba Zamara uses, or on a mat that his wife puts on the ground.

During the period of field research another small *genge* started in The Street a few houses away from Mangi's Duka. The residents in one house set up a table with an umbrella in the street outside their house and bought vegetables at a people's market to sell. The range of vegetables was similar to those sold by Baba Zamara, but significantly they did not sell *mchicha*, perhaps because of the competition from deliveries made in the street as mentioned above.

### **Fahima selling at the market place**

Fahima sits on a bench behind the typical high rough wooden table that makes up her stall near the middle of the main trading area of the Mikoroshoni Market. On the table are

bunches of the different green-leaf vegetables that she sells. On a typical day Fahima is selling: matambele; kisamvu (Cassava leaves); majani ya maboga (pumpkin leaves); majani ya kunde (cow pea leaves); Chinese spinach; and of course, *mchicha*. Many customers buy the vegetables as they are, others are busy and want them prepared and ready to cook. Fahima has several large plastic bowls and to the side of the table is a wooden pestle and mortar about 50 cms high and 30 cms wide. Fahima uses the bowls when she slices up the vegetables for customers. The pestle and mortar is used for crushing kisamvu leaves.

Customers pay Fahima a little extra for preparing the vegetables and sometimes she does that for free, especially for regular customers. She also keeps some bunches aside and prepares the vegetables for some of her regular customers as she knows what they want, so everything is ready when they come past to collect.

Several dozen of the stall holders around Fahima in the market are selling the same products and when needed they also provide the same service of cutting up or crushing the leaves for their customers. This is typical of the people's markets across Dar es Salaam where there are different sections of the market for the different products. "Nearly all the traders are friends" Fahima tells me "competition is there, but I have not seen much". She talks about how people collaborate and says "we use one price, we buy one price". Asked how she then wins customers, Fahima says "I talk and laugh, business depends on behaviour". She also says "people have their customers that they are used to".

Fahima buys all her stock at the Ilala market. She goes there every day, except Sunday, leaving at 3 am on a *daladala* that comes to pick up the traders in the area where she lives. Fahima says "the *daladala* driver knows his passengers. He even has my number and calls me if I am not there". Once she has bought all she needs she hires a motorised *gota* together with between 10-15 other traders to take her stock to Mikoroshoni. They don't have a set group or three-wheeler they use for this journey, they arrange each day depending on the stock people have.

Fahima explains that she can get all the vegetables she sells all year around; "there is no season for these as I can get them from all places, at Ilala people bring from all over, like from Dodoma, Morogoro, Iringa, Kibaha". Of these places Kibaha is the closest, less than 100 kms away and Iringa the furthest being 500 kms away. Some she buys from traders and some direct from *wakulima*, especially *mchicha* and matambele come from *wakulima* in Dar es Salaam who come to the market, but she says "you can also get *mchicha* from Dodoma". Fahima buys stock of about TSh 35,000-40,000 (\$ 21.21 to \$ 24.24) per day. From this she typically gets a profit of TSh 10,000-12,000 (\$ 6.06– \$ 7.27) per day after all costs. On a bad day, she struggles to reach TSh 5,000 (\$ 3) profit, but on good days she can earn up to TSh 20,000 (\$ 12.12).

By around 6 am Fahima is at Mikoroshoni setting up her stall ready for the early morning customers. She normally leaves the market by 6 or 7 pm in the evening. It is a long day, but it would be incorrect to think of Fahima as being at her stall or working hard all day. She has

breakfast, has lunch, goes to do other chores, sometimes goes home to check on her children in the afternoon and sometimes sleeps a bit during a quiet part of the day. When at the stall there is a lot of chatting with neighbours and friends who pass-by.

A typical transaction that I observed involved a woman arriving and Fahima and the customer greeting each other and chatting in their vernacular language of Kihehe. The woman buys a bunch of Chinese spinach and Fahima cuts it up for her and puts it in a plastic bag. All the time, while the decision to buy Chinese spinach is made and Fahima is cutting the spinach, the two women are talking, exchanging news of their families, discussing issues in the neighbourhood, etc.

Fahima is 33 years old and from Mfindi in Iringa region. She was born there and she still has a bit of land there inherited from her father when he passed away. She completed her primary school education and first came to Dar es Salaam in 2002 when she was 20 years old. She stayed with her brother before she got her own place. When asked why she came to Dar es Salaam, Fahima said; "I wanted change of environment". She now has three children who are all going to school and she lives with them in rented rooms. As she is at the market a lot the neighbours keep an eye on the children and call her if there is a problem.

Fahima started selling vegetables at the Mikoroshoni Market in 2006. She started out selling items like tomatoes, potatoes, onions, garlic, etc. Three years ago, she shifted to selling the green vegetables. Her reason for the change is that the green vegetables have a quicker stock turn-over, it is easier to track the profit and there are less losses due to the vegetables rotting or going off. She said, "with green vegetables you sell all of them every day. You can check the profit every day".

Neighbours played a key role in getting Fahima started at the market. First one neighbour told her there was an opportunity; he showed her the market and also where to buy at the wholesale markets, like Ilala. She got the space through another neighbour who knew someone who was leaving the market and still had a stall there. Fahima now rents the stall for TSh 10,000 (\$6.06) per month from the woman who has left, but is still seen as the owner of the stall. Fahima also pays the TSh 200 (\$0.12) per day market fee and tax. Fahima says she has asked for her own space, but been told there is no space available at the moment.

### **7.6.2. Mchicha farmers**

#### **Mama Mchicha**

Mama Mchicha, who Lingo buys *mchicha* from, started to grow vegetables in 1990. She uses the land around the small apartment buildings where she and her husband and three of their four children still rent an apartment and live. They do not pay for the use of the land, "it is just there, we clean the dirt" she says. Mama Mchicha says she started farming due to "maisha" (life). "You know what, my husband worked at TIRDO [Tanzania Industrial Research and Development Organisation], his salary did not meet our needs, so I had to try something, I tried farming, I found the vegetables agreed and I continued to farm", Mama

Mchicha elaborates. In 1996 her husband left the job he had to join her in farming. “We used to farm the whole area”, she tells me pointing to some trees a little distance away, “until they built more”. The potential high returns from such vegetable growing have been noted by others, with it being estimated that in 1996 growing *mchicha* on 500 m<sup>2</sup> could generate more income than a government salary (Jacobi et al., 2000: 271). Now they grow only *mchicha* because the space is small, but they used to also grow spinach, aubergine, maize and some beans and other crops. The land they are on still belongs to TIRDO, Mama Mchicha thinks that sometime they will have to go either because of TIRDO or the nearby hospital that is expanding.

Mama Mchicha is working on the land every day, her children the youngest who is nearly finished at high school, assist sometimes and there is another relative who is paid to help as well. They plant almost every day rotating the crops across twenty small plots and are able to harvest and sell almost every day (Photograph 24). There are only one or at most two days in a month, when she is not able to harvest. They do not use any chemical fertilisers, rather using chicken manure that they get from chicken keepers in the suburb of Masaki. “When we started, they had lots of chickens, but now it has reduced a lot. People sold the places and others don’t carry on with chickens” Mama Mchicha complains. Masaki is one of the richest suburbs in Dar es Salaam, increasingly occupied by expatriates - such as Dale introduced in Chapter Four -, and rich Tanzanians.



Photograph 24 - Agriculture in valley land in Dar es Salaam and woman *wakulima* harvesting *mchicha*.

Seeds are bought from traders who come from Morogoro, but if they do not come Mama Mchicha buys in Kariakoo. She does not seed her own plants as it takes too long to get the seeds, uses too much land and does not pay well. In the rainy season when there are many pests, she sometimes uses pesticide. This is also bought in the big market in Kariakoo.

The *mchicha* is irrigated with water from a rough well dug at the bottom of the land and surrounded by reeds. Sometimes they also use water from the tap, but they have to pay for the tap water.

Most days Mama Mchicha harvests 500 to 600 bunches of *mchicha* most of which are sold to regular customers who are traders, like Lingo, who come early in the morning. She sells the *mchicha* for TSh 100 per bunch, or discounted for some of her regular wholesale customers, "I reduce the price because they collect in bulk, and also we know each other". After these buyers are gone Mama Mchicha loads a *mkokoteni* (cart with bicycle wheels) with *mchicha* and walks around the neighbourhood selling door to door. Thus, her gross income can be around TSh 1,500,000 (\$909) per month and her cash expenses are quite low, the main input being labour.

With the money from the vegetable growing Mama Mchicha has built several houses that she rents out to tenants and she paid for her four children to go through school. The family also bought a *daladala* sometime ago when the vegetable business was better and they had more land. In 2003 the money from the vegetable selling enabled her husband to start a small shop. Now the shop is his business and the *mchicha* is still her business.

### **In the river valley**

The flat part of the Msimbazi Valley floor is over 200 metres wide at this point. From the bridge of the four-lane Kigogo Road one can see the city centre to the east with its new tall buildings, some of them under construction, standing out over the smaller and older apartments and offices. To the west the flat valley land goes on into the distance, a patchwork of small plots of land in different shades of green and brown with coconut trees scattered among them. On either edge of the valley, starting from where the flat land becomes a slope upwards, are houses built close together, mostly of grey cement blocks with grey or rusty zinc roofs. On the north side of the valley between the green fields and the grey houses is the river. When there are very heavy rains the whole valley floods, taking away crops and sometimes the houses that have been built too low down the slopes.

There are narrow footpaths, only suitable for walking or cycling in single file, passing between the fields. I go down the road embankment, cross a drainage ditch, and follow one of these paths. There are men and women working in different fields and some sitting under trees. In one field Sunday works bare chested, turning the sandy looking soil with a hoe. He grows various green vegetables on approximately one acre of land that he has divided into seven pieces in order to rotate the crops. He has been farming here since 1980 when he took over the land from his grandmother who was allocated it soon after independence as part of initiatives to encourage more food production.

Sunday has *mchicha* growing on four of the seven sections of his land. The *mchicha* is of different sizes as he spaces the planting in order to also space the harvesting and selling. One piece of land is fallow and another he is digging up in order to plant more *mchicha*. He

is also growing pumpkins on once piece, more for the leaves than the pumpkin itself although that to is eaten or sold. Sunday's land is about 100 metres from the river. He irrigates by bucket with water from a rough well that he and nine other *wakulima* have dug together as a group. Water seeps into the well and they also dug a channel to take water from a spring on the edge of the valley to supplement that in the well. Sunday buys the seeds at a shop in Kariakoo and uses cattle and chicken manure that he gets from livestock keepers. He does not use any chemical fertiliser.

Sunday sells directly from the fields to some people and he harvests at least once a week and sells at the Ilala market, which is within walking distance of his field and home.

### **Klara**

Since I moved to Dar es Salaam I had noticed attractive gardens planted with vegetables all year around on the approximately 80 metre wide strip of land between the road and houses to the west of the USA embassy. This strip of land with the gardens was about 500 metres long with a water tank and small shed for tools in the middle and a few trees creating patches of shade. Then one year a small shopping complex was built along with a tar car park covering almost half of the gardens.

Most of the time there were a few people working in the fields and a steady stream of people from the surrounding residential areas coming to buy *mchicha* and other harvests. There were often a few small children coming with their parents to the fields. These children spent time with the different *wakulima* who were farming there and played in the shade of the trees. Some of the buyers bought just for cooking and eating at home, others bought to resell as part of their own small food businesses.

On one morning, at about 9.30 am, Klara was watering a field of *mchicha*. She had finished for the day and was going home. She asked for some *mchicha* from the woman in a neighbouring field, "just for eating" she said and was given a bunch that was just harvested. There was no payment made, those with ripe *mchicha* often give bunches to the others and receive in return when they needed and did not have any ready to harvest.

Klara works on land that belongs to Saidi. He has some land in Tanga where he grows mostly sesame and he stays there much of the time. When he is in Dar es Salaam he also works on the *mchicha* growing alongside Klara. The income from the crops sold belongs to Saidi and he pays Klara between TSh 10-15,000 per harvest. They buy seeds in Kariakoo and get chicken manure from a chicken keeper who lives and keeps her chickens nearby. Klara and Saidi also sometimes hire a casual labourer to help ploughing the land. They sell all the *mchicha* from the fields, which are well located with residential areas all around and close to a busy road.

Klara used to have her own land where she had worked from 2002 until building started on the land in 2011. The other thing that disrupted her farming was when her husband had a *bodaboda* accident and broke his leg. She stayed at home for a while to look after him. Eight

*wakulima* who had been farming lost land when the car park for the shopping centre was built. The land was treated as open land, so those using it were given no choice. Klara said they were told “you agree or disagree, you will go”. She is not angry saying “he did well” when referring to the shop owner and pointing out that some *wakulima* were given work at the shopping complex and some, including Klara, were given land to farm on in Kigamboni. The jobs given were doing cleaning or looking after the grounds, Klara pointed to a person who was watering trees outside the shops and said “they used to have land”. Kigamboni is on the other side of town and a ferry ride across the estuary. As Klara was looking after her husband she was not able to take up a job at the shops and the small piece of land (75 x 35 metres) she was allocated in Kigamboni was too far away from her and her customers for her to work on it. As she had no income she started working on Saidi’s land, at least it was accessible work for her with flexible working times, watering in the morning and sometimes in the evening and harvesting and planting as needed, but not every day. She is happy to have some income, but says she used to do much better when farming for herself on her own land and now she would be happier if she got a share of the profit. “To just receive wages is a problem” she says.

When the *wakulima* started on the site it was a rubbish dump. They cleared it and started to grow food. Then a borehole with pump and tank was provided in 2006 with World Bank money through TASAF (Tanzania Social Action Fund). Klara says it was a grant, they did not have to pay it back, it was because the government valued what they had done cleaning up the area that had been a dump. The *wakulima* use and look after the borehole and equipment together. Seven members of the group remain with land, five men and two women.

Klara was born in Rombo District, Kilimanjaro Region. When she first came to Dar es Salaam she had two children who she left with her mother after it did not work out with their father. She did odd bits of work, such as domestic work in other people’s homes and she lived with a sister. Then she started the farming and she was able to save money, rent a room, and bring her children to Dar es Salaam and send them to school here. “I paid all the fees with the money from the *mchicha*” she said. Now her first born has finished high school and Klara wants her to go to university. The second born she sent to a secretarial school for two years after they failed form four. She has a young son with her husband and this last-born child is in 1<sup>st</sup> grade at primary school. She is animated and proud when talking about what she has done with money from *mchicha*. She is despondent when she reflects on her current situation and the low pay and says she will go and ask for a job from the shop owners as her husband is now a bit better.

## **7.7. Conclusion**

The case of egg and green vegetable provisioning in Dar es Salaam demonstrates a fundamental sustainability in the symbiotic food system, with its many diverse actors who

in price and accessibility dramatically outperform the corporate modes of supply represented by the supermarkets and their supply chains.

The system and patterns of provisioning based on linking small-scale urban and peri-urban producers with small to medium-scale distributors and retailers have sustained egg and green vegetable supplies throughout the four years of this study in ways that kept these foods accessible and keenly priced. They have done so in a way that makes a positive economic and social contribution to Dar es Salaam and has little negative environmental impact. There is no reason to believe that this system of provisioning could not sustain and expand as demand for food continues and grows.

The small-scale peri urban egg *wakulima* linked by bicycle distributors to *dukas* throughout the city, is a particularly positive model in terms of economic inclusion, fresh and affordable egg supplies for eaters, cash in hand for the producers and limited negative environmental impact. It also has all the potential to grow through replication with there being little limit to further egg production on peri-urban plots and space for many more bicycles on the roads, especially if better provision is made for them. Likewise, the small urban and peri-urban vegetable *wakulima* selling directly to nearby eaters or through traders who pay cash to the producer and deliver straight from the field to the door, is providing economic opportunities for a wide range of people and an accessible supply of fresh vegetables to eaters. Better planning and protection of land for urban and peri-urban horticulture could allow for increased production of green vegetables in Dar es Salaam, but there is extreme pressure on land that, if not managed, limits the potential scale of local production.

For both foods there is urban and peri-urban production, but the full demand is being met through also bringing supplies from other regions. The bringing of the produce from further afield inevitably involves greater costs and transport related carbon emissions. The system still, however, allows for small actors to get a reasonable return with access to the city market and cash payments at the farm gate from traders bulking the produce and arranging the transport and selling in Dar es Salaam. The transport costs and carbon emissions are also kept low through the shared use of transport and the use of public transport. This trade provides important income earning opportunities for *wakulima* growing in other regions and the transporters and those working in the markets.

The system is functioning despite the poor infrastructure and extremely limited support from the state or any other actors. The road conditions are poor and there is no provision made for bicycles despite their important role in food transport and therefore the food business. The market spaces and infrastructure are poorly equipped to handle their important role in the essential supply of food and creation of income earning opportunities. There are almost no sanitation facilities and streets are turned into trading places as there simply is not enough space to handle the people and goods going through these markets.

Outlets such as Mangi's Duka, which was linked to bicycle deliveries, as well as traders who deliver from door to door, avoid the distance and "disconnecting" that often tends to

undermine trust between consumers and producers (Wiskerke, 2010: 370). Instead the level of connection that is evident in the symbiotic food system of Dar es Salaam is what many alternative food networks and urban food strategy initiatives aim to achieve (Wiskerke, 2010: 380–382). Mangi knows Samuel the cyclist who delivers the eggs and knows the part of town that he comes from. Regular customers at Mangi's Duka will see Samuel coming to the shop every two or three days and some talk to him as he transfers the eggs from the bicycle to the counter and sits to rest a bit and chat to Mangi before proceeding to another shop. If they want to ask where the unbranded and unpackaged eggs are from they can do so. In this case, they would be talking directly to one of the egg producers and Samuel is also in daily contact with other egg *wakulima* in his area. Likewise, Lingo sees the *mchicha* picked every morning and then delivers it direct to customers the same morning. Mama Mchicha, goes from harvesting to selling directly to customers herself.

Such connection does breakdown with the importation into the city of green vegetables and eggs from other regions. The connections with the retailers remain very personal, however, whether it is the door to door delivery from someone buyers know and see almost every day, or a stall holder in the market who asks about your children's health and schooling when you buy from them.

Many of the roles played within the system of egg and vegetable supply are highly gendered; the reasons for this and its full impact could be researched further. What is clear is that women continue to take primary responsibility for household reproduction, including child care, and this places certain constraints on them as well as at times threatening their economic activities due to the demands on time and money. A positive aspect of the food system is that women are able to work from home looking after chickens and growing vegetables and also able to work flexibly in environments where children can be accommodated. Examples being children in the *mchicha* fields and in the market as well as women being able to go home to take care of their children as needed with fellow stall holders and gardeners cooperating to make that possible.

The symbiotic food system supplying eggs, vegetables and other foods in Dar es Salaam involves multiple and differently connected actors who have choices. The dynamic and diverse patterns of provisioning give this food system its current sustainability. The notion of 'food chains', along with the related concepts of 'supply chains' and 'value chains', focusses on a linear and rigid linking of different actors based on assumptions that corporations, including supermarkets, are an inevitable part of the future. This ignores what is good for the eater and risks undermining patterns of provisioning that give producers better options. It is time to move away from thinking in this way and from promoting the appropriately termed 'chains', to valuing and encouraging the vibrant symbiotic food system that can be replicated and adapted, giving food eaters and producers more choices.

## Chapter Eight – Milk and the Value Chain

### 8.1. Introduction

This chapter address the supply of milk to eaters in Dar es Salaam from two main sources. The first is raw milk from urban and peri-urban dairy *wakulima* in and around the city. The second is pasteurised milk from the largest dairy company in the country, Tanga Fresh<sup>18</sup>. This does not look at the other main source of milk in Dar es Salaam which is the importation of long-life and powder milk. Two other initiatives started just as my time in Tanzania and period of field research came to an end. These were Dar Fresh from a company called Milkcom, which started with its own farm and processing in Kibada on the outskirts of Dar es Salaam (Milkcom, 2016). Dar Fresh focussed on fresh milk and *mtindi* (sour milk) in direct competition with Tanga Fresh, even using a similar name and packaging. The second was Azam Milk started by the Bakresha Group. Bakresha, with the brand Azam, is one of Tanzania's and east Africa's leading industrial groups. They started to import powdered milk and reconstitute and package it as long-life milk at a new plant they built in Zanzibar (Bakresha Group Ltd, 2013).

Milk is an important source of protein and calcium. One cup of milk meets 16% of daily value of protein needs and 29% of daily calcium needs (SELF Nutrition Data, 2016). Ensuring an adequate supply of milk in Tanzania and for the residents of Dar es Salaam has been an on-going concern for city leaders, health authorities and the various ministries responsible for the dairy industry for almost a century (Kasumuni, 2015; Ministry of Livestock Development, 2006b; Sumberg, 1997). This concern continues despite substantial increases in national milk production from 555 million litres in 1995 up to 1.38 billion litres in 2005. National per capita milk consumption is estimated at 39 litres per person per annum against the Food and Agriculture Organisation (FAO) recommended 200 litres. At the same time 15-20 million litres of liquid milk equivalent are imported per annum indicating a large amount of untapped market potential for local producers (Livestock Strategy, 2010: 11). Most of the national production (70%) is in the traditional livestock sector (Ministry of Livestock Development, 2006b: 3) and most of the consumption is of raw milk direct from the farm (Msalya, 2014).

Tanga Fresh is essentially a value chain development intervention and a relatively successful one that is referred to as an example in value chain development training (Match Maker Associates, 2014). It is therefore interesting to look at what can be learnt from Tanga Fresh about the value chain approach and to compare it to the local milk production through the symbiotic food system.

---

<sup>18</sup> For the information and insights on Tanga Fresh I have, in addition to my own field work in Tanga Region and Dar es Salaam, drawn on the work of a Master's Student, Rosanna Martucci, from the University of Amsterdam who I was co-supervising.

## 8.2. Dairy and Dar: an overview from the literature, statistics and policies

There is limited literature available on the dairy industry in Dar es Salaam, but James Sumberg gives a useful historical overview of dairy farming in and around the city starting from the 1921 establishment by the British colonial regime of the Temeke Dairy farm (Sumberg, 1997: 278). Sumberg makes no mention of the dairy industry around Dar es Salaam before the colonial interventions and outside the colonial influence during the colonial times. Indeed, it is hard to find much such historical information. What we do know is that domestication of cattle started in sub-Saharan Africa around 8,000BC (Marshall and Hildebrand, 2002) and evidence of cattle and other domestic animals has been found in Tanzania from earlier than 1,300BC (Ambrose, 1998). Clearly there was some form of dairy production and consumption before and alongside the colonial and later independent state interventions. In fact, the existence of a large dairy sector in Tanzania outside these interventions is consistently confirmed by the statistics, such as 96% of the cattle population being indigenous cattle breeds (Kurwijila et al., 2012: 1), 86% of marketed milk being sold to neighbours in the vicinity of the producing household and more than 95% of milk being marketed raw (ibid: 4). This is how people are used to consuming milk. This might help to explain some of the resistance to the interventions, such as a continued preference for unpasteurized milk and strong direct marketing networks and phenomena such as the supply of milk from Masai traditional herds (Martucci, 2015; Sumberg, 1997).

Interventions of the colonial and post-colonial state focussed on trying to get large scale commercial dairy production going, whether run by parastatal companies or private companies. These have had limited success and all ultimately collapsed, although their positive impact could be in the dissemination, by default as much as plan, of some improved breeds and other technology (Martucci, 2015; Sumberg, 1997). From the 1980s there was a change of approach that included encouraging more private sector involvement as well as starting to look at the development of small-scale dairy farmers (Martucci, 2015; Sumberg, 1997). The current government policy objectives for the dairy sector continue with the focus on the promotion of commercialization and market orientation including processing and packaging which clearly means pasteurizing (Ministry of Livestock Development, 2006b).

Probably the largest government and donor intervention focussing on milk for Dar es Salaam was the World Food Programme and Swedish government supported establishment of a milk processing plant which started operating in 1970. Before its bankruptcy in 1996, that plant ended up primarily reconstituting imported powder milk and bought little fresh milk from any Tanzanian producers, “indeed the production and distribution of reconstituted milk eventually became the central pillar of government’s efforts to supply milk to Dar es Salaam” (Sumberg, 1997: 282). This is somewhat ironic given the claimed focus of the government of that time on self-reliance (TANU, 1967).

One of the on-going themes in efforts to develop the dairy industry is “the predominance of direct marketing of milk” (Sumberg, 1997: 277). Sumberg describes this as “a problem that

was to plague Tanzania Dairies Ltd” and he states that “it is difficult for a modern dairy processing plant to compete and survive if some producers are allowed to go directly to the consumers with raw milk” (Sumberg, 1997: 279). This view is widely shared and has sustained over time. Dr George Msalya of Soikoine University of Agriculture is quoted in the Citizen newspaper on 8th June 2015 as saying “[m]ilk production and marketing face chronic problems of low output, compromised quality and dominance of informal market” (Kasumuni, 2015). The “informal market” is seen as a “chronic problem” along with low output and poor quality. This attitude seems to inform interventions that only give attention to the direct marketing of milk as a problem even though “86% of milk consumed comes direct from the farm” (Msalya, 2014). Clear reasons for the preference for direct marketing of raw milk are the lower prices to the buyers, higher prices to the *wakulima* and the preference that many people have for non-pasteurised milk (Martucci, 2015; Sumberg, 1999; Sumberg, 1997).

There are health concerns related to the consumption of raw milk, mostly related to the risks associated with pathogens that can exist in the raw milk, but are destroyed in the pasteurization process (Centers for Disease Control and Prevention, Undated; Oliver et al., 2009). Dar es Salaam residents and Tanzanians in general are, however, not the only people who prefer raw milk. A growing raw milk movement and some health studies argue that the risks are low and there are health advantages, such as reduction in asthma and allergies, to the drinking of raw milk (Sentenac, 2014; Benson, 2012; Waser et al., 2007). While many states in the USA ban the sale of raw milk completely, the European Union allows it and there are now a number of European countries with raw milk vending machines (Brasch, 2014).

There have been various efforts over the years to regulate small-scale dairy production in Dar es Salaam as part of strategies to develop the dairy industry. These efforts included a prohibition on the importation of dairy equipment and sales of fresh milk to anyone other than Tanzania Dairies Limited (formerly Coastal Dairies). This was in effect a prohibition, widely ignored as noted above, on the sale of raw milk (Sumberg, 1999). Despite all of this, urban and peri-urban dairy farming continued and in fact “irrespective of any government policy or programmes...there has been a dramatic increase in the number of grade dairy cattle kept within the city limits” (Sumberg, 1997: 285). These increases in both milk production and the number of improved dairy cattle, still in the hands of small-scale and often urban and peri-urban *wakulima* has continued (National Bureau of Statistics, 2012b; Ministry of Livestock Development, 2006b). From 1995 to 2008 the population of indigenous cattle in Tanzania increased by 25% to over 20 million and the population of improved dairy cattle increased in the same period by 145% to over 500,000 (National Bureau of Statistics, 2012b).

Others have identified the value of this small-scale urban and peri-urban production. Kivaria et al carried out interviews with 125 dairy producing *wakulima* in and around Dar es Salaam and concluded that the activity added to incomes and nutrition status for the

*wakulima* and the customers (Kivaria et al., 2006). They note the contribution to the local economy from the range of support industries such as veterinary services. Sumberg, with no reference to any data, states that urban dairy farmers entirely externalise health and environmental costs through activities such as “inappropriate disposal of manure” (Sumberg 1999: 196). Kivaria et al, in contrast, say “[t]he use of manure for gardening leads dairy keeping families to have a more assured food security. In addition, these families are producing surplus vegetables for sale, making them economically more independent than families without cattle” (Kivaria et al., 2006: 121). Kivaria et al identify a number of constraints faced by the urban dairy farmers and conclude that the performance of these dairy “enterprises” could be improved if a number of the issues identified are addressed. One of the biggest issues for the small urban *wakulima* and the rural *wakulima*, consequently also for Tanga Fresh, is the seasonal variation in milk production (Martucci, 2015; Kurwijila et al., 2012; Kivaria et al., 2006).

The Tanzanian Government’s National Livestock Policy has an objective “[t]o promote peri-urban livestock farming in order to provide employment, improve household income and food security” (Ministry of Livestock Development, 2006b: 35). This is encouraging, but it is unfortunate that the objectives of the policy in relation to “Dairy Cattle” (ibid: 11) and to “Milk Processing, Marketing and Consumption” (ibid: 10) do not mention direct marketing, the urban or peri-urban dairy farming, or traditional herds. This is despite all of these practices having been mentioned as important with the documents and the figures showing that they are even the dominant, in terms of scale, modes of production and marketing in the sector. The approach instead is commercialization, processing and packaging (Ministry of Livestock Development, 2006b: 13). Therefore, neither peri-urban, nor urban production, are core parts of the policy for developing the national dairy herd and milk production.

The National Livestock Development Strategy identifies opportunities including a “[r]eadily available domestic market for livestock and livestock products due to high population growth, increased urbanization and high economic growth all of which stimulate higher demands for animal products” (Ministry of Livestock and Fisheries Development, 2010: 18). The livestock development strategy document contains one strategic intervention related to peri-urban dairy farming; to “[b]uild the capacity of LGAs [Local Government Authorities] in identifying and allocating land to promote peri-urban livestock farming” (Livestock Dev Strategy, 2010: 22). Like the policy, the strategy sets no objectives for urban (as opposed to peri-urban) livestock keeping although they note the activity.

In 1993 there were estimated to be 18,000 dairy grade cattle in the Dar es Salaam Region, “with perhaps an additional 5,000 in adjacent areas” (Sumberg, 1999: 192). The 2008 National Sample Census of Agriculture found 24,372 improved dairy cattle in the Region of Dar es Salaam (National Bureau of Statistics, 2012b: 14) out of a total of 32,398 cattle in Dar es Salaam (ibid: 11). Interestingly, given that it is almost exclusively urban and peri-urban, Dar es Salaam was found to have the highest daily yield per milking cow (8 litres wet season and 6 litres dry season) of any region in the country. This is thanks largely to the higher

proportion of graded improved dairy cows. Across the country dry season production was around 33% less than the wet season production, but in Dar es Salaam and Tanga it was about 25% less, the production less affected due to the higher proportion of improved dairy cattle and cattle keeping practices in these regions (ibid: 32-33). The average herd size in Dar es Salaam was 5 head of cattle and nationally 72% of herds are 10 or less cattle (ibid: 12).

Pwani Region completely surrounds the geographically much smaller Dar es Salaam Region and is the source for quite a lot of raw milk brought into Dar es Salaam. Pwani region had 255,258 cattle of which improved dairy cattle were 28,507. The average daily yield per milking cow was 4 litres in the wet season and 3 litres in the dry season (ibid).

Given that approximately 35% of the herds are lactating cows (Kivaria et al., 2006), the total milk yield in Dar es Salaam Region, based on the 2008 figures, would be in the region of 78,000 and 51,000 litres per day for the wet and the dry season respectively<sup>19</sup>. In Pwani it would be in the region of 350,000 and 260,000 litres per day, for the wet and dry seasons respectively.

I am aware that some of these figures are getting dated, but there are no more recent figures available with this level of detail. What one can see around Dar es Salaam is the large number of places and ways to buy raw milk and the large number of livestock supply shops selling veterinary products, feed and supplements for cattle and other animals. This also illustrates the continued cattle keeping in and around the City.

### 8.3. Findings for dairy in Dar

As has been noted in the academic literature and policy documents, most milk consumed in Dar es Salaam is raw milk, sold through some form of what has been referred to as direct marketing (Kurwijila et al., 2012; Ministry of Livestock Development, 2006b; Kivaria et al., 2006; Sumberg, 1999). Fresh raw milk is a strange commodity in Dar es Salaam, most foods have a few distinct types of outlets or distributors, but milk is found in very different places. First there are the dairy *wakulima* who sell from their homes where the cattle are kept. If the dairy *wakulima* is on a main road the direct buyers include people from further afield who happen to travel that route, but mostly customers are from the immediate vicinity. In a number of peri-urban areas it was possible to simply ask people I met where I could get milk and they would direct me to a house where it was known dairy cows were kept. The lack of any signs promoting the sales confirmed how much this is a word of mouth business, perhaps a hang-over from the days when it was illegal to sell raw milk. Milk is frequently sold to people at their offices by colleagues or a trader who comes to the office selling to regular customers they have built a relationship with. I have found milk being sold from guest houses and at bars. There are certain shops that sell raw milk, but it is not sold at most regular *dukas*. There are particular places on the side of the road, unmarked places, where

---

<sup>19</sup> Yield figures calculated by author based on the 2008 National Sample Census of Agriculture (National Bureau of Statistics, 2012) and the survey carried out by Kivaria et al (Kivaria et al., 2006).

people have got to know milk is sold, normally early in the morning in a form of local milk market. There are some bicycle and increasingly motorbike distributors who buy milk from peri-urban dairy *wakulima* and, in very much the same way as the egg distributors (Chapter Seven), sell to customers they know, often to cooked food vendors who sell hot milk or milky tea. A place where you can always find milk is at people's markets, sold boiled and by the mug by woman food sellers.

The producers of raw milk sold in Dar es Salaam are as varied as the outlets through which it is sold. As confirmed by others I found dairy *wakulima* having from one cow to hundreds (Kivaria et al., 2006; Sumberg, 1999). The larger herds are on the periphery of the city and some up to 100 kms away, such as around Bagamoyo and Chalinze in Pwani Region. Many are in the peri-urban areas (Photograph 25), such as Kitunda, Kigamboni, Kibaha and Makongo. The number of dairy *wakulima* in the strictly urban areas appears to be declining as the city becomes more densely populated and the composition of the people change. For example, I was told about and witnessed during my time in Dar es Salaam, the decline of dairy farming on the Masaki Peninsula. Land that was used for grazing and collecting fodder has been built on as luxury apartments have sprung up across the Peninsula and many of the residents are now expatriates and some elite Tanzanians who do not appear to be interested in Dairy farming, or raw milk purchasing. One sees less cattle now on the Peninsula.



**Photograph 25 - Peri-urban dairy and egg farming in Dar es Salaam.**

Important sources of cattle food are: the collection of grass cut from the sides of roads, in river valleys and on other pieces of unoccupied land. This is mostly done by young men who deliver to the dairy *wakulima* and also by *wakulima* themselves; *pumba* (maize bran) from maize mills that are scattered around the city; and brewer's grain (left over from the mashing and beer brewing process) largely from the Tanzania Breweries Limited operations. In the more urbanised areas cattle are kept in sheds, but in the peri-urban areas and further out of the city, grazing on any available land is also common.

## Maize mill

Baba Simon's shop is hard to box in a particular category. It operates from a maize milling factory. Factory may give the wrong impression; this is not a big place. The building is approximately 10 metres by 10 metres with a typical zinc roof that has a nice overhang at the front. It is under this overhang, with a few square metres kiosk at one side, where Baba Simon his wife, a daughter-in-law and a young assistant sell from. Most of the building is taken up with maize milling machinery and sacks of maize waiting to be ground or *sembe* waiting to be sold. Baba Simon sells the *sembe* and the *dona* from the machine either in the sacks of 5, 10, or 25-kg or weighed to any amount a person wants. He also sells chicken eggs, pigeon eggs and milk. They sell fresh milk and *mtindi*, a form of sour milk, like buttermilk. They sell fresh raw milk for between TSh 1,300 and 1,500 (\$ 0.79 and \$ 0.91) per litre depending on the customer and if they are selling wholesale or retail. The *mtindi* they sell for TSh 2,000 (\$1.21) per litre. They keep the milk and *mtindi* in containers and buckets of 20-25 litres each and sell it in any quantity. Most customers come with their own containers, but they also have a sack full of used water bottles available if needed.

Most of the milk is supplied by a *wakulima* who has cattle near Bagamoyo about 60 kms away in the Pwani Region. The *wakulima*, or one of his workers, brings the milk on the back of a pick-up truck, delivering 250-300 litres a day for TSh 1,000 (\$ 0.61) per litre. Baba Simon and his wife sell some of it fresh and make some of it into *mtindi* in buckets on the premises. What the shop does have in its favour is location; it sits right on the tarred and busy Kimweri Road. Pedestrians, *daladalas* and other vehicles are passing all day. Baba Simon puts out a board next to the road advertising the eggs and the milk. They are positioning themselves as a wholesaler, selling buckets of milk, trays of eggs, sacks of maize, but they will sell retail in any small quantity as well.

On one morning at the shop I observe a young man on foot buying half a litre of milk; he says it is for a baby at home. A Toyota Land Cruiser stops and the driver buys several litres of milk in a container he brought with him. A woman carrying a young child buys a litre of milk that she says she will boil and give to the child. I ask why she buys this milk and if she ever buys Tanga Fresh. She says she likes the Tanga Fresh *mtindi*, but she is worried that the Tanga Fresh milk might not be fresh; "There is an expiry date, but sometimes people are not honest, the date might not tell you it has expired, maybe it could give my child a problem. I know the milk here is fresh and I boil it myself". She says nothing about the price, but when I ask her specifically about it she confirms that she paid TSh 1,500 (\$ 0.91) for the litre and she knows that it is cheaper than Tanga Fresh. Tanga Fresh milk was selling at TSh 1,200 (\$ 0.73) per half litre in most outlets at the time, making it TSh 2,400 (\$ 1.45) per litre or 60% more expensive than the milk from Baba Simon.

The milk delivery arrives at 8.30 am, a bit later than usual. It is in a variety of containers on the back of a one-ton Mitsubishi pick up being driven by a man in his late twenties who works as a driver for the farm owner. He is from Kahama in Shinyanga Region. Baba Simon

and his wife decant the milk into their own containers filtering it as they do so. Baba Simon writes the quantities for each container in a book and adds them up. The total delivery is 280 litres. Baba Simon takes small amounts from a few of the containers and with his assistant they boil the milk samples on a kerosene stove, watching it as it boils, swirling it in the bottom of the small pot they use, looking at it again and re-boiling while observing. This appears to comply with milk testing guides, such as from the Food and Agriculture Organisation (FAO, Undated; Kurwijila, 2006). When satisfied, Baba Simon pays for the milk and they start to put the fresh milk in the fridge and some in buckets for the production of *mtindi*. The driver ties the empty containers on the pick-up and heads back to the farm.



Figure 5 - Baba Simon milk supply model.

Figure 5 summarises the model with the price to the *wakulima* and the price per litre of milk paid by the final buyer. Much of Baba Simon’s milk business is selling direct to the final buyer, but some is sold to vendors, such as women from the market who get a discounted price from Baba Simon. These vendors sell on to others, sometimes at prices closer to TSh 1,700 (\$ 1.03) per litre, depending on variables like the size of mugs used.

There are about 120 cattle on the farm where the milk came from. Some are improved cross breeds, but most are indigenous, or what is referred to as ‘local cattle’. They sell beef as well as milk and also have: sheep; chickens; ducks and guinea fowl. The farm owner is from Rombo in Kilimanjaro Region, he lives in Kawe (a suburb of Dar es Salaam) and works at Tanzania Breweries Ltd. The job no doubt assists him to get access to the important cattle feed of brewer’s grain that Tanzania Breweries Ltd is by far the biggest supplier of.

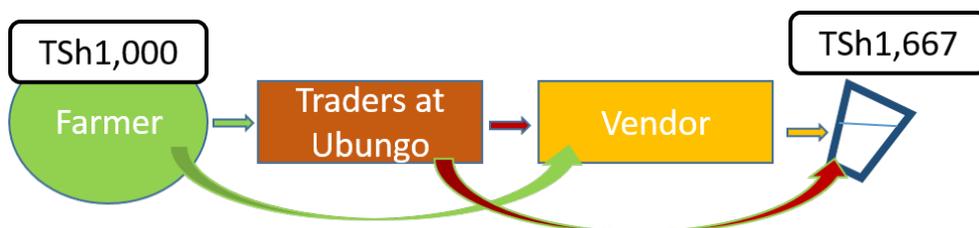
### At the filling station

It is about 5 am, still dark but already busy around the Ubungo junction of the Morogoro Road and Nelson Mandela Road/Sam Nujoma Road (the name of the road changes at this junction). The road is full of passing cars, *daladalas*, trucks and motorbikes. At 6 am the long-distance busses will start to leave the Ubungo bus terminal, but by that time most of the milk sellers I was coming to meet will be gone. The pavements are full of people hurrying to work and to markets. The Oilcom filling station is on one corner of this important junction. I had been told that this was a place where one could buy fresh milk and indeed I found a line of people, mostly men, with different kinds of containers full of milk. Some sellers simply

had buckets on the pavement out of which they scooped or poured milk for their clients, a few had the small half-ton Suzuki pick-up trucks parked on the wide pavement with milk churns and other containers on the back. These are milk traders; they come with amounts of between 140 litres and 700 litres that they have collected from *wakullima*. Some of them also have their own dairy cows, but still add milk collected from others.

All the traders were from areas of Pwani Region along the Morogoro Road, the closest being from the village of Kibaha about 30 kms away and the furthest, where most came from, around Chalinze which is a village, growing to a small town, 100 kms away. Six of the milk sellers came together on a shared transport with their containers, others used the *daladalas*. They explained how they test the milk through mixing it 50/50 with alcohol, shaking and examining it, looking for things like water in the milk and other abnormalities. This conforms to most guides for milk testing and should identify problems such as disturbed levels of albumen (colostrum), milk from animals in late lactation, salt concentrates in milk from animals suffering from mastitis and milk in which mineral balance has been disturbed (FAO, Undated; Kurwijila, 2006; My Agriculture Information Bank, Undated). The man selling 700 litres from the back of a Suzuki truck said he employed an expert to check the milk for him.

Most of the buyers are women who were buying quantities of between 10 and 20 litres each. They said they sell the milk in market places or from their homes. Some will sell raw milk to their neighbours, most will be making milky and spiced chai tea or selling plain hot milk, in both cases they boil it first.



**Figure 6 - Ubungo wholesale milk supply model**

In this model, shown in Figure 6, some of the milk sellers are *wakulima* themselves, so selling direct to vendors in Dar es Salaam. Some eaters buy for themselves directly at Ubungo, but the majority of the buyers are vendors who sell on the milk and the majority of sellers are traders who bought from *wakulima*. The prices the traders pay to the *wakulima* vary, but the TSh 1,000 (\$ 0.61) per litre was the minimum at that time.

**Alongside the pigs**

It was a normal street, just off the main road going through Makongo Juu. There were high walls behind which sat middle class houses. I knocked at one of the gates where I had been directed by people showing me to where there were dairy cows. Behind the wall I could see

a satellite dish on the roof of a house. Only when the gate opened could I also see the chicken sheds, pig sties and cattle shed.

Mama Christina and her husband Charles had 12 cattle at the time including the calves and the bull that they use for natural insemination of their own cows. The times I visited the bull was out on hire, servicing the cows of other small dairy *wakulima*. They say that the artificial insemination is expensive and unreliable. Charles complained that “you pay vets a lot of money and many times you don’t get any calf, so we use our own bull”. This is a common problem and natural solution that has been reported by other dairy *wakulima* (Kivaria et al., 2006).

Mama Christina and her husband were getting about 50 litres of milk a day at that time, 25 in the morning and 25 in the evening. This varied according to how many lactating cows they had. They sell the milk directly from the house to local buyers for their own consumption and to a few traders. They said they sold directly from the house for TSh 2,000 per litre, more expensive than quite a few other raw milk suppliers, but still cheaper per litre than Tanga Fresh. They reduce the price by different amounts for wholesale sales and regular customers and take milk they do not sell from home to the market.

Mama Christina has been running the livestock operation for decades. Charles used to work in sales for a company selling drinks, but he said it did not give enough money, he had to travel and stay in hotels. “We like to run our own business, we can do what we want”, Charles said as the three of us went to lunch and had a beer at a nearby bar. Their business now is livestock keeping and they say the chickens and the pigs bring the biggest profits. Most of their chickens, up to 5,000 at a time, are broilers sold for the meat. The pigs and some bulls are sold for meat. Another business they have is catering with most of the meat provided from their urban farm, pork being their speciality. They employ three workers and one of their sons also assists.

A core part of the feed is the brewer’s grain from the Tanzania Breweries Ltd and *pumba* from the maize mills. They have a kind of mini concrete silo where they put this and mix it to make the feed for the animals. They have built a biogas digester where the animal manure is put and they have piped the gas to their house and use it for cooking. When I was last there in June 2015 they were starting to pipe the biogas to the neighbours’ houses to sell to them. They told me that the neighbours do not complain about the animals, because they are happy to have them there, they get fresh milk and meat and soon gas.

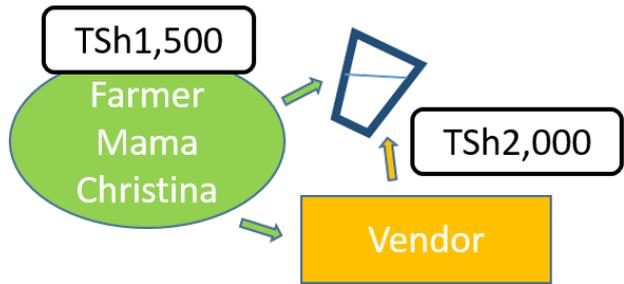


Figure 7 - Mama Christina milk supply model.

In Figure 7, TSh 1,500 (\$ 0.91) is the minimum that Mama Christina sells for, often she sells directly to the final buyer for TSh 2,000 (\$ 1.21). Vendors who buy from her and sell on sell, as far as I could ascertain, for between TSh 1,700 and TSh 2,000 per litre

### On a motorbike

James lives in Kitundu, in peri-urban Dar es Salaam, one of the areas where there is also a lot of poultry production. He has 5 cows, one is pregnant now, he currently gets about 20 litres a day from his cows, he refers to them as typical local cows. His main business is milk distribution. He takes the milk from his cows and buys milk from other neighbours, “many of my neighbours have cows” he says. Then he delivers to town in the morning, all the milk in 5-litre containers in a crate and tied on the back of his motorbike. He delivers between 100 and 150 litres a day, except Sunday when he rests. By 9 am most morning he has sold all the milk. He has people he delivers to from Ndizi in Gongolomboto up to near Kariakoo and places in-between, such as Namanga and Msasani where I met him. He said he sells for TSh 2,000 (\$ 1.21) a litre or TSh 1,500 (\$ 0.91) wholesale and he wants to get at least TSh 7,500 (\$ 4.55) per 5-litre container.

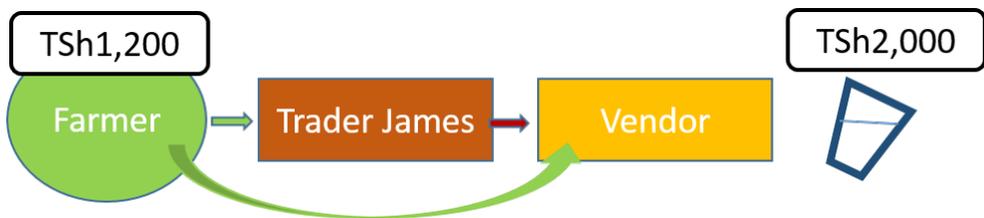


Figure 8 - The motorbike distribution model.

James, as illustrated in Figure 8, is both a trader and dairy *wakulima*, so he is in some cases selling his own milk directly to the final buyer and at other times selling on milk he bought from other dairy *wakulima*. He sells almost exclusively to vendors who sell on at various prices, but the highest is around TSh 2,000 (\$1.21) per litre.

## **At the market**

Aida cooks and sells food from a 3 metre by 3 metre space at the back of the Mikoroshoni Market. She has a table with two narrow benches where customers can sit and she has her charcoal stoves and pots in one corner. In the morning, she makes tea and she boils 10 litres of milk that she buys every morning from someone she meets at the Shekilango market in Sinza. She lives near that market so buys the 10 litres of milk and then comes by *daladala* to Mikoroshoni. First thing, when she arrives in the morning, she boils the milk in a pot on her charcoal stove and then pours what is not sold immediately into a flask to keep it hot. She sells the milk hot, but otherwise plain and by the mug for TSh 500 (\$ 0.30), either to customers who come to her eating place or to other traders in the market. As the mug is around 300 ml, she is selling milk for approximately TSh 1,667 (\$ 1.01) per litre. Aida has a number of traders that she sells to every day. She knows the time they want the milk and she takes it to them at their stall and gets paid in the afternoon when they have made some sales.

There are a number of other women selling milk at Mikoroshoni Market and nearby, such as the *mamantilie* who do not have a place in the market, but cook and sell tea, milk and food in the alleys next to it. They acquire their milk from different sources, some of them mentioned above, for prices that were around TSh 1,200 (\$ 0.73) to TSh 1,500 (\$ 0.91) during 2014-15. A number of them deliver to the traders in the market who are their customers, in the same way that Aida does. Some also make the milky and spicy tea, like the plain milk this is made in the morning and kept hot in a flask.

## **8.4. Tanga Fresh**

### **8.4.1. Milk producers and collection centres**

#### **A picture of one milk supplier**

We sat on the porch of Mama Anna's house. A few metres away a calf was tethered and lying relaxed in the sun. Mama Anna has eight cows and three calves that graze on communal land and sleep at night in a small cattle *boma* (enclosure) next to her house. She milks the cows every morning and evening and carries the milk on foot to the Tanga Fresh collection centre. Her first cow, that she got more than 12 years ago, came from a 'take one give one' cattle project. She was given a cow and then paid back through passing on a calf to another family. She depends for her income on the milk sales and farming maize, oranges and coconuts on land in a neighbouring village where she was born. While she sells most of her milk to Tanga Fresh she also keeps some for home use and sells some to neighbours<sup>20</sup>.

Mama Anna has attended a two-week training on caring for dairy cattle run at a local college. When her cattle are sick she takes blood samples to a veterinary laboratory in Tanga for analysis and to get medicine. There is a vet in Pongwe that assists with artificial insemination. She gets vitamins from the farmers' cooperative that runs the Tanga Fresh

---

<sup>20</sup> Some of this and the following paragraphs were previously published in a blog (Wegerif, 2014b).

collection centre and buys *pumba* as supplementary feed from the maize millers in the same street in the village. When she has financial needs, often for family reasons rather than for dairy production, she borrows money from the milk collection centre and her loan repayments are deducted from the money she receives for her milk supplies. When needing advice Mama Anna does not feel she gets it from Tanga Fresh, but she explains how she does benefit from sharing experiences with other dairy *wakulima* when they meet and talk at the collection centre.

#### **At a milk collection centre**

It was about 8am in Pongwe Village, Tanga Region. I watched as buckets and other containers of milk were lined up in the shade of a zinc roof at the Tanga Fresh milk collection centre. Most of the containers were brought by young men on bicycles and motorbikes, women of all ages also came on foot, buckets on their head or in their hands. A few children and some older men were there queuing and chatting as well. The containers varied in size and the quantities delivered per person went from a litre to several hundred litres. Tatu, in her twenties, dressed in a clean white coat, hair net and wellington boots – the classic uniform of hygiene – was taking samples from every container and using an alcohol test kit to check for any impurities. The milk that met the standards (most of it did) was poured into a shiny stainless steel container, weighed, then filtered before being put into one of two large shiny and cooled tanks in the back room of the building. In the same building is a small office used by the milk collection centre staff and the primary structure of the Tanga Dairy Cooperative Union. Later in the day a truck would collect the milk and take it to the Tanga Fresh dairy.

#### **A few acres and a cow**

A little distance from Pongwe Village I sit with a couple in their thirties outside their brick and cement house. Dairy cows are an important part of their income from which they support their three children. The mother laughs as she tells us how her son who is just a few years old drinks more than a litre of milk a day, but they still have some left to deliver to the Milk Collection Centre. The couple got the land and first cows as part of a land distribution project that gave land on an old sisal plantation to young (under 40 years of age) *wakulima*. Both the husband and wife have their own plots, registered individually, but next to each other. They are also both members of the TDCU that organises the local milk collection centre and passes the milk onto Tanga Fresh. This centre has no weighing machine so the milk is measured manually in buckets. The storage tank is smaller and they cannot afford a generator, so have to call for urgent milk collection when the electricity goes off, which it frequently does.

#### **8.4.2. Tanga Fresh: the beginning**

Tanga Fresh started operation in 1997, with an initial processing capacity of 15,000 litres a day in the centre of the town of Tanga in Tanga Region. They moved to their current premises and got more equipment in 2009 which grew the processing capacity to 50,000

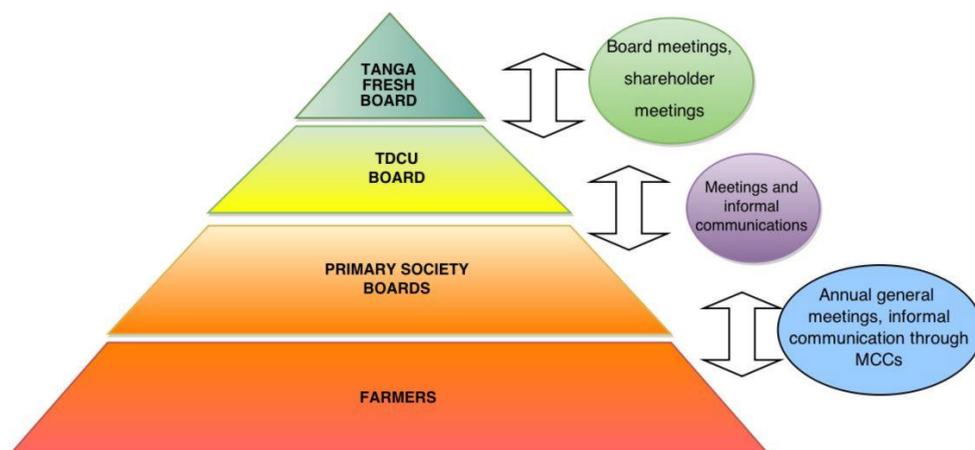
litres a day. The company has increased the intake of raw milk and the financial turn-over every year since it started operating and now directly employs around 150 staff (Martucci, 2015).

Important to understanding the development of Tanga Fresh is to see the history of decades of interventions aimed at developing the dairy industry in the region. The Dutch government was involved in supporting efforts at large scale parastatal dairy farming in the 1970s. After the lack of success in that, and a change in policies, the Dutch government continued to play a leading role in the Tanzanian Dairy Development Programme in the 1980s with more focus on the private sector and small-scale dairy farmers. A wide range of initiatives have been implemented including research, training, improving cattle breeds, the 'take a cow give a cow' distribution of cattle, and the establishment of the Tanga Dairy Cooperative Union (TDCU) in 1993 (Martucci, 2015). The development of dairy in the region was also driven and enabled to some extent by the collapse of sisal production. There was an economic void and there was land available. Many of the dairy cows now graze on land that had been sisal plantations. One interesting scheme is the one mentioned above near Pongwe Village. It gave farmers who were under 40 years of age a piece of land on an old sisal plantation and a dairy cow. They could also join Tanga Fresh and deliver milk to the nearby milk collection centre. Quite a number of farmers settled in the area with their new cows.

There have been important long term involvements of key individuals who have shown a commitment to the initiative that has outlasted organisational involvements and changing government policies. One gets the sense that these men carry a vision for the project that sees it being a viable business, but also going out of its way to have wider development and poverty reduction impacts. Mr Zijlstra, from the Netherlands, was involved as the head of the Dutch development interventions in the 1980s and continued beyond that with setting up a breeding farm and being closely involved with the establishment of Tanga Fresh. He remains on the Board of Tanga Fresh and holds 2.5% of the shares. Mr. Hossein, a Tanzanian national, was the first Managing Director of Tanga Fresh and ran the company for more than a decade. He is now a member of the Board with a 2.5% shareholding. He continues to live in Tanga and remains very involved with Tanga Fresh and dairy sector development more widely in Tanzania.

#### **8.4.3. The structure**

Tanga Fresh has always had a mixed financing model with some private investment money, development agency funding and some sympathetic financing from institutions with a social development commitment. The largest shareholder is the Dutch DoB Foundation with 52.5% of the shares (Martucci, 2015).



**Figure 9 - Decision Making in Tanga Fresh (Martucci, 2015: 62).**

The Tanga Fresh Board meets four times per year and is attended by senior staff and shareholders including representatives from the TDCU Board which holds 42.5% of the shares. The Board meetings of Tanga Fresh are formal occasions where decisions such as on milk pricing and share issues are made. The TDCU Board reports to and is elected by the Boards of Primary Societies. The Primary Societies are made up of *wakulima* who can attend the two meetings per year convened by the primary society and can at elective meetings select their leaders (Figure 9). Not surprisingly, given the layers of structures, the *wakulima* members feel fairly far removed from the leadership of Tanga Fresh and even from the TDCU. One primary society leader complained that “they [TDCU] tell farmers they are the main shareholders, but farmers do not even know whether this year they ran at a loss or a profit” (Martucci, 2015: 83). Theoretically each *wakulima* is a shareholder, but this did not mean anything to most of the *wakulima* interviewed. When there is a profit there is a dispersal of a dividend that is split according to the supply from each farmer during the year (Martucci, 2015). Thus, the share is linked more to their production and supply than to their ownership in the company and farmers do not have clear information on how the benefits are shared. The dividends go to the TDCU and, said one *wakulima* leader, “we’ve never seen a statement from Tanga Fresh, we get the dividend, so we don’t know whether it is fair” (Martucci, 2015: 83).

Tanga Fresh try various ways of having more direct communication with *wakulima* and other stakeholders, such as convening a Dairy Platform with stakeholders three times per year, running radio programmes and providing an SMS information service. Despite this communication the levels of trust between *wakulima* and the company are limited (Martucci, 2015).

There are various collaborations amongst *wakulima* that bring some benefits and go beyond what is organised by Tanga Fresh. *Wakulima* often learn from each other through sharing when they meet at the Milk Collection Centres, as Anna and others reported, some also

reported supporting fellow *wakulima* who were in trouble, such as when losing cows through disease or theft and there are a number involved in peer to peer lending and savings groups.

#### **8.4.4. Collecting and distributing: the benefits and challenges**

Tanga Fresh have an impressive network of 47 milk collection centres that receive milk from around 6,000 *wakulima* (Martucci, 2015) including those operating on a very small scale with just a few cows (Photograph 26). All of the milk collected is taken to the central dairy (Photograph 26) where it is processed into fresh pasteurised milk, *mtindi*, yoghurt or cheese. There are quality control checks along the way from the checking of each delivery to the collection centre, checking the milk at the collection centre before transporting to the dairy and checking on arrival at the dairy before it is mixed with other milk. When the milk arrives in Dar es Salaam the depot also check a sample of sachets for temperature to make sure it remained within the correct temperature range. 80% of their production, mostly *mtindi* and fresh milk, is sold in Dar es Salaam with two trucks delivering to the city, which is a 340-km drive, with what was an average of about 31,000 litres per day during 2014.

In Dar es Salaam Tanga Fresh has a marketing and distribution centre and also five independent agents who market and sell the milk. The distribution centre passes on milk to three of the agents (the other two are larger and get direct deliveries) and distribute to shops and other clients. The distribution centre also sells direct to the public from their depot, but at retail prices, and they run a milk shop in another part of town as well. The largest of the five agents sells more milk than the distribution centre, which itself had 17 distribution vehicles (small vans) in operation. Tanga Fresh and the agents distribute to *dukas*, to supermarkets, hotels, companies and institutions.

Tanga Fresh pay TSh 700 (\$ 0.42) per litre of raw milk to the collection centres, from which the collection centre and the TDCU take a cut, leaving the *wakulima* with TSh 630-680 (\$ 0.38-0.41) per litre. The variation in the amount to *wakulima* depends on the location of the collection centre as some more remote ones have to cover additional transport costs. The prices the milk is bought and sold at are set by the Tanga Fresh Board. In 2014 the wholesale price, whether sold by them or their agents, was set at TSh 950 (\$ 0.58) per 0.5 litres of fresh pasteurised milk and TSh 1,050 (\$ 0.64) per 0.5 litres of *mtindi*. The agents got the 0.5-litre sachets from Tanga Fresh at TSh 755 (\$ 0.46) and TSh 840 (\$ 0.51) for milk and *mtindi* respectively. The set retail prices were TSh 1,000 (\$ 0.61) for 0.5 litres of fresh milk and TSh 1,100 (\$ 0.67) for the *mtindi*. In practice, all shops sold above the set retail price. Typical prices found in *dukas* and supermarkets in 2014 were TSh 1,100-1,200 (\$ 0.67-0.73) for 0.5 litres of fresh milk and TSh 1,200-1,300 (\$ 0.73-0.79) for *mtindi*.

It is rather odd that Tanga Fresh as a business tries to set common wholesale and retail prices for all its agents and retail outlets. These set prices remain unchanged through the seasons despite changing supply and therefore shifting supply and demand relationships. This is done with the idea that they need to be consistent and build a market base by not

chasing away customers who may feel the retailers take advantage of them. The set pricing with set profit margins will tend to favour large volume sellers over low volume sellers who might be able to use more flexibility to their advantage and struggle to make ends meet with low margins and small volumes. Another thing it does is to remove any incentive for *wakulima* to invest in things that could maintain production in the dry season. For example, if the price went up in the dry season it could start to make sense for *wakulima* to invest in improved fodder, such as growing lucerne, to maintain production levels in that season.

Currently Tanga Fresh relies on small-scale *wakulima* for 90% of its milk supply and it provides an excellent opportunity for even the smallest producer to sell their milk. There is a tension in this, however, as the pressure to try to maximise the production capacity of the dairy and meet market demand makes the larger suppliers attractive. There are also high transaction costs involved in collecting from many small and dispersed producers.

On the distribution side in Dar es Salaam, Tanga Fresh has an impressive distribution network that gets the milk out to small *dukas* across the city. But, as with the big raw milk suppliers, the large buyers in the form of the supermarkets and institutional clients are seen as a priority, due to the volume they purchase. “The supermarkets, they are very important”, I was told by a Tanga Fresh employee at the depot in Dar es Salaam. This is not only a threat for the future, but impacting the smaller retailers now as the supermarkets receive preferential treatment, they get delivery on credit with 30 days to pay and are prioritised for the supply of milk, at the expense of other retailers, especially when supplies are low in the dry season. The allocations to the *dukas* and other small retailers are reduced when supplies are low. Tanga Fresh encourage their agents to keep supplying all buyers even if with lower quantities, but for the agents and the Tanga Fresh depot this means less sales while going to the same number of places. In practice, I found some small outlets that were not getting delivery at all during the dry season.

*Wakulima* appreciate the guaranteed and stable market that Tanga Fresh provides for their milk, but “[a]ll farmers interviewed lamented milk price is barely sufficient to cover the basic costs of production” (Martucci, 2015: 74). The *wakulima* spoke to the cost of inputs, such as feed and medicine and also noted that the feed costs increase in the dry season. Some know how to improve feed for their livestock but the income does not justify the costs. As one *wakulima* explained, we know some of the supplements we can use, “but we don’t give those things since the milk they produce is not enough to afford the cost of those things” (ibid: 74). The *wakulima* also noted that although the price they received was stable the input costs for feed and medicines were not stable, thus affecting the return they got from dairy farming (ibid, 2015).

The seasonal variations in production have left Tanga Fresh with milk unsold in the wet season and short of supplies in the dry season. Tanga Fresh milk collection can drop to around 35,000 litres a day in the low season whereas it peaks at around 70,000 litres in the high season. This is a challenge to the company and impacts on the income to *wakulima* as

well. One response has been to make cheese, up to 20,000 kilos a day in the high season, which has a much longer shelf life than fresh milk and also a different market, mostly sold to hotels in Zanzibar. This market is small however and the cheese production has eased a little but not overcome the uneven supply problem. The current plan is to produce UHT long-life milk.

The so-called ‘side-selling’ or direct marketing by dairy *wakulima* is a major issue for Tanga Fresh, just as it has historically been identified as an issue for the development of a commercial dairy sector (Martucci, 2015; Sumberg, 1999; Sumberg, 1997) and in other value chain initiatives (Minten et al., 2009). Tanga Fresh requires *wakulima* who supply them with raw milk to sell their whole supply to Tanga Fresh and if they don’t there can be sanctions in the form of refusing to buy from the *wakulima* again, or refusing to buy in the wet season. Nevertheless, this is a part of the agreements that is almost universally violated by *wakulima*. For Tanga Fresh, not only does the direct marketing by *wakulima* reduce the supply of milk Tanga Fresh receives, but it also directly competes with them in the market. The Managing Director of Tanga Fresh said that “there are many who bring raw milk to town [Tanga], we cannot even sell fresh milk in town because of raw milk” (Martucci, 2015: 89). He also relates the direct marketing to both price and preference; “there is competition with raw milk sold in town because it is cheaper and also for lack of knowledge about milk processing. They can see the cream on top, so they think Tanga Fresh has taken away cream, they don’t see cream floating, so it’s a process of educating” (ibid: 89-90).

For *wakulima*, side-selling makes sense for the following reasons: diversifying economic opportunities for more autonomy and security; they receive a higher price, TSh 1,000 (\$ 0.61) selling from home in Tanga region (and more sometimes in the dry season) compared to less than TSh 700 (\$ 0.42) when delivering to a Tanga Fresh Milk Collection Centre; and receiving cash payments rather than waiting for the twice per month payment from Tanga Fresh (Martucci, 2015).

The “problem”, or from a *wakulima* perspective the benefit, of direct marketing increases in the dry season as low availability of milk pushes prices up in the local market, while Tanga Fresh keeps its prices fixed (Martucci, 2015). Thus, two of Tanga Fresh’s biggest challenges - reduced dry season supply and “side-selling” – combine to exacerbate each other.

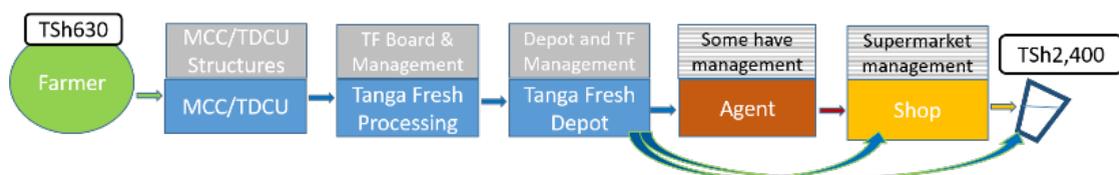


Figure 10 - Tanga Fresh milk supply model

Figure 10 shows the main stages from the dairy *wakulima* to the milk drinker. I have put in the common prices per litre for the *wakulima* and the final buyer. Note that this is based on the 0.5-litre sachets, the smaller 250-ml milk and *mtindi* packets are slightly more expensive per litre to the final buyer, the agent and the shops. At most stages, there is a significant amount of management overhead in the form of organisational structures and management as indicated by the grey blocks. This includes the high management overhead when the milk is sold through supermarkets and in some of the operations of the larger agents. This does not exist when the milk goes through a local *duka*. The Tanga Fresh depot does sell a limited amount direct to the final buyer and consumer and also sells direct to many shops, hence the arrows that make those direct links.



Photograph 26 - Dairy cows belonging to *wakulima* who supplies Tanga Fresh and the delivery bay at the Tanga Fresh dairy.

### Women's participation

There are a fairly even number of men and women members of the TDCU and supplying Tanga Fresh, but women are not among the larger herd owners and there are few women in leadership positions from the primary societies upwards (Martucci, 2015). Some women are not members of the TDCU and Milk Collection Centres themselves, but support their husbands or sons in the dairy production. This leaves them being seen only as helpers to men and missing out on the training, participation in decision making and in control of the income. This happens despite these women doing much of the actual work with the cows (ibid). There is limited involvement of women in the Tanga Fresh distribution in Dar es Salaam, only to the extent that some women are shopkeepers in the *dukas*, although shop keeping and *duka* ownership is also dominated by men. The Managers and agents working for Tanga Fresh are all men. Tanga Fresh welcomes and have women members and the low entrance requirements make it accessible to many women, but they have no explicit gender strategy to address the societal norms that impact negatively on women's participation and benefits.

## 8.5. Milking it for lessons

### 8.5.1. Support and build on the existing dominant raw milk based system

The supply of raw milk, through a lot of direct sales by producers and through wider networks that I see as part of a symbiotic food system, is still the largest source of fresh milk to Dar es Salaam. This raw milk system gives considerably better prices per litre to dairy *wakulima* and delivers at lower prices for the eaters when compared to Tanga Fresh or other sources of processed and packaged milk (Table 9). This makes the raw milk system worthy of much more positive attention if we wish to see benefits to *wakulima* and contribute to food and nutrition security for the majority and especially the poorer residents of Dar es Salaam.

**Table 9 - Prices to producers and eaters for fresh milk supplied through different models.**

Supplier	Payment to producer. Fresh milk, TSh per litre	Cost to eater. Fresh milk, TSh per litre <sup>21</sup>	% to producer
Tanga Fresh	630	2,400	26.3%
Motorbike distribution (e.g. James)	1,200	2,000	60.0%
Mama Christina	1,500	2,000	75.0%
via Ubungo wholesale market <sup>22</sup>	1,000	1,667	60.0%
Baba Simon	1,000	1,500	66.7%

Despite its importance as a source of milk, the raw milk system, particularly the urban part of the sector, receives very little policy or other support. In part this could be because it is in many ways invisible, it may in total be the biggest supplier, but the system has no large office or processing facilities and no spokespeople. Another reason for this appears to lie in negative attitudes that instead of embracing the system and the preferences of many people for raw milk, rather only see these as negatives that are put down to ignorance and backwardness. The Managing Director of Tanga Fresh appears to have embraced this attitude that is exemplified by Sumberg, who has researched and written extensively on the dairy industry in Tanzania, and has argued explicitly that this system should not be supported (Sumberg, 1999). Sumberg clearly identifies the resilience of the urban and peri-urban raw milk system and even refers to a “boom in urban dairy production” (Sumberg, 1999: 198), but still concludes the system is an “anachronism for the long-term development of a commercial sector based on the production, processing and distribution of a perishable, bulk commodity such as milk” (ibid: 197). He provides no references or evidence to support

<sup>21</sup> These are the highest price to eater scenarios in all cases. Aside from in the Tanga Fresh case, some buyers do get the milk for lower prices from the other suppliers.

<sup>22</sup> This is one model found via the Ubungo wholesale market. While the prices paid to producers were quite consistent (apart from the direct sellers who are getting more) the traders buying and selling on to their customer have a variety of prices that vary around this level and were also difficult to verify.

his reasons that include civil servants subsidising their own dairy production, the raw milk and direct marketing system being unable to survive the “economic reality of comparative advantage” (Sumberg, 1997: 290) and its incompatibility with “strong economic and development trends such as globalisations and regional integration” (Sumberg, 1999: 198). Instead of dismissing the raw milk system as it does not fit preconceived notions of what commercial activity should look like, it would be more useful to understand its logic especially given its resilience and price advantages. The empirical evidence and the passing of time reveals that the raw milk system is still growing and resilient after many changes in the civil service and economy in Tanzania and that many of the urban and peri-urban dairy *wakulima* are not civil servants. The capacity of the raw milk system to meet urban demand is wider than might be assumed as it is not limited to only strictly direct marketing or to the urban and peri-urban areas, it now draws in dairy *wakulima* from at least 100 kms away.

By comparing the raw milk supply to Tanga Fresh we can see how it is competitive due to a number of factors:

- Low overheads and almost no management costs. Instead it relies on many interdependent owner operators who are embedded in social relations with common cultural repertoires that replace the need for contracting and management oversight.
- Proximity to the city that reduces transport and storage costs.
- Less stages in the network that brings the milk to the final drinker, when compared to the Tanga Fresh ‘value-chain’. Importantly this is also done while providing larger numbers of economic and direct ownership opportunities to more people as the raw milk system involves more different actors, compared to Tanga Fresh as one economic entity that controls many stages in the delivery of milk.
- Not processing and packaging the milk is a big cost saving that also combines with another positive factor, which is that it is delivering a product, raw milk, that many people are used to and want. Meeting food preferences, unless they are clearly unhealthy, not only makes sense, but is part of the definition of achieving food security.
- High levels of direct ownership across the system that builds equity and is also a factor in removing the need for expensive management oversight.
- Same day delivery and consumption that replaces the need for processing and a lot of refrigeration.

There is a debate on the advantages and disadvantages of pasteurised versus raw milk. Some have argued and found that there are health advantages to this practice. The real health concerns related to drinking raw milk could also be dealt with in different ways, including more public education that builds on the already widespread practice of testing, filtering and boiling the milk.

### 8.5.2. What of the value chain approach?

I believe Tanga Fresh is a successful company and intervention in the dairy sector in Tanzania. It has created access to new markets, importantly Dar es Salaam, for many small and larger dairy *wakulima* who, due to distance, would find it difficult to sell in the city directly. It makes an important contribution to the availability of fresh pasteurised milk and *mtindi* in Dar es Salaam. Important to the success of Tanga Fresh is that it has built on years of a variety of past interventions to develop a dairy sector in the Tanga Region. Unlike many value chain interventions, which look to international markets, a strength of Tanga Fresh is that it is responding to and meeting domestic food and nutrition needs. It is also creating more economic opportunities through, in a large part, supplying to small-scale retailers that some would refer to as 'informal'. They have also brought useful technology, which is important for a perishable commodity like milk, in the form of the pasteurizing and packaging equipment as well as the quality testing.

Despite the positives of the Tanga Fresh model the raw milk production and supply delivers better value to the producers and to the drinkers of the milk. Such a finding is not unusual for analysis of value chain operations. Seville et al in assessing a wide range of value chain experiences found that there was a diversity of experiences and "formal chains tend to provide greater income security but not necessarily higher prices" (Seville et al., 2011). They also found that producers that already had higher education levels and more assets were more likely to benefit from linking to formal value chains, thus reducing the benefit to the poor (ibid). As with most value chain analysis they only paid attention to the benefit to the producers and did not consider the impact on the eaters (ibid). In another example, Minten et al who, in a frequently cited paper, give a positive assessment of a green pea value chain intervention in Madagascar, use language reminiscent of Sumberg's when they lament that the company led green pea value chain cannot compete with local producers even when selling to supermarkets in the capital city (Minten et al., 2009). Despite contracts and high levels of supervision Minten et al found that "another enforcement problem is avoiding "side-selling"- a problem which is a general concern in modern supply chains with contracts" (ibid: 1734). This is, of course, a clear indication that the producers in the value chain can get better prices elsewhere. The beneficiaries in the Madagascar value chain were also better educated than the average farmers and, as with most value chain analysis, there is no mention of the impact on local buyers/eaters or on food security (ibid).

The strengths of Tanga Fresh make it all the more interesting that it reveals some fundamental limitations to the approach of value chain development as a form of development intervention. Based on what has been found in this study, these overlapping limitations can be summarised as: 1) institutional alienation; 2) a concentration in few hands of meaningful ownership and decision making power and with that a reduction of autonomy for most actors; 3) a tendency towards collaborations with the larger and more corporate entities that fit the culture and demands of the business, but undermine the

relationship with smaller actors; 4) cultural and social disconnection, most obviously in this case related to milk drinking preferences. These are elaborated below.

Despite the efforts to build representative structures and arrange ways to communicate with *wakulima*, most suppliers to Tanga Fresh feel distant from the company and are not involved in any direct decision making. A certain type of leadership emerges through the layers of structure involved. This leadership is ostensibly representative, but increasingly becomes distant from most ordinary members. This seems to be inevitable with this scale of institution and the social and cultural disconnection between the *wakulima* and the management systems being used by the institution.

Day to day management decisions at Tanga Fresh sit with a management team headed by the Managing Director. In a typical corporate structure, the management reports to a Board of Directors who meet four times per year. This group of a dozen people hold management accountable and make strategic decisions, including on things like pricing. The institutional mechanism of shareholding is in practice very abstract and unrelated to direct decision making, it does not translate into a sense of ownership. This is in stark contrast to the level of direct ownership and decision making that is spread across the raw milk system where, for example, a trader may make several decisions on price in a day to respond to the amount of milk a customer buys and the type of relationship they have with that customer. In the Tanga Fresh model the *wakulima* find themselves subject to distant decision making and expected to follow the decisions and to rely totally on the one buyer for their milk. In the raw milk system, one could argue that the *wakulima* has no say over marketing once they have sold their milk whereas they are shareholders in the Tanga Fresh operation that does the marketing. There are, however, two important differences: 1) the dairy *wakulima* in the raw milk system has a wide range of different buyers they could choose to sell to; and 2) they are normally much closer to the final milk buyer and drinker, selling directly to them or to the person (not a corporate entity) who will sell to the milk drinker. Both of these factors give a greater sense of engagement and level of agency and autonomy in the system to the dairy *wakulima*. This is alongside the high level of ownership and autonomy of other actors who run and have real decision making power in different parts of the raw milk system, such as in trading and in vending.

The *wakulima* selling to Tanga Fresh, despite appreciating and using the market opportunity it provides, still seek autonomy and better prices through defying the agreement with Tanga Fresh and selling outside of that. The retailers in Dar es Salaam also defy the set prices and sell for more. This striving for autonomy has been noted by others (Van der Ploeg, 2008) and makes sense given the lack of trust in Tanga Fresh and the real risk of depending on only one main source for your income. Trying to address such things with tighter contracting and enforcement rarely works and will only further alienate more actors in the system.

Strangely, for a value chain initiative that sees itself as operating based on market principles, Tanga Fresh is in practice rather bureaucratic and unresponsive to the market. The setting of

prices by the Board of Tanga Fresh in scheduled quarterly meetings is far less market orientated than the traders in the raw milk system that can and do adjust their prices from moment to moment in response to different suppliers and customers.

Tanga Fresh has a tendency towards collaboration with other larger and more corporate entities that are more like themselves in scale and culture. This is a threat for small scale *wakulima* and retailers in the future and is already having an impact now, notably through the preference given to supermarkets over the small retailers. This is being done even though small retailers are as a whole a larger part of the retailing operation that Tanga Fresh relies on. The risk of this goes beyond milk supplies as it threatens the food system of which the small retailers are part. The more items customers want that these small retailers cannot get, the less viable they will be. Even without the preferences given to supermarkets, the fact that the *dukas* rely on the same supplier for pasteurised milk makes it one of the foods where the *dukas* are not more competitive in pricing. They are generally selling at the same prices as the supermarkets. This contrasts with other Tanzanian produced foods like eggs, maize and rice (covered in other chapters of this thesis), which are supplied through the symbiotic food system that enables the *dukas* to sell them at more competitive prices than the supermarkets can manage.

The cultural and social disconnection can be most starkly seen in the use of a technology that is far from the experience of the dairy *wakulima* to produce a form of milk that most of the dairy *wakulima* do not drink. The management discourse confirms and probably reinforces such disconnection through portraying the preferences of most of their suppliers and the majority of milk drinkers in the country as being based on ignorance. There are outcomes and risks from this, for example, Tanga Fresh do not supply the large number of mostly women milk vendors selling from home, or to connections in work places and in and around markets. Should the raw milk system be jeopardized, so will these small enterprises run by women be destroyed.

### **8.5.3. Addressing some challenges**

Both in the Tanga Fresh and the Dar es Salaam raw milk production the costs go up in the dry season and the income goes down, as Kivaria et al put it, “[d]uring the dry season income from milk sales is low and expenditure on forage high” (Kivaria et al., 2006: 125). For Tanga Fresh, it seems obvious that prices should be allowed to increase to follow market demand in the dry seasons. This is needed to incentivise *wakulima*, or at least just to cover the additional costs for *wakulima*, to maintain production levels. It would also reduce the side selling that at the end of the day will really only be stopped if Tanga Fresh can offer competitive prices. Encouraging more production of high quality fodder like lucerne could help reduce the drop in dry season production. If this is done in a way that is based on the operations of the raw milk system, it could also create still more income generating and ownership opportunities. This will however not be viable unless the pricing rewards it.

There is a market for pasteurised milk products and other dairy products like butter and cheese which are currently largely imported (Kurwijila et al., 2012). An alternative route, other than the large corporate style investment of Tanga Fresh, to increase production of such processed dairy products would be to enable greater access to affordable processing and packaging equipment along with refrigerated transport options. This equipment needs to be at a scale, in terms of cost and production level, that would be accessible to local small and medium businesses and fit within a food system based on small-scale dairy *wakulima*, retailers and vendors. The extensive and widely owned rice and maize milling operations, as described in Chapter Six of this thesis, show how this can work. There is work that has been done on such accessible processing technology by FAO and others (Kawambwa et al., 2014; Bennet, 2003; Dugdill, 2000).

#### **8.5.4. Women's power and participation**

In both the Tanga Fresh model and the raw milk system in Dar es Salaam, women face many of the obstacles that have been identified by others looking at the dairy industry. Mkenda-Mugittu in a study of some dairy development interventions in Tanzania identified five key areas of concern that need to be addressed to ensure greater gender equity in the sector:

“(1) the gendered nature of cow ownership; (2) the gendered distribution of workload; (3) women's involvement in household decision making; (4) the gendered distribution of household income; and (5) women's participation in project activities (e.g. training, exchange visits, farmer days, and field visits)” (Mkenda-Mugittu, 2003: 464).

Addressing these in the Tanga Fresh operation and in any interventions related to the raw milk production and marketing would be one step to improving women's position.

In Dar es Salaam the extent and nature of women's participation in primary production varies considerably between households and this study did not gather enough data to make conclusions on this, beyond finding that this would be an area worthy of further investigation. As is the case with the suppliers to Tanga Fresh, all the larger herds identified are owned by men. Men dominate in the wholesale raw milk trading and retailing of Tanga Fresh milk, but women are more dominant in the retailing and vending of raw milk. Interventions to increase women's ownership and benefit from the sector would do well to start with the areas where women are already active. For example, improving the situation of women milk vendors may enable some to move into the wholesaling or at least benefit more from the activity they are already doing. The other consideration is that replacing the raw milk trade with processed milk supplied through Tanga Fresh, or the other current suppliers, would negatively impact the economic activities of thousands of women involved in milk vending.

In Dar es Salaam the collecting of fodder is done mostly by young men, reducing one activity that has been seen as a burden to women in many rural areas (Mkenda-Mugittu, 2003). The other side of this is that more young men are finding paid work in the production

side of the dairy sector in Dar es Salaam, compared to women (Kivaria et al., 2006). The challenge is to maintain a maximum number of decent work and ownership opportunities within the milk system and to encourage women's access to these opportunities based on understanding the constraints they face.

#### **8.5.5. Land pressure**

In the Tanga Fresh operation and in the urban and peri-urban production in Dar es Salaam, there is pressure on land availability due to urbanisation. Suppliers to Tanga Fresh are facing pressure on land for cattle grazing and fodder collection coming from increasing populations and urbanisation. A new housing development called "Pongwe City" in the village of Pongwe, which is within commuter distance from the town of Tanga, will directly affect some *wakulima* who sell to Tanga Fresh. There is also a threat to *wakulima* from urban and other elites acquiring land in peri-urban areas and villages around Dar es Salaam that are more accessible to the city both for dairy *wakulima* and commuters. Even when cattle are kept in sheds, unoccupied land is needed as a source of fodder that can be collected. Having these sources of fodder near to the cattle enables the cost-effective collection by push carts and bicycles. Dairy production, more than other less perishable commodities, benefits from proximity to the urban markets and is thus under more threat from urban expansion. Land administration needs to explicitly seek to maintain equitable access to land in these high demand areas. Urban planning needs to keep green space available to protect the dairy industry, assist with ensuring access to affordable milk for city residents and add to the quality of the environment and liveability of towns and cities.

#### **8.6. Conclusion**

The value chain approach has inherent flaws which mean it should not be the first choice for interventions to improve food systems to meet the needs of producers and eaters. I would not, however, rule out any value chain developments. In a sector, such as dairy, with highly perishable products there could be value, especially for *wakulima* further from the city and other markets. Such interventions would do well to consider the strengths and limitations identified in this chapter in relation to the Tanga Fresh operation.

There is a raw milk system that is economically competitive, socially embedded and producing and delivering the largest amount of fresh milk products to Dar es Salaam. It does this despite limited support and in fact a long history of negative attitudes and equally negative interventions from policy makers and development agencies. This raw milk system should be better understood and built on as part of efforts to create economic opportunities, increase dairy production and meet people's food and nutrition needs.

## Chapter Nine – Discussions and Conclusions.<sup>23</sup>

### 9.1. Introduction

This chapter draws on the findings presented in the previous chapters to put forward some core arguments of relevance to the practical and theoretical debates on feeding large and fast growing cities in ways that sustainably and equitably meet the needs of urban eaters and the food producers. The discussions in this chapter are organised into five parts: 1) Methodological lessons related to the ‘ride-along’ and transport; 2) The concept of the symbiotic food system revealed through this study; 3) Policy and programme lessons and recommendations with a focus on ensuring a sustainable food system into the future; 4) New directions for research that emerge from this work; and 5) Concluding section that summarises the main findings.

Key issues include seeing how the food system that feeds Dar es Salaam bridges the rural urban divide and is a relatively equitable and functioning ‘alternative’ to the globally dominant corporate agro-industrial food system. This symbiotic food system is not completely detached from the agro-industrial food system, but is not only impacted by that system; it also influences it and has carved out a space that operates with its own dominant ordering principles. As Chayanov noted with his extensive study off Russian family farms, the family farmers are drawn into the capitalist economy, but “[t]hey themselves then begin to influence these centres with the peculiar features of their economic behaviour” (Chayanov, 1986: 225). I give particular attention to explaining the nature of the symbiotic food system that is as much shaped by the influences of *wakulima* as any other system or actors. This food system feeds Dar es Salaam from across a wide geographic area and in doing so offers a middle-level alternative to both the ‘local’ and ‘alternative food network’ options and the corporate food system. The theorising of this food system draws on work on ‘common pool resource’ (CPR) management and ‘nested markets’.

The methodology, essentially of following the food, was a key factor in the nature of the information gathered and the conclusions derived from that. Before getting into the other conclusions, I therefore begin this chapter with a discussion of methodological experiences and particular lessons learnt in relation to the “ride-along”, that I believe could be of value for others undertaking such research.

### 9.2. Developing the ‘ride-along’: considering transport in research methods

#### 9.2.1. Introduction

As following the food is a central approach in the research I undertook for this thesis, it is not surprising that transport arose as an important logistical and methodological issue. I believe, however, that the lessons from this have wider applicability. Transport is not

---

<sup>23</sup> Some parts of this chapter have previously been published by the author in journal articles (Wegerif and Hebinck, 2016; Wegerif, 2014)

specifically referred to in Actor Network Theory, but means of transport are clearly actors themselves and serve to connect other non-human and human actors (Law, 2009; Latour, 2005). There are many research topics where transport is an integral, even if often neglected, part of defining and getting to understand the topic. I can't think of a business enterprise where transport is not an essential part of the business. Transport brings people together and does so in particular ways that impact on the relations between those people and between the people and the world around them. Transport brings commodities and material goods together and links them with each other and with people in particular ways that will impact on the outcomes. How we get around any place is a big part of the reality and experience of that place. That includes when carrying out research. What research project involving empirical research will not involve transport in some way?

For my research, I needed some form of transport to move around and between research sites. Initial research on egg supplies revealed a large number of bicycle based deliveries and there seemed no other, certainly no better, way to follow and learn about the egg industry than getting on a bike. I soon found myself riding with some of the egg distributors in order to understand their work and lives and to see where they got the eggs from. This brought home to me how the mode of transport, in this case one I had not expected for the research, impacts on the data gathered; what we see and how we see it. I began to think of transport as a methodological issue as well as a logistical issue. It has an impact on the people we interact with and the nature of that interaction. In my research transport choices affected my exposure to human and non-human actors; the equipment and the infrastructure that shape the flow of food (Matondi and Chikulo, 2015; Van der Ploeg, 2015). Transport choices are also important from a safety perspective. Yet in the methodology books and papers I had read and in the methodology course I completed at Wageningen University, "Methodology for Field Research in the Social Sciences" (a very good course), there was no mention of transport. Hence, this is a topic worth expanding on.

### **9.2.2. Existing literature or the lack of it**

There appears to be very little literature on transport as a research methodology issue. In looking for some work on this I came across the concept of the 'go-along', normally referring to the 'walk-along', but also making a limited mention of the 'ride-along' (Carpiano, 2009; Kusenbach, 2003). I understand the walk-along and ride-along to be sub-categories of the methodology of the go-along. Both Kusenbach and Carpiano focus on the walk-along which I find similar to the Rapid/Participatory Rural Appraisal (now Participatory Learning and Action for many) tool of the 'transect walk' (Chambers, 1994; Thomas, 2004; Carpiano, 2009). I have not found reference to the transect walk idea being used with transport.

The difference between the transect walk and the walk along lies in the transect walk normally being done as a group with a conscious effort to stimulate and learn from the group discussion, drawing on all the knowledge of the group (Oudwater and Martin, 2003). Another important aspect of the transect walk, which is not part of the walk-along, is the

visual representation to involve the whole group (Thomas, 2004). Transect walks can also be carried out with individuals and while the walk-along has tended to focus on individuals, it has also been used with two or more people when others join in (Carpiano, 2009). Another difference is that whereas the transect walk is almost always staged to go to a particular place looking for particular information, the walk-along, at least as practiced by Kusenbach, tries to “accompany individual informants on their ‘natural’ outings” (Kusenbach, 2003: 463). The ‘natural’ outing accompanies the person in their normal routines to see and explore their everyday lived experience as far as possible as they would normally experience it (Kusenbach, 2003). Carpiano, however, appears to have used the walk-along in a more staged way as one would set up an interview (Carpiano, 2009), something more like a transect walk with an individual. The writing on the use of the go-along is from urban research contexts and on the transect walk is primarily rural, which might explain why the writing on the two very similar techniques has not cross referenced the other, but methodologically there seems no reason to differentiate based on the different contexts.

I have previously used the transect walk for research and realized I had also, without calling it that, used the walk-along and found it very effective (Wegerif, 2010). Going with someone to where they are going, using the means they use to get there, in order to learn about an aspect of their life, is a common-sense thing to do. Many researchers must have done this before, yet surprisingly little is said about it as a research methodology. There is something equally natural about talking with someone as you walk, or use a common means of transport, provided it allows for conversation, especially to talk about things one observes and experiences on the way.

The literature on transect walks and walking-along identify the empowering potential of the techniques (Kusenbach, 2003; Chambers, 1994; Carpiano, 2009). The participatory rural appraisal approach, especially in its participatory learning and action variety, that the transect walk is part of, are explicitly about empowerment and putting the research participants more in charge of their own process of research and development (Chambers, 1992; Thomas, 2004). Done well the go-along is an equaliser; it puts the participants in a greater position of power, involves them in the generation of shared knowledge and creates a more egalitarian relationship between the researcher and the researched (Carpiano, 2009). Even more than walking together, using some forms of transport is certainly a great equaliser, like riding together on a packed and sweaty *daladala* in Dar es Salaam. Some means of transport put the people who are subjects of the research in a position of greater power over the researcher, such as when the researcher finds themselves depending on transport the person they want to get information from is much more familiar with or even owns.

Cook talks about food-following research and the need for more ethnographic work that will engage the researcher and the reader and build “empathy and care for unknown others whose lives are bound into the food we buy and eat” (Cook, 2006: 660). Cook does not, however, go into the details of the approach to the research, nor does he mention the ride-

along or transport, but he does set out a useful and motivating sense of the spirit needed for effective food-following and this can be given good effect through the well done ride-along.

Here I will expand on the method of the go-along with a particular focus on the underdeveloped idea of the ride-along, identifying the considerations regarding transport when doing research and the strengths and challenges as a research method. I will draw on the literature on the walk-along and transect walk and draw on my own research experience for examples and lessons.

### **9.2.3. Experiences of the ride-along from research for this thesis**

In this sub-section I share some experiences from my research for this thesis that illustrate the power of the ride-along and some of the challenges. I will then summarize some of the key lessons.

My approach has been to follow the food and the actors in the food system (Cook, 2006; Latour, 1996). These are human and non-human actors, in many ways I was at times carrying out a ride-along with the food more than with the human actor, even though there were human actors involved (Latour, 2005; Law, 2009). I walked, especially when accompanying people who were walking, such as when going to the market. I also cycled, which was at times the only way to accompany people who used bicycles for food distribution. I rode on trucks with the maize and rice that was being brought to the city.

Bicycles are used by traders in a number of settings and by *wakulima* in many areas to get to their fields. Using bicycles revealed a bicycle hire business in rural villages, which shows the ubiquitous nature of the bicycle as a means of transport in many parts of Tanzania.

Public transport was frequently used, such as *daladalas* to move around Dar es Salaam and coaches to travel inland to villages, markets and to *wakulima* who grow food that ends up in the city. Despite safety concerns, it was at times necessary to travel on the back of motorbikes. The approach I took was to travel as far as possible in the same ways that the human and non-human actors travelled, including traveling with vehicles transporting foods.

The various forms of transport are an integral part of the food system feeding Dar es Salaam as actors and processes within the system. For example, the importation of used trucks from Europe affects the cost structure of the transport industry and the importation of cheap motorbikes from China and India has transformed local public transport and in some cases food transport. The vehicles and roads used are part of the material infrastructure that enables and shapes the markets and the food system in certain ways (Van der Ploeg, 2015; Matondi and Chikulo, 2015).

#### **Walking and riding as one**

Walking is one form of transport and the walk-along has many of the same components, advantages and disadvantages as the ride-along. In practice the two are often integrated. For

example, when I met with a *sembe* producer and trader we started walking around the neighbourhood where he distributes, he showed me shops he sells to, we had coffee at a road side coffee seller where we chatted with other people drinking coffee and the seller, who the *sembe* trader knew. We then rode two *daladala*s to the area where he mills and there walked from the main road to the mill. On the *daladala* ride we met several people the *sembe* trader knew, including a man who paid the fare for the trader's *daladala* ride. When we walked I also experienced how the trader greeted, knew and was on good terms with a large number of people. After visiting and doing some tasks at the mill we had lunch at a bar together with his sister and brother in law before we walked to a *daladala* stand where we parted ways, he going into town, me heading home.

When I arranged to meet the trader, I had no idea how long we would spend together that day, in the end it became over five hours. Luckily, I had no other fixed appointments so could go-along. Along the way, I gained a rich picture of the social relations that the *sembe* trader was part of and amongst other things the respect people had for him.

Accompanying market traders to the wholesale market always involved walking and other modes of transport. One trip involved: walking to meet the transport (a minibus) at 3 am; riding the minibus which was an interesting place to observe the relations between the 16 traders on board at that early time of day; walking around the market; riding on a *daladala* hired by a different, although overlapping, group of traders; and after alighting from the *daladala* walking again this time with the young men who push the *mkokoteni* to transport the stock. Given this type of experience I consider walking as one mode of travel/transport along with a range of others. Each mode of transport of course has its own advantages, disadvantages and practical considerations to be taken into account. There are some common characteristics of the ride-along regardless of most means of transport, as well as some specific differences that I will highlight in relation to safety and the advantages and disadvantages.

### **Truck driving involves much more than driving**

As part of my ride-along (I had not called it that then) approach, I arranged to travel with one of the trucks from the large Kibaigwa grain market on the 340-km journey to Dar es Salaam; the main destination for maize from the market.

The ride-along started at 3 pm when I met the driver and he agreed that I could go with him. I was introduced to him by one of the traders who owned the maize that would go on the truck to Dar es Salaam. From then on, I stayed almost all the time with the driver and his assistant, going with them through the process of the journey that involved a lot more, as I found out, than the time actually on the road. This revealed a lot that they are involved with in addition to the driving. First there was the weighing of the empty truck and then the loading with what turned out to be 33.4 tons of maize and weighing again. The weighing is not just to check the total weight but also the distribution across the axles. If the cargo porters have not loaded it well they may have to shift some of the load again. Then there is

covering the load with a tarpaulin and tying it all down, a job done by a group of men who specialize in that work. A tyre had to be changed and repaired which involved using tyre repair services in the village, the truck had to be fuelled at a particular filling station where the owner of the truck had an account. The son of the truck owner was involved in getting the tyre fixed and the refuelling.

The assistant to the driver had a close relationship to the owner of the truck and it seemed he was sent to keep an eye on the driver, who was very new with the company, as much as to assist. He was certainly not the typical 'ton-boy' (assistant, or driver's mate) who often accompanies drivers. An illustration of the different role this assistant played is that while the driver was getting tyres fixed and the truck fuelled, the assistant started drinking Konyagi (a Tanzanian spirit similar to gin) at a bar near the market.

Over the hours of these preparations for the road I had a good reason (excuse) to stay with the driver and his assistant, observing and discussing what was happening. I had explained my research to them, but as the hours went by there was little sense of a researcher and interviewee relationship. I was just with them getting ready and then on the journey to Dar es Salaam. I was an inquisitive passenger, but the awkwardness that is often present in an interview situation had faded away.

The driver was, during the preparations, talking on the phone to the mother of his six-year-old daughter who was living in Kibaigwa. He wanted to see the daughter who he had not seen in years, it did not work out this time, but as he now worked with a truck company based in Kibaigwa, it may in the future.

We eventually set off at about 8 pm and almost immediately stopped to pick up a passenger who had been arranged by another form of *dalali* who has contacts with truck drivers and arranged the ride for the passenger. The ride-along provided an opportunity of hours to talk with the driver and his assistant, to observe their interaction and their phone calls and messages, that for the assistant involved expressions of love to a number of different women in different towns. I experienced the eating place and the food where we stopped for a very late dinner. Observed how the checking of the tax payments was done and the payment of bribes at one weighbridge and one police stop.

The driver was careful and the journey was smooth. At some point, I climbed onto the bunk above the driver and passenger seats of the truck and was enjoying lying there listening to the sounds of the truck and conversation. That was until about 2 am when the driver was tired and asked the assistant to take over for a bit. The fact that the assistant did not have a truck driver's license and had been drinking Konyagi was not encouraging. Indeed, his gung-ho approach to the various women in his life, as witnessed from the phone calls, was similar to his driving style and the speed of the truck increased. It was not long before the shouts of TUTA! (bump) from the driver (who was no longer driving) and the passenger startled me out of half sleep at about the same moment that the impact of the speeding truck hitting the speed bump slammed me against the roof of the truck and dumped me on top of

the driver and passengers below. Luckily the truck stayed on the road and did not hit anything else. We stopped to inspect the damage. The speedometer and other parts of the dashboard that had flown out were put back although not working, wire was used to tie on panels that had come loose and there was nothing we could do about the loss of some lights. At least we had one headlight left and the load of maize had not shifted much, the cargo porters and the guys with the tarpaulin had done a good job.

A little before 4 am, almost eight hours after leaving Kibaigwa, we were in Manzese, Dar es Salaam and called the *dalali* who directed us where to take the load. We parked in the narrow street until close to 6 am when a group of men came to unload. The maize was unloaded and weighed again, sack by sack, before being stacked at the storage area of a maize milling operation. Ten men did the unloading, one man handled the scale, one more wrote the weights in a book and another monitored it all. By 8.45 am the maize was unloaded and the last grains swept up and the driver was tying the tarpaulin in place on the back of the empty truck. But this was not the end; we still had to wait for the payment to be made. At 9.50 am, the ever patient and calm driver got the money from the mill owner, informed the 'boss' (owner of the truck) by phone and we left. Having seen that process through, I got on a *daladala* and headed home.

What I hope this summary of the journey confirms is the value of the ride-along for gathering information and getting to learn about and experience things that it would be hard to do with any other research method. It also highlights some of the dangers that need to be considered. I got away with bruising and a shoulder injury that took some months of physio-therapy to sort out. It could have been worse and the experience was so rich that I continued to ride-along with other trucks during the research.

### **Reaching the parts other research methods can't**

An important source of rice for Dar es Salaam is the Mbarali District about 800 kms away. I carried out research on the rice production and husking in Ubaruku, a village in Mbarali, and wanted to ride-along with rice from Ubaruku on its journey to Dar es Salaam in order to see the whole process from the field to the plate. The first driver I agreed to go with later said his 'boss' had called and said he must not carry any passengers. Interestingly the 'boss', who lives in Kilimanjaro Region over 1,000 kms away, had been informed by someone in Ubaruku that there was a person who was going to go on one of his trucks. It was the middle of the afternoon when I found another driver willing to take me along with him and 30 tons of rice to Dar es Salaam. I got my bag from the guest house where I had stayed and put it in the truck, all ready for the road. We had not started moving yet, but from then on I was on a ride-along with the rice, the driver, the ton-boy and the truck.

The first challenge was that we were still short of 2.5 tons of rice. The owner did not want the truck to leave if not full. The transport *dalalis* were looking around for a trader who had 2.5 tons ready to go to Dar es Salaam. After an hour or so someone was found with just the right amount. It was loaded up and I thought we were about to leave. Not so simple, now

started what turned into a lengthy process of arranging the payment of the tax, the casual labourers who had done the truck loading, the deposit for the transport and the commission for the transport *dalalis*. That payment process would have been complicated enough, but first the money had to be collected from the five traders who had rice on the truck, some of whom having made their purchases had already returned to Dar es Salaam. We eventually left Ubaruku at about 8.45am the following day, by which time I had already learnt a lot.

I got to have dinner with the truck driver at his preferred bar and eating place and also stay in the guest house that he normally uses. The transport *dalalis* came and went in the evening and in the morning until all was finally settled and we could leave. There was plenty of opportunity to get to know more about the life of a truck driver and others around the bar and the guest house that are part of the infrastructure that enables and benefits from the rice business. More importantly for this study was the chance to see how all the transactions around the rice, the tax and the transport worked.

This was my second visit to Ubaruku and I had been interviewing and spending time with *wakulima*, traders, the husking machine owners and operators and met with representatives of the local and district government. What I had never realised up to that point was what an essential role the transport *dalalis* played. These are not rice traders or rice *dalalis* they 'just' organise the transport, or so I had been told. What this included, however, was first and importantly arranging the bulking of the rice from different traders and across the different husking machines to fill a truck. It also involved arranging tax and other payments, which therefore also meant getting the money from the various traders. The transport *dalalis* had to work out how much each would pay and as they collected the money from different people they also ended up actually making the payments. The transport *dalalis* also become the 'insurance', or at least problem solver, if something goes wrong on the way. They have the contacts of the truck owner and all those with rice on the truck.

Once on the road there was more to learn, such as when we stopped at a private weighbridge where trucks pay to check the weight of their load before reaching the government run weighbridges. As the balance of the load was wrong the driver paid a group of men, who derive their livelihoods from doing just this work, to rearrange the load.

This ride-along revealed important information that might otherwise have been missed or not fully understood. I gained a substantially different understanding of the roles of some of the important actors in the supply of rice to Dar es Salaam.

### **Cycling-along**

Having found that eggs were being delivered to shops by bicycle I wanted to see where the bikes and the eggs came from. Clearly the easiest way to do this was to go with some of the cyclists. Arranging to meet at their homes would have been possible, but awkward for amongst other reasons the challenge of giving clear directions to a place with no formal street plan or street names.

Riding with the cyclists I could accompany them on the short cuts they used down alleys and stay with them on the narrow paths in the peri-urban villages where they stayed. Cycling does not make communication easy, especially in traffic and narrow spaces, but I saw and experienced a lot. I saw where the riders stopped in the morning to have breakfast, which they paid for when they came back after selling the eggs. I experienced the challenges of the road system that made no provision for bicycles, so in some places they competed with cars and trucks and in other places people rush across their path to get on *daladadas*. On one ride, I found a small collection point where some egg *wakulima* would meet up with the cyclists. This was in a place that cars could not easily get to. I met the bicycle repair men and the women selling water and cool drinks who sit under trees alongside the road.

Almost two hours cycling together, including some stops, in the heat and traffic of Dar es Salaam established a bond with the person accompanied. I continued to meet the cyclist who delivered to my local *duka* over years and visited his home and met his family. Basic, but important, was seeing where the cyclists lived and where the eggs come from.

#### **9.2.4. Lessons learned on the ride-along**

The ride-along, first and foremost, gives the researcher the experience of the participants, it can never be completely the same experience given the researchers different perspective, the impact of their presence and the temporary nature of their involvement, but it is much richer than if one was never there. It provides a richer experience than one can get from a sit-down interview outside the places and the processes being talked about. As Carpiano put it: "The go-along method is a unique means of obtaining contextually based information about how people experience their local worlds" (Carpiano, 2009: 271).

It is hard, unless you are there, to get a sense of the comradery of a dozen women market traders waiting in a dark street at 3 am for a common transport to the wholesale market. I don't think I would understand in the same way the lives and work of the young truck drivers I went with to Kiteto, if I had not felt the freezing early morning air in a truck with no heating and windows that won't close. Had not spent hours on a bumpy gravel road and seen the sun rise with them over the disputed grazing land and maize fields of Kiteto. I would never have really understood the impact of poor roads on the biggest trucks and their drivers if I had not ridden in them. From the outside the truck trailer combination, weighing close to 50 tons when loaded looks invincible and like it will ride over anything. From inside, you feel every bump through the rock hard tyres, the truck bucks and kicks over the bigger bumps, including those on the not so good tar roads. The difference between a good and a bad tar road (as long as there were no real pot-holes) didn't seem significant in my car, they really made a difference from the cab of a truck pulling 30 tons of rice and unable to slow down or swerve too quickly.

The first-hand observation of the relations between actors in different settings can confirm what the researcher hears in an interview and add much more nuance. For example, I learnt a lot going to the market with Josephine (sub-section 5.3.1.), seeing her interactions, the

choices she made and the level of familiarity with the products and the sellers. These are things that often do not come up in an interview, some of it is taken for granted and some thought not to be important information worth sharing with a researcher. Even if we are told that 'I buy from a person I know or from a friend in the market', it does not give the researcher the same feeling for what that means compared to seeing and hearing how people greet each other and shout across the market to someone else and chat, including getting updates on how a sick child is, etc.

The ride-along builds solidarity through the shared experiences which can assist in an open communication and in some cases it creates the time needed to talk with people, both people the researcher already knows and was traveling with and those that might be met on the way. On one bus ride, I found I was sitting next to the Imam from a village where a Chinese company had been allocated land. The Chinese were not producing anything he said, but were rather renting out the land to local small scale *wakulima* who did not have access to other land, in part because the Chinese company had such a large portion. In that case I did not manage to follow up with research in the Imam's village, I might well go back there in the future, but already I find it useful to know that the phenomenon of foreign 'investors' becoming landlords appears to go beyond the villages where I had time to do more in-depth research.

The ride-along often involves eating, as the example with the *sembe* trader and truck trips shared above illustrates. This is great for a study of food and could be useful for a range of other studies. Eating is almost always social and reveals a lot about social relations, it also has observable economic dimensions. Given the social and cultural embeddedness of eating the researcher needs to be sensitive to and able to go along with the norms where they are doing the research. If not the opportunity to learn from and bond further with participants, could result in the researcher annoying participants and set the researcher apart.

### **To go with a 'natural' or unnatural outing**

The examples shared above are largely based on the ride-along in the form of accompanying actors on a 'natural outing' (Kusenbach, 2003), that is accompanying people on the trips they do as part of their normal lives. This has clear advantages for getting a first-hand experience of particular processes. The example of the go-along/ride-along with the *sembe* trader and the work with the cyclists also included some showing me around which was not part of the natural outing. With the *sembe* trader we arranged to meet for him to show me around in order to assist with my research, it was therefore not a natural outing. He showed me how he operates which was advantageous for getting a broader view in a short time frame. I would not have got to see and meet so many of his customers in such a short time if I had only gone to them when he made a visit for work reasons. At the same time, he fitted in some work and relationship maintenance with clients and a visit to the mill, all of which he need to do. He decided where to go and when, I followed. The cycling followed natural

outings, but also took in some detours to see where the egg producing *wakulima* and the chicken feed factories were.

### **Expenses protocols**

Any traveling can take time and involve expenses, such as on food. It is important to be sensitive about what you pay for and what you let the person you are with pay for. In many cultures the host (The researcher will normally come from elsewhere and the person they are going-along with will be in their environment so the host even if not at their home) provides and pays for food and in some cases insisting on paying as an outsider can be patronizing and rude. At the same time one does not, as the researcher, want to become a burden on people, especially if they are people living in relative poverty. Sometimes the issue is how you pay or contribute. Mutual gifts can work e.g. he buys or gives me a meal, I buy the drinks or the next meal. In the course of my research I experienced many different situations, I was often given food (paying for food in someone's home would have been unacceptable), in some situations I paid for things and was asked for assistance (which in some cases I gave and in others I refused), at other times I had people who even covered transport costs for me. When given something, I would show appreciation and generally try and find a way to reciprocate, after all they were already assisting me with their time and information.

### **Time and planning**

Whereas a sit-down interview of one and a half hours is long and feels like a big ask of a participant, going along, can give the researcher many hours, even days and nights in some of my experiences, to interact with the participants. If you ride-along with someone on their natural outing and ensure you are not a burden, the time limit is only the limit of the journey. If you are friendly and helpful participants may even appreciate your company. It can, however, be difficult and unhelpful to plan your time too rigidly. In many cases the ride-along may take a lot longer than expected and this will often combine with an opportunity to get a lot more data than might have been expected. I would have missed many enlightening experiences if I had not worked with a lot of flexibility and been able to follow processes that were important parts of the food system I was trying to understand.

### **Safety considerations**

Road accidents are the 11th highest cause of death in Tanzania accounting for approximately 3% of all deaths (World Health Organisation, 2014). Even more worrying, however, is that road accidents are the top cause of death by injury in Tanzania and indeed across Africa. Worse still, according to the World Health Organisation, “[g]lobally, road traffic crashes are a leading cause of death among young people, and the main cause of death among those aged 15–29 years” (World Health Organisation). The fact that road accidents are the leading cause of death of young people (i.e. people of typical student age) should be reason enough to give the issue consideration in planning research. Given that many victims of traffic

accidents are pedestrians, sticking to the walk-along does not exempt the researcher from this potential danger.

One of the most dangerous ways to travel in Tanzania is on a *bodaboda* which is a common means of transport across eastern Africa. I had decided that riding on the back of a *bodaboda*, was something I was not willing to do. The frequency of grim accidents on these *Bodabodas* was just too much and I had children to take care of. But then, one evening I arrived by bus in the small town of Kilosa and the last bus to my destination of Zombo had already left. The *Bodabodas* were there and ready to take me. After a cup of hot ginger sold by the woman in the corner of the square that forms a public transport terminal, I decided to get on the motorbike. I selected a *bodaboda* and rider that both looked in good condition and insisted on wearing a helmet. The just over 20-km journey on a gravel road was fine. Two days later it was mid-afternoon on a hot day in Zombo and I had spent four or five hours walking around maize fields with a helpful local *wakulima*. We were trudging back towards the village along a track when a motorbike passed us. My companion was quick to flag it down and jump on the back of the motorbike looking at me to follow. Three of us were soon bouncing along a dirt track, me at the back, with no helmets in sight. My walk-along had become a ride-along and my no motorbikes rule had been firmly crossed out.

There are safety concerns to consider beyond the risk of traffic accidents. Walking or riding along can put the researcher in a range of potentially dangerous situations (Carpiano, 2009). My research into the feeding of Dar es Salaam involved late nights, early mornings and all night going-along with the hard-working actors that get food to the city. It helped, but still provided no guarantees, that I am a man who is 1.87 metres tall and over 90 kilos. There is a gender dimension to this that research supervisors should also be sensitive to. Spending the night in the cab of a truck with three men, may not be a good option for a woman researcher unless she had developed a high level of trust with at least some of the men. Any researcher will need to take basic precautions and make choices that they are comfortable with. Going with participants who know the situation helps as long as you can trust them. These considerations mean that, useful as it is, the ride-along may not be your main research method or an option at all, in certain cases.

Researchers should be cautious and set some limits for their own safety, but my experiences show how difficult that can be in practice. When choosing a truck to go with from Kibaigwa to Dar es Salaam I chatted a bit to the driver and established that he was sober and reasonable. When the driver's assistant started drinking I inquired if he would need to drive and he said no. I had few options, however, and none of them were attractive, when in the early hours of the morning, on the side of the road somewhere, the driver handed over the driving to his assistant. The driver was falling asleep but wanted us to keep moving, objecting would have been difficult, getting out of the truck also not a good idea. Refusing to get on the back of a *bodaboda* with no helmet in Zombo would also have been awkward and have imposed more walking in the hot sun on the very helpful *wakulima* who was with me.

In both cases objections from me would have caused inconvenience to people who were assisting me.

One needs to accept that once you have started on a particular journey a lot of things will be beyond your control and with the ride-along the researcher had better be ready to go-along or otherwise ready to deal with what people are doing. In any research process, you may find yourself having to make some difficult choices about how you proceed, but with the ride-along as a method you are likely to be exposed to far more situations (part of the value of the approach) compared to the generally much more controlled environment of, for example, a sit-down interview.

It is therefore important, without becoming too risk averse, to think through the situations you could find yourself in and what you are and are not prepared to do. This applies to issues other than transport of course, but the ride-along is likely to expose you to potentially tricky situations. Without curtailing the research more than necessary, try and avoid getting into situations where you will have very hard choices to make.

### **Reflexivity and transport choices**

Reflexivity is about being aware that the researcher is part of the process and can impact on that process and shape the outcomes from it (Green and Thorogood, 2004). It requires critical reflection on one's own research practice and its impact on the environment the actors that are part of the research as well as the way we interpret and write up findings (Latour, 2005; Denzin and Lincoln, 2005; Green and Thorogood, 2004; Charmaz and Mitchell, 2001; Denzin, 2001). This applies to transport choices made for logistical reasons as they can impact on the research even when not using the ride-along as a research method. As I do not believe it is possible for the researcher to be invisible in the research process and outcomes, it is essential that the researcher is very conscious of how they impact and works to reduce the way they may shape the data they gather and how they analyse it. Green and Thorogood suggest four "good practice" approaches that demonstrate a reflexive awareness": 1) "Methodological openness"; 2) "Theoretical openness"; 3) "Awareness of the social setting of the research itself"; and 4) "Awareness of the wider social context" (Green and Thorogood, 2004: 195). Transport choices should take particular account of the last two of these. The way the researcher arrives at the research site will have an impact on how they are perceived and thus what they get to see and hear. It might also shape how they see, the transport they are in or on will change the researcher's perspective, especially their first impressions of the place they arrive at. Imagine two scenarios, both in which you arrive to meet someone under a tree on a hot day after a long journey on a dusty road. How will the experience of arriving under that tree be if you step from behind the tinted windows in an air-conditioned car that took you there? Compare that to how you will feel stepping off a bicycle as you arrive under the tree having ridden there under a blazing sun.

Commenting on the situation in Tsunami devastated areas of Sri Lanka Naomi Klein wrote:

"Almost everyone I met commented on what one priest called "the NGO wild life": high-end hotels, beachfront villas and the ultimate lightning rod for popular rage, the brand-new white sport utility vehicles. All the aid organizations had them, monstrous things that were far too wide and powerful for the country's narrow dirt roads. All day long they went roaring past the camps, forcing everyone to eat their dust, their logos billowing on flags in the breeze —Oxfam, World Vision, Save the Children" (Klein, 2010: 403).

The statement from Naomi Klein is eloquently written and based on a fairly extreme situation, but the role and image of the big four wheel drives is common. In many of the villages where I carried out research in Tanzania there are very few cars. The few vehicles present are old and used for business purposes. The big four wheel drives, with working air conditioning, used by the 'development' agencies and NGOs set their users apart from local people. I have been in the big Land Cruisers speeding down dust roads displaying the attitude that anything smaller must get out of the way. The reception I got in villages arriving on a local bus or the back of someone else's motorbike was very different from the reception I got when stepping out of an Oxfam branded Land Cruiser. There were clearly different expectations. For one, when arriving in the Land Cruiser, I got so many stories of suffering followed by requests for some form of assistance and the village leader's explanation of the latest project that just needed a bit of funding. When arriving on public transport as a student I got more assistance from people and heard more about their successes and aspirations. This could be due in part to the difference of role – ignorant student versus NGO expert - and also the line of questioning - more what are you doing? Rather than, what can I do for you? The thing is that whatever you say to people, arriving in the big car costing around \$40,000 immediately sends a message that you are somehow important and/or an expert, that there is little a 'humble' *wakulima* who is thankful to have a bicycle could do for you. A greater awareness of the social setting and wider social context will help limit such mistakes.

I have also observed that many researchers do arrive at research sites in big four-wheel drive vehicles owned by NGOs, universities and others. This happens because many students get funded to do research on 'development' projects and/or link with NGOs and others who can facilitate access to communities. In my own case I could at times have arranged rides with Oxfam, who I worked for, and I could have used my own car. In fact, there were a few times when I combined field research with other activities and did arrive at a research site in my car, a 12-year-old Subaru Forester. The response I got from people was noticeably different when I had a car. I would become the driver offering a lift, rather than the fellow passenger on public transport or the person offered a lift. I was more often asked for money, both to help with people's needs and approached to see if I wanted to invest in farming or other businesses. It was important to deliberately step away from the comfort of the car.

The bicycle, as an alternative to the car, turned out to be a very useful research tool even when not on a ride-along with cycling participants in the research. Of course, it also helps

covers more ground than one can when walking. The bicycle is also convenient in the narrow streets of the many *uswahilini* (informal settlement) areas of Dar es Salaam and on the narrow paths of villages. Unlike a car, the bicycle does not set the researcher apart from the research participants socially or physically. While adding speed, compared to walking, cycling still enables you to see, smell and hear what is going on. It is easy to greet people when passing on a bicycle and stop to chat when appropriate or useful. Compared to public transport it gives one a flexibility to go into different areas and stop and change direction as one wants to and in response to new things discovered.

Even when not traveling with a research participant, using the form of transport that most participants and their fellow community members use provides valuable insights into their lives, especially if their lives involve a lot of travel. There are sounds, sights and smells that interviewees will not tell you about and that are hard to understand, if not experienced first-hand. Sharing, at least a little, in some of these experiences also put me in a better position to discuss the work and lives of the actors in the system when I did talk to them; I had been on the same busses as the maize and rice traders, slept in the same guest houses, been on the trucks.

#### **9.2.5. Strengths and considerations summarised**

In conclusion, I summarize here strengths and considerations in using the ride-along. These are derived from my own field research experiences, as illustrated with examples in the previous pages. I also draw on the existing go-along and transect walk literature, especially Carpiano's identification of strengths and weaknesses of the walk-along (Carpiano, 2009: 267).

Strengths of the ride-along as a research method:

- You see, hear and smell what is going on. The ride-along can give you a direct exposure to situations, processes, people and things that you would not be exposed to without being along for the ride. The nature of the journey itself is a learning process about things that you cannot fully understand without being there. All of this contextualizes what you hear from people in interviews.
- It is a good way to observe the social and working lives of participants. Going along with someone gives one a reason to be there through a range of situations and interactions.
- It creates time and opportunity to talk to people who it can otherwise be hard to get time with. Obvious examples are truck drivers, but there are others, such as busy traders who can be reluctant to sit and do an interview even of half an hour, but are quite happy to spend hours with you if you ride-along with their schedule and travel.
- It helps build a comfortable and equitable rapport. It is very natural to talk to someone, especially about what one observes around, when walking or traveling with them. "Indeed, there seems to be an intuitiveness to the task of showing and discussing one's neighborhood with an outsider" (Carpiano, 2009: 268). We are in the same boat, truck or

bus, together. It is hard not to develop some solidarity with people on a common journey especially if the journey is tough. Traveling together tends to demonstrate a commitment and genuine interest in the person you are with, all of which assists to have an open and informative interaction with them.

- You gain legitimacy through being part of people's situations and sharing common experiences and also through the introductions you often get along the way. It is common for the person one is with to meet others they know during the ride-along and to introduce the researcher to people they know, including to gatekeepers who could be essential to the research. I experienced people I was with, taking pride in introducing me to people both because they could demonstrate to those they knew their importance in showing the foreign and white researcher around and also to demonstrate to me how many people they knew, especially if that person was in a position of authority.
- It is a great equaliser. There is the potential for the process to put the participants in the research more in control and for them to be more engaged with the outcomes and the issues. It is a good platform to engage people in discussions about the issues and what they would like to see done in their community, market or food system. The equalising nature of the process assists in this process as well as the very practical nature of the in-situ discussions. It can involve learning together as the researcher explores the environment and the issues with the participant/s.
- It is a good opportunity to find and recruit new participants as you have opportunities to meet a diversity of people, including those you might not ordinarily be introduced to by others. That meeting and the 'foot in the door' from the introduction can assist in follow ups.
- The ride-along will often provide the stories and experiences that provide a good opportunity to "narrate our own 'detective work'" (Cook, 2006: 660) in a way that can engage and build empathy, an engagement that can be a driver of change.

Cautions and considerations in using the ride-along:

- Safety and security, both the high risk of road accidents and crime in many countries, especially in dangerous modes of transport and in countries or areas affected by violence. The risk can be to the participants as well as the researcher. The researcher needs to think about how they could create new risks for participants, such as due to them standing out in the local environment or the raising of suspicions amongst others about those they ride-along with. The value of the ride-along is in the exposure to more different and even unexpected situations. This advantage can also make it riskier compared to many other methodologies. The researcher in planning to use the ride-along needs to think through what situations they might be exposed to and are willing to be exposed to.

- Gender relations and gendered roles mean women and men are not always using the same transport. There will often be gender factors in terms of who the researcher is exposed to and has the opportunity to interact with on a particular ride-along. This requires combining the ride-along with other research methods and specific actions to ensure that women and men are heard. Social and safety considerations can also impact on the access that researchers of different sexes will have to participants and particular situations. There is a need to take into account how men and women are treated differently and may face different risks in many contexts.
- Mother nature, both the weather and the health of the participants and the researcher, can impact on the feasibility and advisability of the ride-along.
- The time of day and the schedules of the people and processes involved with the research focus will affect the conditions and the social interactions. Participants are often only available at certain times of day and in certain seasons. These factors are a reason to largely go with people's 'natural' outings, but even when doing this, the researcher needs to be aware of how time and seasonal factors may be influencing the experience.
- Recording audio and writing can be difficult in many ride-alongs. Noise and movement is almost always part of the ride and makes good recordings hard to get. The researcher will often have to make do with writing up notes of what they have seen and heard as soon as possible afterwards. Complementing the rich experience of the ride-along with interviews in a more controlled environment may be needed.
- Flexibility is very important to be able to follow and get a fuller experience of the process and take advantage of data gathering opportunities that arise and may not have been expected. The flexibility and sensitivity of the researcher to fit in with and not disturb the participants is important.
- Capture for analysis the location and contextual issues as well as and linked to any interview information. Someone referring to 'that tree' or 'that house' or simply pointing does not tell us much when we cannot see what they are referring to. The significance of these things needs to be captured. What is observed is often going to be as valuable as what is said and this is the specific information that the ride-along gives the researcher access to that other methods often don't.
- Apply reflexivity to transport. Within and beyond the ride-along, the mode of transport that the researcher uses will impact on how they are perceived and responded to and will also affect what they as researchers are exposed to and how they perceive and analyse that.
- Be conscious of expenses that are likely to be incurred and as a researcher handle these with sensitivity to local norms and conditions in order to not insult or burden the participants.

The ride-along would rarely be used on its own for a research project, but alongside other methods can add a lot of value to qualitative research. In my research for this PhD, the ride-along has been an important method used alongside others including interviews, participation observation, and conversation. The ride-along and wider transport issues should at least be considered in the design of almost all social science research. Travel safely and enjoy the ride.

### **9.3. The Symbiotic food system**

There are some things happening in the food system that is supplying the majority of people in Dar es Salaam that are hard to understand from an orthodox or neo-classical economics perspective. These and other existing theories don't satisfactorily explain the phenomena I have been examining in my research, which leaves important questions. For example: why do dozens of traders sit next to each other all selling the same products with little or no effort at differentiation on the basis of price or quality? Flynn in describing the main market in Mwanza noted that "[t]hough I expected to find greater variation among vendors in terms of the products they offered for sale, everyone was selling virtually the same types of items for the same price" (Flynn, 2005: 48). Shouldn't they, as Flynn clearly assumed, be competing with each other to take a greater share of the market and make more profit? Perhaps the more ambitious and enterprising should push a few other more inefficient traders out of business and take over their operations, employ more people and grow even bigger as part of a process of accumulation that a large number of both Marxist and neo-liberal theorists assume is both necessary and inevitable. But they are not doing that, instead they are helping each other. A women trader having to go and care for their child who is sick could be a business opportunity for another trader to take over some of her customers and grow. The woman who is taking time for child care is less 'efficient' from a narrow financial and productivity perspective in the market place. She is not there when some of her customers come, but instead of taking advantage of that, her neighbour, who is selling the same products, sells the goods belonging to the mother of the sick child for her and gives her the money when she comes back. I am not saying that instances of exploitation and taking advantage of others don't happen, they do, but the dominant mode is different, this is shown by amongst other things, these traders have been sitting together and trading for years, in some cases for decades. How do I explain this?

Another example is the assistance that shopkeepers and traders give to others to get into the same business. Why does a rice trader assist another person to become a rice trader buying in the same areas and selling in the same markets in Dar es Salaam? Surely, they are creating a competitor who could negatively impact on their own business. An existing rice trader knows the suppliers and the markets and sees that there is opportunity to do more business so tells someone he knows about it and then even travels with that person to show them where to buy, introduces them to people on the way, etc. Why are they doing this? Why don't they increase their own operation to benefit and accumulate for themselves from the

market opportunity they see? Perhaps they could employ another person to work for them and thus be able to get economies of scale and expand beyond the trading they can do themselves. Surely that is the 'logical' thing to do from an economic and business perspective. But instead of this they take their time and share their knowledge and contacts to assist someone else.

Despite the above questions the food system is functioning, delivering the food every day at a city feeding scale, growing and showing resilience. This section explains why by describing the Symbiotic food system that this study has found to be feeding Dar es Salaam.

### **9.3.1. Getting started**

How any system reproduces itself is foundational to the nature of that system. Does it reproduce ever greater inequality? Does it have high barriers to entry or create accessible openings and routes into the system that keep it equitable? In this research, it has been found that social relations and mutual assistance are important factors in how any person starts in business. This sub-section, therefore, focusses on how people enter into different parts of the food system. This shows reproduction, therefore the continuity of the system, but even more interestingly, it shapes the nature of accumulation and inclusivity within the system. It will impact issues such as social formations and alignments in struggles within the system.

What has been found is that there are accessible pathways for people without many resources to get in and progress within the system, and these pathways depend on the support of others who one could argue are competitors. Through this the system grows through replication, or 'multiplication'. Harris-White in analysing what she refers to as petty commodity production (PCP) in India noted "[i]n neo-liberalizing India, PCP is numerically the commonest form of production and contributes roughly as much to GDP as the corporate sector. Reproducing by multiplication rather than accumulation, it drives growth in Indian livelihoods" (Harris-White, 2012: 109). What I show here is how at the micro-level this happens in practice.

An historical note is that the range of efforts to undermine the Asian traders during the first decades of independence, touched on in the introduction to Chapter Six, played a significant role in creating the space for African traders to emerge (Bryceson, 1993; Raikes, 1978; Shivji, 1976). I believe this contributed to the creation of a relatively equitable food system as it not only reduced the role of a particular racial group, it reduced the role of those with an existing larger amount of capital and assets. For example, Bryceson argued, based on research in the 1980s, that policy uncertainties prevented Arab and Asian transporters getting into staple food trading, while the lack of capital amongst African traders prevented them getting into transporting (Bryceson, 1993). Thus, the space was left for new entrants into staple food trading as those with capital withheld it and vertical integration did not take place and was replaced by the need for different actors to work together, including African traders often collaborating to hire trucks (ibid).

### **Shopkeepers and *Duka* owners**

The main route to becoming a *duka* owner is to work in someone else's *duka* and through that, gain the experience and save the money to be able to start one's own *duka*. Interestingly, this is very similar to the approach used by Indian traders who were at points in history dominant in Tanzanian trading (Bryceson, 1993). The twins who own Mangi's *Duka*, described in Chapter Five, worked for years in a *duka* owned by someone from the same area that they are from near the town of Moshi. The practice does, however, extend beyond ethnic and geographic links. The same approach is used when involving collaborations between people who are not necessarily related, but get to know each other in the cultural melting pot of the big city. This may be particularly the case in Tanzania with its long history of nation building, including the promotion of the common language of Kiswahili.

A rice trader and Dar es Salaam shop owner I met in Ubaruku explained it like this: "I worked for someone else who employed me, he helped me with capital, because from those wages he paid me he kept some with him. When the day came to leave, I said master give me what is mine, I want to be independent. He gave what was mine to me, I started... but after saving, and he has seen he has benefitted from that work you did, at the end he will do this, but if you do work that goes badly at the end there will be nothing again".

In some cases, people obtained capital from elsewhere, outside the retail sector, to start a shop, such as from farming; when a good harvest combines with good prices, *wakulima* can get a windfall and be able to invest elsewhere. In the case of Nassor's grain shop, described in Chapter Five, the business was started by a security guard and his brother. They saved up to have enough capital, but also needed and received important advice and information from another shop owner in the same line of business.

### **Truck Drivers**

The truck driver travelled with from Kibaigwa to Dar es Salaam, carrying a load of maize, had started his working life as a 'ton-boy' (assistant, or driver's mate). He had asked for a job at a truck company and spent years as a ton-boy before getting enough money and assistance from one of the drivers to get a license. Spending time as a ton-boy turned out to be a common route followed by drivers in order to learn about the job and how to drive as well.

Riding in another truck with 30 tons of rice on the more than 800-km journey from Mbeya Region to Dar es Salaam, there was plenty of time to talk to the driver and his ton-boy. The driver started working as a ton-boy in 2004. "I learnt many things about trucks when I was a ton-boy" he said. Later, he was assisted by another truck driver (he described as "a friend") to learn to drive, and in 2008, he got his own driver's license and a job as a driver. The ton-boy started in 2013 (two years ago, at that point). He is paid by the driver, not by the

company. He is not paid much, but also gets food and a place to sleep, normally in the truck. The ton-boy wants to become a driver and for now, seems satisfied to be learning the ropes and doing the dirty work of changing tires, cleaning the truck, etc.

### **Traders**

Most of the traders, such as those at the Kibaigwa Market, have some kind of assistant or assistants. The relationship between the traders and their assistants looked in many ways similar to the apprentice-like relationship that the drivers and their ton-boys have. The assistant does much of the dirty work; they get supported by the trader and get some bits of extra money, especially when a deal has been done. Importantly, they are learning the business and making contacts.

All of the traders who were traveling to Kibaigwa for maize had initially been shown the place and how the system works by someone else. The same thing was found with rice traders traveling even further to buy rice. This makes sense; you are unlikely to just get on a bus and travel across the country to a place you do not know and start walking around looking for people selling maize or rice. You also would not hand over large amounts of cash to someone you just happened to meet there. As others have found, the personal links and references build trust and are an important part of how such business works (Sulemana, 2016; Granovetter, 1985). These are passed along, as well as information. As Granovetter points out, in the absence of the ideal situation of having one's own direct experience of dealing with the other person, "[b]etter than the statement that someone is known to be reliable is information from a trusted informant that he has dealt with that individual and found him so" (Granovetter, 1985: 490). The people who assisted traders starting out were sometimes relatives, but also friends without any family or ethnic links. Sabiha, a maize and *sembe* trader I met in Kibaigwa, who had been assisted by a friend when she started in the business, said "people give each other according to how they know each other".

A rice trader I met who has been in the business since 1999 said "it is essential when you start to get someone who can lead you, for the first journey and the second journey then you can start to be independent". He explained that when he started "I was with a friend like this one [pointing to the other trader we were sitting with]... they were not a relative, it was someone who had experience, I just asked to go with them, they explained this grain you can sell for this price, and this grain for this price, you buy for this price and then you sell for a certain price, just like that".

Even the experienced traders still spent much time with each other, eating lunch together, staying in the same guest houses, some traveling together. Inevitably, much information is shared in the processes. When poor weather and conflicts resulted in less than expected maize availability in Kibaigwa in 2015, the traders were talking amongst themselves about where else to go to find more maize and better prices.

Samuel, who delivers eggs by bicycle from peri-urban Dar es Salaam to *dukas* in the city (Chapter Seven), started delivering eggs in mid-2011. He was told about the business by another person already doing the same egg deliveries. Samuel described the person as “a friend” and when asked, confirmed the person was not a relative. This person not only suggested that Samuel should try it, but also went with Samuel to show him an area and shops where he might be able to sell. Other egg delivery men told a similar story; they were told about the business by friends or people they knew in the business.

When a trader, *wakulima*, truck driver or another actor assists someone to become their competitor in the same business it is not immediately clear the motivation and how symbiotic the action is. It appears on the surface to be a rather one-sided relationship lacking in expectations of reciprocal actions from the other party. The reality is the drivers of these actions probably vary, but all have a logic and the practices would not continue if they did not bring some positive outcomes. I explain this logic in the coming sections.

### **9.3.2. Common pool resource management and the symbiotic food systems**

The functioning of ‘common pool resource’ (CPR) management, as studied by Elinor Ostrom and others (Ostrom, 1990), as summarised in Chapter Three, assists to understand and explain the symbiotic food system.

The first finding in this regard is that the more formally structured and recognised market places are clear CPR situations with different actors all investing in and utilising the common resource of the market place and its infrastructure. The management of these market places fits remarkably well with Ostrom’s design principles for long-enduring CPR institutions (Ostrom, 1990). The following paragraphs highlight these similarities.

The more structured markets I have looked at all operate with some form of membership and limitations on entry to membership and operate in a defined space. They very much operate within the social norms of the society and tend to have rather informal and low cost ways of operating as befits the context. The rules are set, formally and informally, by those involved.

Interestingly across the markets looked at in this thesis, the biggest complaint about the organisation of the markets came from members (the users and those affected by the use of the market resource) at Kibaigwa who argued that the members of the Board of Kibaigwa Market were not representative of the members and users of the market and were not from among them. This was a situation where the rules were not being set or monitored by those affected as per Ostrom’s principles for good CPR management.

The monitoring in most of the markets is formally through the elected leadership and informally through fellow members with a degree of mutual accountability. Sanctions include social isolation, fines, loss of use of services and ultimately expulsion. There are conflict resolution processes, again more formalised ones such as disciplinary action by committees and more informal, such as fellow members intervening. At Kibaigwa the

Market Manager often directly intervenes and talks to the parties involved when conflict breaks out or looks like it could.

There is little interference from any outside authority, these markets, for the most part, get on with their own operations. The state involvement does, however, provide an important endorsement that legitimises the market and its leadership, but otherwise they are fairly absent. The health inspections in Ukonga-Mazizini Abattoir are the most direct form of state involvement in the examples of market places shared in this thesis, but even these, in the midst of all the activity there, felt quite light touch and the health inspectors were also very integrated into the market/abattoir and had a good rapport with the members and leaders. Again, the complaints at Kibaigwa confirm the theory through what was seen as not working. There were tensions at Kibaigwa, precisely related to the feeling that there were too many external people and too much tax taken by the state.

All of the markets looked at are good examples of 'nested enterprises' with many different groups and layers of organisation in each market. For example, in the Shekilango chicken operation there are butchers (also sub-divided into 6 groups of butchers), traders, the market itself, those who collaborated to build the new shelter and informal sub-groups of women cooperating in their operations and many more collaborations within and among the market and its users.

The second area where I further develop the application of CPR management principles to market places is in finding that the very market demand is a form of CPR. If we consider a group of traders all selling green vegetables in a market, like Mikoroshoni, they all depend on the same essentially finite demand (combination of need and purchasing power) for their products. This demand may fluctuate a bit, in response to price changes and to improvements in the economy, or could be changed a bit by things the market, as an organisation, does to promote or make itself more accessible to a wider population. But all these changes would still leave the same traders depending on the same finite, even if varying, demand. Therefore, if one trader were to sell to far more customers they would be taking a larger proportion of the unchanged demand and money available and leave less for the others. This is just the same effect as the one cattle owner over stocking common lands as in the classic tragedy of the commons argument put forward by William Forster Lloyd in the early 1800s or one of the water users' groups all depending on the same aquifers in California pumping more than their share of water (Ostrom, 1990). Efforts and related costs to improve the market place and the market demand will tend to be borne by all, thus if the benefit is not enjoyed by all the group management starts to breakdown.

An interesting dimension of the management of demand as a CPR, in the markets I have been looking at, is that it appears to be largely governed by informal and implicit arrangements more rooted in peoples' cultural repertoires, including common norms, than in formal agreements. There are no meetings of the traders to set common prices, no rule saying you cannot advertise yourself, but there is familiarity between the actors and there

are social rules and norms which are followed in defiance of the logic of accumulation. Ostrom uses the concept of 'internal norms' and identifies this as one of the four main bases for people's decision making in CPR settings. She goes on to find that "[w]hat types of internal norms an individual possesses are affected by the shared norms held by others in regards to particular types of situations" (Ostrom, 1990: 37). In the symbiotic food system, we are dealing with actors who come from similar types of situations; they share, among other things, common ways of cooking and ways of producing and trading food.

My third argument is that the internal norms that people in the symbiotic food system operate from are a core component of the ordering principles of the system. Even where the formal structures of CPR management do not exist, the internal norms continue to play a key role. These are strongly established among people in different parts of the system who have a lot of shared experience. These internal norms are not only functioning within defined groups who organise themselves for the effective management of the CPRs, but they are carried out into a wider set of interactions and contexts as a core part of the cultural repertoires that anchor the symbiotic relations.

The notion of polycentric governance that Ostrom has been developing also has application in the symbiotic food system. These are clearly complex systems that are polycentric in nature, having many centres of power that are formally independent, but ultimately part of an interdependent set of relations (Ostrom, 2010). Almost all parts of the symbiotic food system involve polycentric governance, which is another reason why we should not be surprised to find some characteristics of CPR management across the symbiotic food system. In particular, the way actors learn what works over time in CPR situations, the way trust and common norms develop and the valuing of equity among people who are familiar with each other, are all relevant to the way the symbiotic food system works.

Despite the similarities that parts of the symbiotic food system have with CPR management, it clearly extends beyond CPR management. Larger parts of the symbiotic food system fall outside anything that would fit with Ostrom's use of the concept of institutions and management. In a number of the market places, such as around the rice mills at Ubaruku, there is no form of recognized institution or explicitly agreed rules. Nevertheless, the market, as in the transactions and relations between people, functions there in a similar way to the more formally organised markets. Thus, the symbiotic functioning of the food system is a wider phenomenon that cannot be explained with ideas of CPR management alone.

### **9.3.3. Are these nested markets?**

The concept of 'nested markets', introduced in Chapter Three, has been developed to explain new responses, with different structural characteristics, to the agro-industrial food system and mainstream markets (Hebinck et al., 2015; Matondi and Chikulo, 2015; Van der Ploeg et al., 2012). Drawing on Schneider et al's useful summary of the six characteristics of "nested markets" (Schneider et al., 2015) I show below where the symbiotic food system converges and diverges from the 'nested market'. I find that the symbiotic food system:

- 1) Like other markets, operates along-side and interlinking with other segments, including beyond the agricultural and food sectors. For example, the trucks transporting a wide variety of goods to neighbouring states create the conditions for the affordable transport of heavy grains on certain routes to Dar es Salaam. The business in those heavy grains likewise enables those other economic activities by helping to cover the costs of the trucks.
- 2) Is especially institutionally embedded. In fact, the nature of the institutional embedding is not just another characteristic of the symbiotic food system, but is its foundation.
- 3) Relies on a particular socio-material infrastructure, as other markets do, and this enables a particular product flow. The symbiotic food system is not necessarily, however based on “circular” rather than “radial” patterns nor necessarily on “short versus long distances”. The symbiotic food system, as shown with the examples of maize and rice in this thesis, can operate over quite long distances and frequently is quite radial in the flows with no particular direct feedback or link between the final buyers and eaters of the food and the producers.
- 4) Involves and could be said to be grounded upon and involving “common pool resources” (Van der Ploeg et al., 2012). Indeed, the very market demand met by symbiotic food system and the market places within the symbiotic food system are managed as CPRs and some characteristics of CPR management permeate and underpin the symbiotic food system. Elements of CPR management principles are some of the defining characteristics of the symbiotic food system.
- 5) Is not “created for a purpose” or necessarily the outcome of social struggle as nested markets are claimed to be. The symbiotic food system is not consciously or sub-consciously “constructed with the aim of providing an alternative to the dominant ways of trading, markets and distribution”, it is not part of “actively constructed responses” (Van der Ploeg et al., 2012: 140). The symbiotic food system, unlike nested markets, is an historic form that continues to evolve. It is defined and shaped primarily by the particular characteristics of its own ordering principles and sustains due to the intrinsic value and advantages of these principles whether in relation to another dominant market form or not.
- 6) Certainly involves a lot of discursive relations and a lot of spaces where individuals congregate to discuss, and not just talk, but transact (Habermas, 1991). The mutually beneficial relations are central to the symbiotic food system, but this does not necessarily involve the public sphere as found for “nested markets” by Schneider et al (Schneider et al., 2015: 193-196).

There are also further characteristics of the symbiotic food system that are not well captured in the concept of nested markets, these include:

- 1) The large number of actors involved and the level of equity among them and in the sharing of value between them. Importantly, while there are certainly inequalities, some parties are not rising to such positions of dominance within the system that they push out others and take up too much of the CPRs. Others have noted, even if they don't necessarily see it is a positive thing, the lack of differentiation and low levels of inequality within what has variously been referred to as peasant production and petty commodity production (PCP). For example, "[i]n Williams' 'peasant society', inequality did not indicate differentiation, but twenty-first century India even lacks evidence that, despite its heterogeneity, there is much inequality in PCP" (Harris-White, 2012: 144).
- 2) The system is based on interdependence, which as the term implies requires mutual benefit and a fine balance between actors. This relates to the point above, as with high levels of inequality the interdependent relationships will tend to shift towards relations of domination and dependence.
- 3) The common cultural repertoires (Hebinck et al., 2001) that can be further explained by understanding the internal norms that exist and hold together the social and economic relations between people.

The markets within the symbiotic food system and its functioning as a whole are built on long established historical practices; they are not, as often stated for nested markets, a new phenomenon. They are evolving, but they are not new or emerging and they are in many ways shaped by their pasts. I do not believe, however, that all symbiotic food systems necessarily have to be long-standing or historical systems, beyond the reality that all current forms are to some extent products of their past, even if that past may be a relatively short one based on recent struggles. Thus, the symbiotic food system, overlaps with elements of nested markets, but also has important differences and other elements that are important to understanding it.

#### **9.3.4. Symbiosis: a core ordering principle**

The data that informs this thesis shows the way that cultural repertoires are shaping market relations and the food system as a whole, but this is not a full explanation. This does not identify the particular characteristics of the cultural repertoires in which these markets are embedded. It does not tell us the underlying ordering principles that find expression in particular conventions and internal, as well as social norms in the food system. It is in trying to address these questions that I offer the concept of a 'symbiotic food system'.

Across the symbiotic food system, there are a range of forms of symbiotic relationships that include more horizontal relations among people performing similar roles, more vertical relations between actors performing different roles in the supply of the same commodities and complimentary relations between different activities, which are mutually enabling or reinforcing.

There is the mutually-beneficial cooperation between similar actors in the system who perform the same services, such as the vegetable sellers in the market sitting next to each other and helping each other out. They go together to the wholesale markets and watch over each other's stalls and even children; a practice that has obvious advantages as long as it is reciprocated. When asked about why they are not competing, some of the traders in the market identified the negative consequences of trying to compete on price: "If I reduce the price the other traders will too and we will all get less", said one woman at Mikoroshoni. Other traders expressed similar sentiments. There are the *sembe* traders sharing a mill (making the mill viable for them all), sharing a truck to bring their maize to the city more cost effectively and sharing much time and conversation in the shade of the same tree. The *wakulima* who grow the same crops, share information, sometimes work together and sometimes collaborate to sell jointly. These *wakulima* are often neighbours as well and part of the same social circles, going to the mosque together, drinking together and being together in social events such as weddings and funerals.

These basic forms of collaboration have gone on for a long time. Based on research carried out on food trading in Tanzania in the 1980s Bryceson found that:

"Amongst retail traders occupying the same marketplace, various forms of cooperation take place. Retailers will mind each other's stalls when a colleague has to absent himself/herself for short periods of time. They will pool their funds to hire commodity transport. Mobile intermediaries are objectively in a very competitive situation with one another, yet they must depend on each other for market information and joint transport arrangements. Retail and mobile intermediary cooperation tends to be informal and ad hoc, but very important in overcoming occupational constraints" (Bryceson, 1993: 142).

If traders in the same commodities are not competing on price or distinction, how do they attract customers? How does the customer decide from whom to buy? During the research, one response to questions on this came up again and again "tunazoeana", meaning "we are acquainted/familiar with each other". It implies that people are used to each other and that there is a level of mutual trust. The expression is mutual, implying reciprocity and symbiosis. The actors spoken to did not say "I am familiar with them" or "they are familiar with me", they refer to "we". People in the food system give food on credit, buy from someone, share the cost of common transport for their goods, show them how the business works, all because they are acquainted/familiar with each other. As one key informant put it; "people bank on relationships". This reflects some of what Flynn found in the food system of Mwanza where she noted "people banked in social relations by providing support to others like them in hope of winning their assistance in the future" (Flynn, 2005: 204).

There are actors who occupy different parts of the system performing different roles: transport providers to the maize traders, sack sellers at the Kibaigwa Market, the food sellers who feed the cargo porters, traders and *dalalis* in the market places. These different types of

businesses depend on each other. Bicycle repair men on the routes travelled by bicycles delivering eggs depend on the bicycles and enable the smooth operation of the bicycle deliveries (Wegerif, 2014a). Food and drink sellers on the same routes and in the market places all live from and support the traders in the food system. The provision of the services is also shaped to fit the circumstances of the customers. It involves being in the right place at the right time, giving credit to people they know and receiving payment at times that work for the business cycles on which their customers depend.

There are the complementary relations, such as the purchase of *pumba* from the maize mill and blood from the abattoir to supply the chicken feed factories which in turn supply the urban and peri-urban chicken meat and egg production. The *sembe* industry as a whole is in a mutually beneficial relationship with the urban and peri-urban chicken industry around Dar es Salaam. The chicken industry is in a similar relationship, through the supply of manure, with urban horticulture. The maize and rice industries benefit from the harbour in Dar es Salaam and transport routes that take other goods to neighbouring countries, creating a situation where trucks are coming back empty. Without this, there would not be such an easy availability of transport, and the costs would increase, potentially changing the viability of the operations.

In the cattle market and abattoir and the chicken market, described in Chapter Five, we see clearly how many actors complement each other's operations. Every part of the process and the animal is turned into a business of its own. This is not surprising, but what is interesting is that it is not part of a centrally-organised business or government-planned operation. There are no plans drawn up, no contracts and no central management of the myriad different actors and relations. Rather, there are many different actors who all find their place and work together without plans or formalized agreements. They are truly interdependent, as the whole and individual parts of the operation would not work or be viable without the others. What does hold them all together is a well-developed sense of their mutual interests, common cultural repertoires and familiarity between the actors. These do not have to be explained to people or renegotiated all of the time; most people come from similar contexts into the system with a sense of them and are quickly assimilated into the ways of working. As others have found, economic actors operate "from a repertoire of alternatives that reflect social structural constraints" (Biggart and Beamish, 2003: 450). Asking the different actors to explain how the system works and what makes it work often elicited strange looks and shoulder shrugging; "we just do it like this". Biggart and Beamish also note that "[e]conomic activity is carried out in repeating cycles and, over time, economic routines become lost to conscious reflection" (ibid: 452).

There are actors who supply to and buy from each other the same commodities; the *wakulima* sells maize to the local trader; Lingo buys green vegetables from the Ilala market and sells to his customers, etc. We can look at these simply as economic transactions, but what makes them symbiotic is the mutually-beneficial nature of the transaction, including an equitable benefit sharing. Crucially, these are transactions between actors who are

familiar with each other, of similar social and economic status and that operate within a common set of cultural repertoires. There are of course inequalities, but not so extreme as to result in great power imbalances or social disconnection. When there is no equity in the relationship, we are more likely to see one party taking over more and more of the operations of others, whether through vertical or horizontal expansion.

As mentioned in the sub-section above, the sustaining of the symbiotic relations requires a multitude of different actors and a reasonable level of equity between them. This can be undermined if any particular actors or group of actors become too dominant and could also be undermined with higher levels of horizontal or vertical management integration. Such vertical and horizontal integration are part of most value chain interventions, but the institutional limitations and rise of certain types of leadership undermine the possible benefits, even when structured as cooperatives, as shown in Chapter Eight and from the experiences of cooperatives in Tanzania more broadly (Hydén, 1980). In a precursor to much later value chain and cooperative development theories, Chayanov proposed vertical integration for marketing purposes, through cooperatives, in order to secure the space for family farms in the more global economy rather than allowing capitalist forms of vertical integration to dominate (Chayanov, 1986: 269). Unlike most of his work, this proposition was not based on analysis of empirical data, but was instead speculation about a possible future. Chayanov was of course writing before the forced collectivization experiences of the United Soviet Socialist Republic and China (Gardner and Lerman, 2006; Lin, 1990; McHenry, 1976). Chayanov fell into a form of the modernisation paradigm that assumes a particular kind of centralised and rational organisation is necessary. This position could have been in part informed by Chayanov's rather brief analysis of patterns of agricultural product distribution and marketing that include finding high levels of centralisation. These patterns look very similar to what I have seen in the symbiotic food system at the local level, with collection from many small farms through agents and traders. Beyond the local level, however, Chayanov describes marketing models for different crops that have nodes with a high level of concentration of power, aside from in the model for the marketing of hay that is more inclusive (Chayanov, 1986: 260-261). I hope it is clear that while I found many forms of cooperation within the symbiotic food system, I did not find evidence that cooperatives as an institution have a strong role to play. In fact, where I did find formal cooperatives existing they were problematic. Therefore, part of the conditions for the functioning of the symbiotic food system are an absence of corporate or formalised cooperative management and instead what is important are levels of equity, without nodes of high concentration of power, across many actors in both vertical and horizontal plains.

The rice husking businesses in Ubaruku (Chapters Five and Six) involve large capital investments in the machines and warehouses. The owners of these are visibly wealthier (driving large cars, living in large and well built houses, etc.) than most people in the area. Despite this they still follow a business model that is totally dependent on the relationship with the many *wakulima* and traders who use their machines. None of them have their own

rice production of a scale that can utilise more than a small percentage of the husking capacity they own. Most are also hands-on owners who are often at the machines and warehouses, directly involved in their operations and interacting and familiar with the *wakulima* who bring rice paddy and the traders who are buying the rice. This could change, however, if they got access to even greater amounts of capital, as Mposi wants to do, and are thus enabled to bypass the symbiotic relations they have with other actors. This can happen in other parts of the food system, where we can see that greater access to capital by some actors would give them the option to no longer collaborate with others. For example, a rice trader that can fill a 30-ton truck by themselves does not need to share the truck with other traders. The one with that capital no longer has the same level of common cause with the others, she may under these changed circumstances begin to explore options of domination in relation to others who she no longer needs for her own success; the symbiotic relations will be threatened. This is a significant consideration given how often improving access to capital is seen as a positive development intervention.

The transactions remain symbiotic when there is a level of choice (competition) about which specific actor any other actor has to deal with and also mutual benefit between the specific actors in the specific transaction and at the same time dependence between the types of actors in the system. The maize mill owner does not need Enjo to mill their maize at his mill, but he needs *sembe* traders like Enjo to use his mill; just as Enjo does not need that particular mill, but does need a mill owner willing to mill maize for others. The *duka* owner does not need Enjo, but does need a *sembe* trader working at a scale and in a manner that fits his operation. The element of having other options, not depending on that specific trader, keeps the negotiations between two parties real; either can walk away if the deal does not work for them. At the same time, each party knows that they will need to deal with someone providing a similar service with similar interests, so they are going to have to accommodate those interests. These are the conditions of interdependence that are essential to the maintenance of a symbiotic market relationship.

It would be naive to think that there is no competition and no economic forces at work. Indeed my research found strong elements of competition in parts of the system, but it also found that, first of all, the mode of competing is not only based on utility and price. It is, for example, as much about the relationships established between people. Secondly, while competition exists, many forms of collaboration and mutual assistance also exist and shape the system. In this food system, I see the laws of supply and demand most clearly every year in the seasonal changes in prices. The maize prices drop when more comes onto the markets following harvests. The prices go up when the supplies reduce. Dry years and conflicts in maize growing areas reduce supplies, and the prices go higher. But this does not mean these basic economic forces are the only ones at work, especially in the day to day and transaction by transaction relations between different actors that connect with each other through and beyond the financial transactions.

The socially-embedded symbiotic relations also affect the transactions and shape the way transactions happen and who benefits from them. The social relations are providing the glue that holds the system together, and the symbiotic ordering principles are setting parameters within which economic decisions are made; just as the economic ordering principles are setting parameters within which socially-embedded relations are maintained.

The symbiotic nature of the relations extends to the way in which people assist each other to get into the food system, as described in sub-section 9.3.1. When the employed shopkeeper knows he or she will, if they work well, be assisted by the owner to start his or her own *duka* in the future, he or she has a powerful incentive to work diligently and honestly. This is essential to the owner who cannot be there supervising all of the time. *Duka* owners, traders and truck drivers who assist others to get into the business strengthen their social network and benefit from having an ally to work with in the future. At a minimum, they get a competitor who they are familiar with, rather than ones they do not know. I can speculate that there may be a sense of contributing to the wider system they work in, just as academics peer review articles without payment, not because the person whose article they are reviewing will directly reciprocate (they do not even know who the reviewer is), but out of an understanding that this is part of what makes the system that they benefit from work, that is more symbiotic. There can also be non-material reasons to assist others, such as it being a way to leave a legacy and gain social status, which we know is important in most, if not all, societies (Scott, 1985; Bohannan and Dalton, 1962).

It is interesting to observe that these types of arrangements found across the food system mirror many that exist on the small farms that produce the food going to Dar es Salaam. All of the *wakulima* learnt farming first on other people's farms, normally the farms of their parents or other relatives. Some reasonably successful *wakulima* take in young men as general assistants working on all aspects of the farming operation. They are rarely paid much if anything, but are given food and shelter, and they learn and fully expect to farm themselves in the future. Many of the casual workers found on the small farms in my research sites are themselves *wakulima* working to get enough capital to develop their own fields. It is reasonable to believe that the set of norms prevailing on farms are carried into the wider food system along with the food produced, especially as many people across all parts of the food system, or their parents, come from similar farms.

The ton-boys are not organizing to get better conditions from the truck drivers. The employed shopkeepers are not organizing to get shorter working hours from the shop owners. In both cases, the hours are indeed long and the pay low, but these workers are aligning themselves with their employers in order to get into the business or start their own. As long as the process creates those new business opportunities, those involved do not perceive themselves as exploited, and the emergence of elites is also limited.

The concept of symbiosis applies to the system as a whole, not only to the specific actor relations and transactions. It is symbiotic in that multitudes of actors are collectively

delivering at great scale but with no centralised management from cooperatives, corporations or the state. The system is instead held together around the ordering principle of symbiosis underpinned by interdependence, common cultural repertoires and familiarity.

Traders, *wakulima* and others in the symbiotic food system are assisting each other and collaborating in ways that clearly value collaboration over competition. Collaboration made easier by familiarity that informs actor's decisions in the system as much as concerns about 'utility'. This familiarity has levels to it, from the general familiarity between people that operate from common cultural repertoires to the familiarity of people who have known and interacted and transacted with each other many times. In this situation, people are making decisions all of the time to collaborate with rather than try to outdo the other, and in doing so, they are creating a level of security for themselves and resilience in the system as a whole. Despite the limitations on competition and accumulation, overall production in the symbiotic food system increases through replication rather than through the 'scaling up' of particular enterprises.

### 9.3.5. Competitiveness of the symbiotic food system

In addition to the social and environmental advantages of the symbiotic food system over the corporate food system, there are four main ways in which (or reasons why) the symbiotic food system is competitive and therefore resilient from a narrow financial perspective. As well as these being further advantages of the system, they also help explain why and how it survives and grows.

1. In the symbiotic food system, there are no, or almost no, management overheads. Complex multi-function and multi-actor systems are running with high levels of collaboration (symbiotic collaboration) without any manager or management plan involved in making it work. Where there is management it is largely owner operator management without additional costs.
2. There is no extraction of profit for absent shareholders. All profit stays with the actors in the midst of the system, much of it going back into the operations. The modest lifestyles of many of the owner operators add to this competitiveness. For example, few *wakulima*, traders or *duka* owners in the system have any private car; they travel on public transport and stay in low cost guest houses. As owner operators they are sensitive to costs and they don't assume benefits like staying in nice hotels should be given to them (as NGO workers and corporate employees expect). The minimal surpluses taken out of the businesses tend to go directly into reproduction in the form of maintaining families, homes and ensuring education and health care for children. The other dimension of this, which creates further resilience, is that because the primary motivation is to support oneself and family, rather than to invest for returns on capital, the business can keep going when there is no profit. Just as Chayanov pointed out for peasant farmers, the actors in the symbiotic food system, including *wakulima*, do not stop the operations simply because it does not give them a return on capital over and above a minimal level

of reproduction (Chayanov, 1986). Most of the actors throughout the symbiotic food system can adopt a similar approach to the peasant of maintaining operations at a very minimal level when times are bad and thus still being there and ready to take advantage when the conditions have improved.

3. Labour costs are low due to the owner working themselves as well as the use of family and apprentice labour. This combines, despite low pay, with high loyalty through commitments and incentives to labour who see a path to progress for themselves. Another labour cost saving is from the mutual support among traders. A stallholder does not need to hire an assistant for those times she has to do other tasks, she can take some time out relying on the fellow stallholders to look after her stall and not sabotage her operation.
4. There is an efficient utilisation of all limited capital inputs because of the use by multiple human actors of the non-human actors such as the trucks, the milling machines and other equipment. The enterprises have no vertical integration involving capital invested and tied up in different parts of the system. There are instead multiple different actors providing specific services in symbiotic collaboration with other actors. For example, the traders don't own trucks, they hire them as and when needed and only for the time needed. The truck is also kept fully utilised because it potentially serves an enormous number of actors from within and beyond the food system. The trader can put all their capital into stock, if they don't have a lot of business they are paying nothing for transport (or cost of capital for a vehicle). If they get a small order they hire a small truck, if they get an enormous order they can hire larger trucks. The maize and rice mill owners keep their equipment running in a similar way and the traders also benefit, with, for example, the barriers to entry for *sembe* traders staying low, because they don't have to buy machines as they can hire milling machinery as needed.

Well organised corporate enterprise, especially at a certain scale, can make efficient use of capital such as trucks or milling machines, but not without management costs for organizing that. The other problem is that the corporation can only keep all its assets, like trucks, running if they have a sufficient scale and spread of operations that will ensure there is always work for those trucks. Even at a very large scale it is hard for the corporations to compete with the range of potential users of their trucks that any truck owner, even with one truck, has potential access to in Tanzania. They have access to these users (clients) through serving essentially all sectors of the economy as organised through symbiotic systems including the networks of transport *dalalis*. Azam is one of the biggest industries in Tanzania with an annual turnover of more than \$800 million and investments from food and beverages to shipping and television (Bakhresa Group Ltd, 2013), but their trucks still benefit from the symbiotic food system through regularly collecting loads of maize from the Kibaiigwa Market when they are returning empty from making inland deliveries. Azam cannot keep their trucks busy and loaded as effectively as the symbiotic food system can.

Presenting the use of family labour as giving the symbiotic food system a competitive edge, may be controversial to some. There is a well-developed literature on the notion of self-exploitation that spans many decades and continues today (Harris-White, 2012; Chayanov, 1986; Medick, 1976; Millar, 1970) and there is a gender analysis of how women's labour has been exploited in agricultural production, including in Tanzania (Mbilinyi, 1994). There is even the discovery and examination of self-exploitation within "community supported agriculture" (Galt, 2013), despite that being built around the notion of buyers acting in support and solidarity with farmers. This is a debate that I cannot do justice to here, but I would urge readers and possible future researchers in this field to consider that notions and measures of exploitation need to better take into account: 1) The situation where a person may work long hours, but they work at their own pace and include many social and recreational activities within their working time and place, such as the shopkeeper whose work day includes watching football and chatting with friends, even sleeping when business is slow; 2) That many actors who may be seen as low paid workers are not stuck in that situation for their entire working lives, but rather are at a particular stage of a clear path to becoming owners of their own businesses in the future; and 3) How the common and linked assumptions that this exploitation of self and family labour is created by and subsidizing capitalism (Harris-White, 2012; Medick, 1976) may not be correct, or at least not the whole picture, when the exploitation is done within a symbiotic food system that is providing low cost food and services to a range of actors and productive entities that do not conform to typical notions of capitalist enterprises.

The very important point is that the symbiotic food system is highly competitive. This has been noted even by critics of 'informal' production and distribution systems, such as Minten et al writing on the experience of a company trying to sell green peas and other vegetables in Madagascar. Minten et al state that "Lecofruit has tried to sell its fresh, high standard, vegetables to the emerging modern retail outlets in Madagascar. However, the company was not competitive with local informal suppliers" (Minten et al., 2009: 1730). Just like Sumberg when commenting on the dairy industry in Dar es Salaam (Chapter Eight), this competitiveness is somehow seen as a problem as it is assumed another system is superior, even though acknowledged as less competitive. Writing from a very different, more political economy, perspective, Harris-White comes to a similar conclusion of the competitiveness of peasants stating that "[e]xternal impositions—such as new technology generating economies of scale, the reorganization of production to reap collective advantage via co-operatives and development projects by big business/capital or the state—can all be undercut by peasants producing more cheaply using self-exploitation, local knowledge and existing institutions" (Harris-White, 2012: 111). Far from being a problem, I would urge that this competitiveness be acknowledged as an advantage and through identifying what makes it competitive I hope it becomes clear that there is an intrinsic value in this system which can be built on.

### 9.3.6. On formality, survivalism, proto-capitalists and struggle

Firstly, I want to reiterate here, as explained in Chapter Two, that I am not comfortable referring to the food system that feeds Dar es Salaam as ‘informal’. What I have found is a dynamic system that is the dominant supplier of food to the city, pays taxes, and most importantly has its own logic and ordering principles. It is not trying to be ‘formal’. I am well aware that in looking at the food system of Dar es Salaam I am not covering all sectors and others will have different kinds of actors (human and non-human) and therefore different sets of relations, other parts of the economy will have different dynamics, some perhaps more fitting of descriptions such as informal and survivalist. Even within the food sector the multitudes of actors operate at different levels, as Davis (drawing on the work of House in Nairobi and Portes and Hoffman in Latin America) points out we need to be aware that there is large differentiation within what some call “informal” (Davis, 2006: 180).

I don’t believe what I present here falls into the category of “wishful thinking of bootstrap ideologues” (Davis, 2006: 181) who see the ‘informal’ sector as the development solution, yet I am aware of the risk of that. I am avoiding this, because I am talking about what exists and does already deliver food at scale and creates many income earning and ownership opportunities for those who produce, distribute and sell the food. Further I don’t believe the actors and their enterprises are moving or aspiring to being capitalists in the way De Soto (De Soto, 2000) and others assume, nor are they running their enterprises as a last resort because they cannot get ‘formal’ jobs elsewhere. They are operating within and largely aspire to places within the symbiotic food and related systems, which have some distinctly different characteristics from what is assumed to be typical capitalist enterprises.

The eaters and traders I talk to and the nature of the symbiotic food system I see in Dar es Salaam gives me a lot more hope for the future than the picture I get from Davis’s Planet of Slums (Davis, 2006). Many of these eaters and traders would be considered by UN Habitat definitions to be living in “slums” (UN-Habitat, 2003: 8–16), yet they have resilience, ingenuity, and aspirations that are not simply “survivalist”. Of course, there are people with aspirations to formal employment, but the brothers owning and running Mangi’s Duka never tried to be civil servants or to get ‘formal’ employment; they worked in another *duka*, saved, started their own *duka* and now run their own complex business with many suppliers and customers. There are so many Mangis in Dar es Salaam, and they form such a central part of the patterns of food supply that I am loath to think of them as informal or survivalist. Samuel runs his own small business producing, buying, transporting and selling eggs. He makes choices, such as whether to invest in more chickens of his own or buy more eggs from others. In terms of working hours and net profit, what he does is far superior to what he could get from a ‘formal’ job. Lingo worked in a shop in town, but decided to take up his mother’s vegetable business and he takes a pride in his small business that he runs on his own terms. All of the *wakulima* and traders have a good deal of autonomy and they want this. Even Jamil, who sleeps on the side of the road doesn’t want to be employed, he wants his own business. He already knows that he doesn’t want to be controlled by someone else,

which he sees as an inevitable part of being employed. The mill owners in Ubaruku come from different backgrounds and have all now accumulated a reasonable amount of capital, but they still operate within and depend on the symbiotic relations of the symbiotic food system.

#### **9.4. Policy and development planning considerations for a sustainable food system**

“Designing institutions to force (or nudge) entirely self-interested individuals to achieve better outcomes has been the major goal posited by policy analysts for governments to accomplish for much of the past half century. Extensive empirical research leads me to argue that instead, a core goal of public policy should be to facilitate the development of institutions that bring out the best in humans” (Ostrom, 2010: 24-25).

The symbiotic food system is functioning with many positive attributes that I believe can be built on to improve the system and its outcomes. My appeal, overall, is for policy and development programme decision makers to find ways to better understand and create a more enabling environment for this symbiotic food system and the actors within it. This requires putting aside some modernisation and orthodox economics driven assumptions.

This section suggests some practical areas for consideration in any interventions in the food system to secure the right to food for city eaters in ways that are sustainable, equitable and more beneficial to producers and others that derive their livelihoods from the food system.

##### **9.4.1. Alternative food networks and city region food planning**

Unlike the relatively young alternative food networks and urban food planning initiatives that have attracted attention in Europe, North America and elsewhere (Wiskerke and Viljoen, 2012; Nasr and Komisar, 2012; Derkzen and Morgan, 2012; Renting et al., 2003; TFPC, Undated), the symbiotic food system feeding Dar es Salaam has a long track record of delivering food at a city feeding scale and doing this in a way that makes a substantial contribution to rural development. Neither is this a static system; it is evolving not least through the substantial increases in total production to keep pace with the needs of a fast-growing city. One rice trader, who has been in business since 2001, said that “when I started, people did not plough like they do now. Now they plough a lot. They have added a lot”.

The symbiotic food system feeding Dar es Salaam is not the result of direct and intentional interventions by the state or other institutions. It has certainly not arisen out of any explicit city food strategy or plan developed, nor has it involved a food policy council or other such structure, as has happened in other cities, such as Toronto, London, Brighton, to name a few (Wiskerke and Viljoen, 2012; Derkzen and Morgan, 2012; Stierand, 2012; Morgan, 2009). It has rather evolved around five main factors. First is the demand for food in Dar es Salaam that has created a growing market for *wakulima* and others in the food system. Second, is a

common set of cultural repertoires among the social actors, with symbiosis as a core ordering principle, that enables the functioning and growth (through replication) of the food system without the need of any centralised coordination. Third, is key infrastructure, such as the roads and irrigation systems for rice growing some built for purposes of food production, others not. Fourth, technology, such as the rice and maize milling machines, accessible to local business people, including *wakulima*, and of a production scale that fits with the actors in the food system. Fifth, symbiotic links with other sectors, such as the transportation of goods from the harbour to neighbouring countries that ensures trucks are available to bring food from rural Tanzania to the city.

Frequently the infrastructure that has enabled the food system was not intended for that purpose, such as the road to the airport in Dar es Salaam that has become a major route for eggs and other agricultural produce on bicycles. Even the irrigation schemes where so much rice is grown in Mbarali District are not being used in the way that the state intended when they were first constructed and later privatised them. Small and medium scale *wakulima* - linked to similar scale processing, distribution and retailing - have shown a remarkable resilience and ability to respond to new opportunities and challenges.

The symbiotic food system could not be called 'local'. It transports food over quite long distances, but it is still an 'alternative' food system in the sense that it is largely detached from the global food circuits that have been widely criticized for their lack of sustainability and tendency to disconnect the eaters of food from producers and the production process. It is also a food system that has no large corporate actors involved and does not have the same anonymous character of corporate systems. This food system, like many short food supply chains, is "essentially based on *face-to-face* interaction as a mechanism for aligning producer – consumer networks" (Renting and Marsden, 2003: 399). The difference is that these interactions are not always directly between *wakulima* and eaters, rather they are face-to-face relations of familiarity and trust between interdependent actors in all nodes of the food system (Wegerif and Hebinck, 2016). Renting and Marsden argue that the more spatially disbursed supply chains can still be 'short' as "it is not the distance over which a product is transported that is critical, but the fact that it is embedded with value-laden information when it reaches the consumer" (Renting et al., 2003: 400). In this case the value-laden information is not communicated through printing and packaging or safeguarded by 'institutional conventions', rather it is carried through the direct contact between people in the food system and the values embedded in common cultural repertoires. The "link between quality attributes of the product and its *place of production*" (ibid: 401) is also a strong factor, at least in rice buying, with rice from Mbeya region widely regarded as the best.

The symbiotic food system does not involve the high level of concentration of ownership and power in a few hands that has come to characterize the corporate/empire model resulting in a greater and greater squeeze on the return to farmers (Greenberg, 2015; Van der Ploeg, 2008; Patel, 2007). The greatest point of concentration comes with the transport, due

to the *semi* being the most efficient per-ton means of transport and the capital cost of acquiring a *semi*. Even at that point in the food system, the facilitation of *dalalis* and the collaboration between traders, involves the shared use of these transport resources minimizing the power any one actor has over that part of the food system. One result of this is the large number of people who derive their livelihoods from economic activities in the system and the other is the reasonable return to *wakulima* as a proportion of the retail price of the foods.

The symbiotic food system clearly shows no regard for administrative boundaries, apart from the national borders. The particular requirements of each crop and the quantities needed to feed such a city make it unrealistic to try and meet the food needs through short food supply chains or within the administrative region of the city or even the neighbouring regions. There are no suitable growing areas for potatoes within hundreds of kilometres of Dar es Salaam that is situated on flat land on the hot and humid coast of the Indian Ocean. Maize can be grown, but these are not optimal conditions for it. While there is land around the city and a climate suitable for rice production, very little of that land is available. Much land is, of course, built on and there are other crops and food products, such as green vegetables, milk and eggs, that are better suited for production and distribution in and around Dar es Salaam (Wegerif, 2015a; Wegerif, 2014a). These have a long history of production in the city and play an important role in responding to some of the cities food, nutrition and livelihood needs (Lee-smith, 2010; Conway, 2006; Jacobi et al., 2000). The fact that certain food products lend themselves to very localized production does not mean such local production can effectively meet the whole or even the bulk of urban food needs. Just as importantly there is production potential elsewhere that can be utilised and it would be a disaster for *wakulima*, processors and traders, who currently supply food to the city, if they were to lose that opportunity.

Policy making needs to take a holistic approach to create a more enabling environment for the changing and spatially dispersed food system that can meet the food needs of cities in more equitable ways. This needs to go beyond a narrow project and urban food planning approach that only looks within the city boundaries to rather take into account the range of links where the food system contributes to other economic and social circuits and is also enabled by other circuits.

I suggest that the city region food system be looked at as the space defined by the relations that produce and bring food to the city, not as the food practices within a particular administrative area. These relations may be spatially proximate or over great distances. Local production and distribution circuits have certain environmental and social advantages, but analysis of the characteristics of any city region food system and exploration of options for it should not start with narrow assumptions about the superiority of the local over the more spatially dispersed. It must be recognized that the food system needs to meet the food needs in the city as well as livelihood needs in the rural hinterlands. With this as a starting point following the food becomes an important research methodology for

understanding existing food systems. More such research is needed to understand those systems that operate at scale, but are not corporate dominated. This could reveal further valuable lessons about alternatives to the globally dominant agro-industrial food system. Where agro-industrial systems are dominant, attention needs to be given to the possibility of developing the spaces for alternatives, including those that fill a middle-ground between the local and the global.

#### **9.4.2. Reflections on sustainability**

It is widely agreed that any list of key elements of sustainability would at least include: environmental sustainability; economic sustainability; and community sustainability (International Institute for Sustainable Development, 2013; World Bank Group. DFPweb, 2013; Brundtland, 1987). Below I reflect briefly on how the symbiotic food system contributes to these elements of sustainability.

##### **Environmental sustainability**

In a world in which rising carbon levels in the atmosphere are driving global climate change with increasingly visible impacts (IPCC, 2014), having a food system which has as low as possible greenhouse gas emissions is extremely important (De Schutter, 2014).

Having retail outlets within easy walking distance of people's homes, as with the *dukas* and people's markets described in this thesis, saves on carbon emissions related to eaters getting transport to shops, as is often needed with supermarkets. It also avoids road congestion and reduces the needs for more road expansion. The delivery by bicycle or on foot to the door or to the *duka* that people then walk to, as with eggs and green vegetables, is also a zero or near zero emissions part of the symbiotic food system that should be encouraged.

The on foot and on bicycle based distribution in different parts of the system are near zero carbon emission forms of transport. There is also a need for motorised transport, especially over the longer distances that heavy grains are brought. Comparing the actual carbon emissions from the various modes of transport would be a very involved technical task that is beyond this study. The positives I can see are the shared use of vehicles minimising trucks running without a load and the reuse of vehicles from other parts of the world which means less manufacturing of new vehicles. The potential negatives are the use of old vehicles that may have higher carbon emissions and the large number of small vehicles, such as motorbikes and power tillers with trailers, that may when combined cause more emissions to move the same quantity of goods as fewer larger vehicles. For example, more use of rail transport than the *semis* may be good from an environment (not to mention road safety) perspective. The challenge will be to find emission friendly means of transport that support rather than undermining the inclusive and multi-actor nature of the symbiotic food system.

The impacts of climate change are being clearly felt by *wakulima* across Tanzania. There is no doubt amongst *wakulima* that weather patterns are changing and it is impacting on their production. This is not only threatening production and livelihoods overall but also driving

greater inequality and different forms of differentiation. In Zombo the production potential and value of land in the hills has dropped substantially due to the unreliable rainfall, while the land in the river valleys continues to be productive and now more valuable, especially if *wakulima* can also afford a pump to irrigate from the river. Those left with land in the hills are becoming relatively worse off compared to their counterparts with land in the valleys. In Ubaruku the productive value of the irrigation land in the Chinese built irrigation scheme is increasing relative to the land outside the scheme that relies on traditional irrigation systems that are less able to cope with extended periods of low rainfall and heavy rains when they do come. People with more capital to put in place better irrigation or buy into land with better irrigation, such as in the estate, become increasingly better positioned compared to those who cannot. Adaptation interventions are needed to help people cope with these changes. These interventions will need to be tailored to each specific situation, but should take into account how the changing climate and the interventions done in response can contribute to inequalities, or if done well ensure that the more vulnerable are included and benefit.

The very limited use of packaging and in many cases the reuse of packaging in the symbiotic food system is a major saving when compared to typical supermarket and fast food outlets such as Kentucky. Whereas the eggs sold at the *duka* are packed, transported and sold from reused trays, the supermarket eggs are sold in plastic packaging that is imported from Kenya. The chips and eggs sold at the road side chip sellers of the symbiotic food system are mostly eaten on reused plates. In stark contrast, the corporate fast food outlet of KFC serves everything in disposable packaging that has been imported from South Africa to be used once and end up, at best, in a land fill in Dar es Salaam. The green vegetables that Lingo sells from a woven reed basket on the back of his bicycle are handed straight to customers. Rice and Maize are sold by weight from large sacks that are also reused multiple times. There are within the symbiotic food system many ways that packaging materials are minimised. The one widespread problem in this regard is the ubiquitous use of plastic bags that are handed out with many items. Urgent action is needed in Tanzania, as has been taken in other countries such as Rwanda, to eliminate the unnecessary and wide use of plastic bags (Werft, 2015).

Energy consumption and with that carbon emissions by the Supermarkets and KFC are high with their bright lights, air-conditioners running all day and freezers that are never switched off. Mangi's Duka, on the other hand, stands under a shady tree and is open to catch any passing breeze. There is no air-conditioning and no refrigeration in the People's markets. The symbiotic food system involves less freezing and refrigerating of things as it rather relies on quick delivery, such as with meat that is kept fresh, despite no refrigeration, due to the speed of delivery and distribution after slaughter.

Many of the *wakulima* are using methods that are ideal for sustainable production, such as intercropping and use of natural manure and compost with little or no chemical fertilisers. Even when not naming it as such, these are agro-ecological practices. My findings in this

regard are reflected in statistics that show that: only 9% of planted areas in Tanzania are planted with insecticide; only 1% of planted areas have used fungicide; only 12% of maize growing *wakulima* use inorganic fertilisers; and less than 10% of rice growers use inorganic fertiliser (The World Bank, 2012; National Bureau of Statistics, 2012a). While the low use of chemical inputs is decried by many as a constraint to growth (The World Bank, 2012), there is a major positive in it and an opportunity from a sustainability perspective. The *wakulima* are, for now, feeding the city with very few external inputs. De Schutter, when the UN Special Rapporteur for the Right to Food, has drawn on a wide range of research by others and his own work to clearly identified the value of “small-scale farmers” and agro-ecology, which is easier to implement on small sized farm, as essential for socially and environmentally sustainable food production (De Schutter, 2014; De Schutter, 2010).

A serious concern is soil degradation. *Wakulima* spoken to were very conscious of the loss of soil fertility, many spoke about how they had to use more manure or fertiliser than in the past and did not get the same crops, some had moved villages and fields in order to find better land due to this problem. They know they may have to move again, if the soil is not protected, but they are not sure what to do about it. Use of organic fertiliser is very low and is an example of an area for potential education and improvement (National Bureau of Statistics, 2012a). The farming practices and scale of the *wakulima* that are part of the symbiotic food system are a good place to start from as they are generally less harmful than the capital-intensive agro-industrial farming practices and with greater support and training these can be further improved for better environmental outcomes (IFAD, 2013).

“With their immense collective experience and intimate knowledge of local conditions, smallholders hold many of the practical solutions that can help place agriculture on a more sustainable and equitable footing” (ibid: 7).

The *wakulima* I spoke to were receiving no direct assistance or advice with farming. They were, however, engaged in their own learning, experimenting with different seeds and practices. Most are willing and even keen to learn more and make improvements.

### **Economy**

The most compelling aspect of the economic sustainability of the symbiotic food system supplying Dar es Salaam is the diversity and flexibility. Mangi tried different egg suppliers, different maize suppliers and got rice from a market where there are at least 30 different rice traders. If one supplier fails, others can fill the gap ensuring a strong level of system sustainability.

The keen pricing and even price reductions at times in the people’s markets and the *dukas* shows a competitive and active market for the majority of the distribution systems. Prices in the supermarkets, however, rose steadily with increases beyond the inflation rates.

Whether producing eggs, maize, rice, potatoes, green vegetables or raw milk *wakulima* are able to get cash from traders, normally at their home or fields. Some *wakulima*, such as those

taking their potatoes to Isyonje and maize to Kibaigwa, chose to take their own produce to trading places where they normally got cash payments. The exceptions to this that I have touched on in this thesis are the suppliers to supermarkets and to Tanga Fresh who have to wait for payments. To be able to sell one's harvest at the 'farm gate' for cash is a big advantage for *wakulima*, saving them time, the expense of transporting their goods to markets and the costs and inconvenience of having to find financing to cover any gap between supply and payment. Other advantages include being able to stay at home to do tasks such as caring for the family or carrying out other business activities, this being a particular benefit for women.

A large number of individual and small operators are securing reasonable incomes in different parts of the symbiotic food system from production to transport and retailing, and most are earning well above the minimum wages they might earn as employed workers in similar sectors. The high level of economic participation, with the related levels of equity, in the sector makes an important contribution to poverty reduction and social stability in a country where poverty levels are high.

The competitiveness of the symbiotic food system, even from a narrow financial perspective, gives me confidence that it has a very high level of resilience and will continue, provided there is no concerted policy attack on it. There is also great potential for this food system to flourish further, if there was a conscious effort to create a more enabling environment for it.

To sustain this, policies and development interventions should not encourage or enable concentration of resources and power in the hands of few actors and should rather actively encourage a multitude of more equitable actors. This includes the need to avoiding horizontal and vertical integration and concentrations of power within systems of food production, distribution, retailing and processing.

### **Community**

The symbiotic food system relies on and builds relationships and community. The transactions depend on social relations and people knowing each other. The glue holding it together is social relations, not contracts and documents or branding. As mentioned in the conclusion to Chapter Five, the trading places create spaces for social interaction and information sharing. The value of simply having a place where people meet others from their street, as happens at the *duka*, cannot be overestimated. There are a range of forms of group and community mutual assistance initiatives within the symbiotic food system, from joining together, contributing and participating in the social functions of weddings and funerals to the medical and education assistance that happens between fellow traders and shopkeepers and within groups such as the cargo-porters in Kibaigwa Market. All of these contributions to community bonding and wellbeing are contributions to sustainability of the food system and the communities where it operates.

### 9.4.3. Supermarket model as an option

Some policy makers and academics assume that the future of food retailing is with supermarkets and therefore they advocate for farmers and food processors to adapt to the requirements of the supermarkets (Reardon et al., 2003; Weatherspoon and Reardon, 2003). Far from facilitating farmer and processor adaptation to the requirements of the supermarkets, every effort should be made to support the existing symbiotic food system so that it can resist the expansion of supermarkets and continue to provide better options than supermarkets can for the majority of eaters and *wakulima*.

The corporate control of supermarkets prioritizes returns to investors and often debt servicing, creating a downward pressure on prices to farmers and upward pressure on costs to consumers (Van der Ploeg, 2010). This squeeze from supermarkets has been documented in other parts of Africa showing how it results in lower prices to producers and even the displacing of local farmers and smaller retailers leaving less opportunities for smaller and new entrants into the agri-food sector (Greenberg, 2015; Heijden and Vink, 2013; Greenberg, 2010; Abrahams, 2009; Kenny and Mather, 2008; Tschirley, 2007). *Wakulima* in Tanzania are protected from the worst impacts of supermarkets by the existence of the currently dominant symbiotic food system meaning they do not need to rely on selling to supermarkets. The eaters in Dar es Salaam are also protected as they have more accessible food available within the symbiotic food system. The situation of supermarkets in Dar es Salaam, such as the example of Shoppers, illustrates how added costs for packaging, advertising and the creation of a “Western-style shopping” experience (Lonely Planet, 2012) are paid for partly by richer consumers, who are willing and able to pay higher prices, and are partly externalized as impacts on the environment and public services such as roads. The big risk is a future where, without other viable options, producers are pushed to sell on credit and accept lower prices, thus contributing more to cover the costs and profits of supermarkets while eaters who need the food will be forced to shop at supermarkets and pay for transport and the higher prices.

Just as Abrahams found in Lusaka (Abrahams, 2009), the much talked of supermarket revolution is not materializing in Dar es Salaam. Shoppers Supermarkets are expanding, but slowly. The South African supermarket group Shoprite has been, at least in terms of basic foods eaten by the majority of Dar es Salaam residents, even less competitive than Shoppers. Shoprite clearly struggled in the Tanzanian market, closing one of their stores in 2008 and pulling out completely in 2014, selling the operations in their three remaining stores in Tanzania to Nakumat. The Uchumi supermarket group from Kenya pulled out of Tanzania in 2015 saying they had been losing money for five years (Lazaro, 2015; Ngugi, 2015). This challenges assumptions about the speed and inevitability of supermarket “progress” exemplified by statements such as Reardon’s “Development agencies must understand that ‘product markets’ will mean ‘supermarkets’” (Reardon et al., 2003: 1146).

There are studies that have found farmers benefitting from selling to supermarkets, such as the work of Neven et al in Kenya, but they also found that it was the more educated “middle class farmers” with more existing assets that were able to benefit from the link to supermarkets (Neven et al., 2009). They also made no analysis in the paper of the impact of food going to supermarkets for the majority of eaters. Some of the same authors were, however, involved in a study looking at impacts on consumers and although they argued more poorer eaters were beginning to turn to supermarkets in Kenya for processed foods, they found “[b]y contrast, the poor tend to buy very little of their fresh produce in supermarkets, as kiosks and open-air markets are cheaper and more convenient and the poor lack refrigerators to keep the perishables” (Neven et al., 2006: 119).

It is clear from my study in Tanzania that the symbiotic food system is a more resilient and diverse system of food provisioning that gives farmers and eaters a range of options, thus mediating the negative impacts of supermarkets and challenging the power of the agro-food industry (Arce, 2009; Patel, 2007).

#### **9.4.4. Women and the symbiotic food system**

There is a ubiquitous social and economic marginalization of women within the food and agricultural sector internationally and in Tanzania (Tandon and Wegerif, 2013; World Bank, 2012; Mbilinyi, 2012; FAO, 2011a). The control over and exploitation of women’s labour was a central feature of both peasant and plantation agriculture in Tanzania and this was only partially addressed through various programmes that targeted women during the 1980s (Mbilinyi, 1994). This gender discrimination is itself a continued human rights abuse that leads to other violations of women’s rights and undermines the potential for equitable and sustainable progress including ensuring the right to food for all (FAO, 2011a). Women in agriculture in Tanzania have not been passive victims of patriarchy and discrimination, but have led struggles of various kinds to challenge sexist practices (Mbilinyi, 1994).

Gender issues and women’s rights need specific attention in order for discrimination to be addressed, while at the same time it is important not to separate women’s struggles from the wider struggles of their communities, as Mbilinyi and Sechambo pointed out “[w]omen are not separate from the societies in which they live and have taken the lead in defending communal land/resource rights” (Mbilinyi and Sechambo, 2009: 101). If gendered power and class relations are not adequately understood and addressed, what I am arguing in this thesis could well fall into the category of what has been described as “calling for a ‘return’ to patriarchal agriculture systems” (Mbilinyi, 2012).

Tsikata and Amanor-Wilks, writing in and editing *Feminist Africa 12*, challenge “readers to extend this research towards gaining a fuller measure of the resource tenure and labour relations which are responsible for gender inequalities in livelihood trajectories in sub-Saharan Africa. Only then will we be in a position to pursue the transformation of unequal and unjust socio-economic relations and systems that currently undermine women’s livelihoods prospects in so much of Africa” (Tsikata and Amanor-Wilks, 2009: 9). My

research has not done enough to unpack these gendered relations involved in the food system feeding Dar es Salaam. All I can do here is to point to a few issues that arise and appeal to others to do more on this in the future, as I will try to do myself. Certainly, policy makers and development planners must take into account gendered impacts of interventions and I hope the few points below can assist them in doing so.

Women in Dar es Salaam and across Tanzania still perform the primary role in household reproduction, as I have found in my research from the eaters through to the *wakulima*. Women eaters are doing almost all the cooking and facing particular challenges in caring for and feeding their families from the stress Magdalene faces as a young single woman trying to care for her child to the balancing of the limited budget that Mama Lina does to try and ensure her children and grandchildren get enough to eat throughout the month. For women running and depending on their own business enterprises they face having to balance the demands on their time and money between the business and child care including ensuring access to education and health care. Women like Klara had to stop urban farming to care for her husband when he was sick. Mariam, for example, benefits from the city's functioning and affordable public transport system when she goes by *daladala* to the area where she sells eggs, but she almost went out of business due to her son's need for medical care that took up her time and money. Ensuring access to public health and education services, along with financial services such as credit and insurance to meet household as well as business needs, could assist women to participate more in the food system and enjoy greater security and benefits from it. Work is needed to also encourage the social change towards a greater sharing between women and men of the responsibilities for reproduction, including child care.

Women in Dar es Salaam responded to the financial crisis of the 1920s and the again the 1980s by getting more involved in 'informal' economic activities. This in part added a new burden, but it was far preferable to the low income from waged employment, shifted power relations and gave women new levels of autonomy (Brennan and Burton, 2007; Tripp, 1989). In one study of income differentials "Luce Cloutier found that most of the women she interviewed were making more money than their husbands, while nearly two-thirds of them shouldered 'all responsibilities for the maintenance of the family'" (Brennan and Burton, 2007: 63).

Many of the retail outlets mentioned are male dominated—from the supermarket owners and managers to Mangi's Duka and the chip seller. This is the norm across Dar es Salaam; it is rare to see a woman running a *duka* (although they do run clothes and other types of stalls). Women, in the form of *mamantilie* are cooking *maandazi*, chips, rice, beans, fish and cassava, but with little to no infrastructure in small spaces they can find on the sides of roads and near schools, etc. Hadija is finding a space selling eggs from her home and women are employed in the supermarkets as tellers, cleaners and shelf packers.

Women are also finding more prominent spaces within the food system, for example, the Enjo sisters and other women in the *sembe* production and distribution business. There are large numbers of women involved in urban and peri-urban agriculture, such as Mama Mchicha. Mama Hamisi is running her wholesale egg operation. Mama Martha plays a leading role along with her husband in running a busy wholesale shop. A lot of women traders are found in local rice trading in Ubaruku and in maize trading at Kibaigwa. Some of these women traders are working to greater or lesser degrees with their husbands, but many are single women and often several women working together in one business. Discussing the history and reasons why they started their businesses, a number of the women traders explained that they started after splitting up with their husbands or partners, in other cases they were widowed, and then realised they needed to look after themselves and their children.

The bicycle delivery operations are completely male run. They do, however, play a key role in the viability of the small-scale peri-urban egg farming in which many women are involved. Understanding why women are not involved in particular activities would be a worthwhile area of further study. It appears that a range of factors from cultural, including the roles women are expected to play in the home, to technical play a role. If we take bicycle-based deliveries, for example, I could speculate that there are cultural obstacles, yet women do ride bicycles in Dar es Salaam. It could be that women are often primary caregivers for children, so need to stay near to their homes or be able to take their children with them. Mariam, for example, sometimes brings her child on the bus when selling eggs door-to-door. On other hand, it might simply be that the sturdy Phoenix bicycle favoured for egg and other deliveries has a large frame that is too big for many women. In practice it is probably a combination of these factors that shapes women's participation.

Parts of the symbiotic food system that feeds Dar es Salaam supports women's involvement by enabling them to work from home and to control their time when running their own enterprises (Tripp, 1989). Women *mchicha* growers and egg *wakulima* who produce at their homes and sell directly to cyclists or other traders not only have a financial advantage, but are able to be carry on with their household responsibilities. Hadija also sells from home, and while Mariam travels to town most days she can choose not to sometimes and as she said, "I like this business because I am home with my baby by 10 or 11 in the morning". Women in the market place have the flexibility and support network of fellow traders that enables them to bring their children to work when needed and to take time to deal with other household matters during the day.

Women have over many years found spaces in the food system that work for them (Mbilyi, 1994) and they continue to do so, in particular in trading as we can see in the maize and *sembe* trade. The advantage of the *sembe* operation is that milling and distribution happens in Dar es Salaam, thus not necessitating travel which appears to be an obstacle preventing many women from getting into some parts of the food system. Women are found to be active in the local rice trading, but not in the long-distance rice trade, thus many

women traders are found bringing rice paddy to the mills in Ubaruku, but almost all the traders from Dar es Salaam are men. There are women traders from Dar es Salaam who come to Kibaigwa and it is not clear why this is happening more than with rice traders going to Ubaruku. Ubaruku is quite a bit further away, twice the distance, but can that be making the difference, given that even at Kibaigwa the traders have to be away for days and even weeks at a time. Some of the women traders in Kibaigwa come with children who are left in the care of someone else at guest houses. Others left their children behind. No male trader was ever found to have travelled with a child.

The issue of women's rights to land are complex and I have not adequately explored them in this research. I faced a methodological weakness of being a man doing the research on my own, which may have limited my ability to talk to women *wakulima*, especially wives of husbands who were present. Certainly, when meeting *wakulima* it was a man in each family that assumed greater control over interaction with me as a researcher and also claimed control over the land, the production on the land and the produce from it. It was men in families that showed me around the farms, often while their wives were looking after children and doing tasks such as cooking. Yet women were in fields working alongside men. I met single women *wakulima* who were running their own farming operations on land they saw as belonging to them. I did also talk to a few women *wakulima* who were married, but leading on doing their own farming, in these cases the women's farming was separate from her husband's farming and other business activities. It was possible for women to acquire and inherit land in the villages where I did research, but not necessarily equally and when in marriage or marriage like relationships men tended to assume control. In extreme cases this control extended to selling land, including the wife's land, to finance drinking and other habits. I did not explore in depth the gendered nature of land governance, but the biggest constraint to gender equity in land rights appeared to be the nature of the relationships within the families and the roles these determined for men and women.

The previous paragraph referred to the rural context. There was quite a different dynamic with the urban farming where women, including married women that I met, play a leading role.

Land rental is providing an opportunity for women *wakulima* to be running independent agricultural production. In Ubaruku there are large numbers of women *wakulima* growing rice on the irrigated estate land. While the year by year rental arrangement is not ideal it is still creating an opportunity, perhaps because it operates outside the local village leadership structures and relations. One outcome of this is that it is common to see women on motorbikes in Ubaruku, which is not common in other parts of Tanzania, and when spoken to I found that these women were *wakulima* farming rice and in some cases also trading rice (Photograph 27).



**Photograph 27 - Woman *wakulima* on her motorbike outside a rice mill in Ubaruku. She grows rice on rented irrigation land.**

To increase the participation and ownership by women in the food system it would make sense to: 1) reinforce the areas where women are already involved; 2) address obstacles to women's ownership where they are under-represented, including in land rights, business and trading rights and decision making in parts of the food system such as in markets where women are under represented in leadership structures; 3) take into account and work with the pathways to getting started as described in sub-section 9.3.1., taking into account that the networks that enable people to get into a particular business, may also act to exclude others; 4) improve availability of essential services such as health, education and child care in order to lighten the burden of reproduction that women are still disproportionately responsible for; 5) Look at technologies and training that could make participation easier for women. Examples include looking at the availability of bicycles better suited for women's use, improving security for women shopkeepers and traders, and ensuring women have access to driver training; and 6) support interventions, especially by women's organisations, to shift gendered attitudes, roles and power relations in order that women and men have more equitable shares of responsibilities and decision making power.

#### **9.4.5. Land and property**

From the eaters to the producers, land rights or the lack of them are a major issue. Insecure tenure in urban Dar es Salaam impacted a number of the eaters shaping their food choices and other aspects of their lives. I had not looked for eaters with tenure security issues, but nevertheless two people I was researching, Magdalene and Tabu, were evicted during the course of the field research. Along the way both lost cooking equipment forcing them to rely

more heavily on street food vendors and the assistance of others. Insecure and crowded living conditions also reduced the food acquisition options for other research participants.

Secure land and property rights would be good for many of the actors in the symbiotic food system, but they are not the panacea on their own. I talked to casual labourers loading maize and rice sacks who have land, but rent it out to someone else. I also spoke to successful *wakulima* who have no land of their own and produce on land they rent on a year by year basis from someone else. The farmers and traders I have spent time with have not succeeded simply due to having secure land titles (they don't) or access to a bit of capital, as De Soto and his followers might have us believe (De Soto, 2000). More important have been family and friendship networks through which they have accessed information and mutual support along with the low barriers to entry into different enterprises.

There was a large amount of land rental going on in all sites visited. There is widespread rental of irrigation land around Ubaruku on the large estate and the land outside that. This appears to have some positive outcomes in the way it enables people without their own land to enter into or expand production and to enable women's access to land, as mentioned in the sub-section on gender above. Jayne et al, drawing on other studies, have noted that "[l]and rental markets generally improve both efficiency and equity by transferring land from less productive users with relatively large landholdings to more efficient and land-constrained farmers" (Jayne et al., 2014: 11). There are problems with the system as well, however, with the season by season rental arrangements giving no guarantee of getting the same or any land the following year and the rent is an expense that reduces the return to *wakulima*. It is hardly ideal for any future planning and investment in the land. In Kiteto large land rentals are part of the cause of tensions that have spilt over into conflicts. Land rental is taking place in all the villages, with *wakulima* from other areas renting in Kitaita and *wakulima* in Kitaita also renting elsewhere including in Kiteto. In Zombo there is also extensive land rental, but mostly between people in the village, with almost all farmers spoken to renting some land.

The most remarkable shift underway is that the last village land in the production areas visited has been allocated. The villages no longer have land they can allocate for new land owners or the expansion of farms by existing land owners and this change has happened in the last ten years, with serious implications for land access and accumulation in these areas in the future. So far this has not led to a full commoditisation of land as indicated by the land prices and shaped by the extent to which land relations and transactions are still governed within community norms. The fact that the land in question is also not formally titled at this point may contribute to the way land, even when allocated to individuals, is governed.

Land reform and land governance initiatives should focus on giving *wakulima* secure rights to land within the range of 2 to 15 hectares, as this is the scale of farming that supplies much of food to Dar es Salaam and can create a reasonable livelihood for *wakulima*. This fits well,

from a narrow economic and farm size perspective, with Mellor and Malik's 'small commercial farmers', the growth of which they have shown to have the best impact on poverty reduction. This is due largely to their positive impact on the non-farm rural sector, which includes *wakulima* with smaller land holdings (Mellor and Malik, 2017). Securing those with less land is also important as it is essential for their livelihoods, but ideally they should be assisted to expand their land holding. Allowing allocation of larger amounts of arable land, in particular above the 30.35 hectare (used by Mellor and Malik to define "Large commercial farmer and feudal landholders"), to any one farmer does not make sense for equity, production, or poverty reduction reasons and will likely contribute to conflicts, such as in Kiteto. As Mellor and Malik concluded: "Large-scale commercial farms show little impact of agricultural growth on poverty reduction" (ibid: 1).

In this context the pressure on land from large land deals is a real threat (Land Matrix, 2016; GRAIN, 2016; Nolte et al., 2016; Sulle and Nelson, 2013; Anseeuw et al., 2012; Sulle and Nelson, 2009). There is simply no land available in these areas that are well suited to supplying the food Dar es Salaam needs. The model of large-scale farms that is being promoted with land grabs is also the least effective for reducing poverty (Mellor and Malik, 2017). In Ubaruku the allocation of the previously state owned irrigation land to a private company has bizarrely turned that company into a landlord that rents most of the land to *wakulima* who do the actual production, but as tenants with almost no rights, rather than as owners working their own land. In Kiteto, although I was not looking at the issue specifically, I came across the land conflicts in the area that had contributed to a large drop in production and maize supplies through the Kibaigwa Market in 2015. The conflict manifested as being between farmers and pastoralists, but also involves land grabbing by Tanzanian elites and related rental of land to people from outside the area. *Wakulima* from other areas who rented in Kiteto are also facing land pressures from a lack of access to fertile land for production where they are. An interesting finding is that many of the *wakulima* involved in renting land in Kiteto are from other rural areas, rather than from urban areas, as is more often spoken about.

Given the findings from this research there is a need for more research and theoretical and policy work on the issue of land rentals, in urban and rural contexts. This is a rather neglected area in land governance debates, as illustrated by, among other examples, the almost complete absence of attention to rentals in the Voluntary Guidelines on the Responsible Governance of Tenure of land, fisheries and forests in the context of national food security that were adopted under the World Committee on Food Security in 2012 (FAO, 2012b). The situation of women's land rights, as discussed in the previous section on gender, needs more study linked to the nature of gender relations beyond land. There is also a need for more empirical research and related theoretical work on the impact when all village and communal land has already been allocated, including exploration of how community norms still affect land governance and how land certification impacts positively or negatively. A central question to look at would be who, under these changed

circumstance, is gaining control of the land that is there - through allocation, sale or rental – and their class and gender and the implications of this for greater equity or greater accumulation.

#### **9.4.6. City planning for sustainable food supplies**

The urban and peri-urban food production and the distribution and retailing around the city, described in this thesis, have emerged largely organically: people with larger plots on the city's periphery use their space to go into chicken production; cyclists use the better road built to service the airport as a route for egg deliveries; trees planted along this road provide shade for bicycle-repair stalls; shopkeepers and chip sellers find small spaces on road sides to set up their businesses; the maize carrying trucks have congregated around Manzese as it is accessible to the main road into Dar es Salaam. These and other considerations could be factored into future city plans to enable the continuation and expansion of the symbiotic food system. At minimum one hopes care would be taken not to have urban developments that undermine existing patterns of food provisioning.

Green vegetable, egg, dairy and other agricultural outputs produced in Dar es Salaam's mixed residential and urban agricultural zones are clearly making a contribution to the city's economy. They also provide green space, low-cost housing, and a more rural way of life that some people value within and close to the city (Jacobi et al., 2000). Ensuring that women and people who live in poverty have access to land in such areas would strengthen their opportunities in green vegetable and egg production as well as other urban agricultural activities (Lee-smith, 2010).

Dar es Salaam planners could take advantage of the largely flat terrain and existing community of cyclists to improve opportunities for other bicycle-based and environmentally friendly economic activities. Better designed cycle paths would increase safety and extend the effective range of bicycles, making the bicycle-based product-distribution more viable and expanding the number of peri-urban farmers benefitting from it. This is a valuable approach as the producers within bicycle range of markets are getting the best return for their crops.

Remarkably, given the importance of maize to the residents of Dar es Salaam, the main de-facto maize wholesale market is simply the sides of a road in Manzese with no market infrastructure. The area is well located as it is close to the main road that goes inland to all the major maize growing areas. There is now a concentration of maize milling operations and related industries, such as printers who prepare the *sembe* sacks in the area. It would be logical to build on the existing trade and related maize activities and to improve the basic infrastructure that supports these activities through among others: improving the space for trucks to park and to manoeuvre including accessing the area; sanitation facilities for drivers, traders and *dalalis* who work there; perhaps a weighbridge; and ensuring reliable three phase electricity supply to the mills.

The easy access on foot to *dukas* and to people's markets is an invaluable asset to the eaters and to the functioning of the city. The physical and regulatory space for the *dukas*, people's markets and the shopping areas around them need to be protected. New people's markets need to be planned for as the city grows so that as many residents as possible continue to be within walking distance of them.

Urban agriculture areas are sadly being lost to uncontrolled property development and planning that does not fully recognise the value of urban agriculture to food production and the urban environment. Planning and regulations need to confirm areas as available and allocated to particular producers for food production. Monitoring is not even an issue as the urban *wakulima* will monitor the situation if the land is allocated to them and if they are backed up by the authorities should there be encroachment. Protected green corridors expanded around the existing production in the river valleys would be one positive development that would also help reduce the loss of houses and even lives from flooding when there are heavy rains. Peri-urban planning regulation should prevent too much densification and gentrification in areas where the plots are being used for chicken, egg and dairy production.

There is a lot of room for improved planning and design of people's markets in Dar es Salaam from the market buildings to the transport routes that bring the supplies and customers to them (Wiskerke et al., 2015; Mbisso, 2011). In different parts of the world there is pressure on 'traditional markets' as well as a renewed interest in them as a source of good food and due to the social and economic value they bring, in some cases there is a marked revival of such markets (Boqueria, 2016; Starkman, 2015; Watson and Studdert, 2006). It would seem there is potential to continue to attract middle class shoppers, as well as the majority of eaters, to people's markets in Dar es Salaam if some of the market places can be made more attractive with improved design, construction and maintenance. This would be worth public investment given the important social, economic and food services these markets provide.

#### **9.4.7. Value chains**

Value chain development has become increasingly popular over the last years amongst development agencies as part of a particular dominant modernisation approach applied in work intended to improve the situation of small farmers. This despite Guyer and others in the book "Feeding African Cities", that she edited three decades ago, showing that "[f]ood distribution systems are not only market chains which ensure the conveyance of goods and the communication of price information" (Guyer, 1987: 06). Nevertheless, the value chain approach is argued by its proponents to be a market-driven approach that will enable farmers to benefit from globalisation. As Match Maker and Associates argue – clearly drawing on the work of Kaplinsky et al (Kaplinsky and Morris, 2001) -, when training people on the approach in Tanzania, "[the] growing integration of the global economy has provided the opportunity for substantial economic and income growth... The key question

to ask is how to take advantage of such globalisation trends, and even more, how to do so in the world where there is a disparity in terms of social and economic development” (Match Maker Associates, 2014). What is not being asked enough is whether the form of globalisation that is underway is in the best interests of the farmers. It is assumed that it is the best without clear evidence of this, or it is assumed that there is simply no other option so we must make the best we can of it.

The process of value chain mapping involves a deliberate simplification to “tell us at one glance how to get from one dot to the other” (Match Maker Associates, 2014). What is also simplified is the reasons for the value chain, which is posited as an alternative to “a series of spot-market transactions” and to “adversarial business relationships” (Match Maker Associates, 2014). Clearly drawing on Hobbs and Young (Hobbs and Young, 2000), Matchmaker Associates describe spot markets as involving “no long-term relationship or commitment among individual buyers and sellers and often price is the main determinant of the sale” (Match Maker Associates, 2014). One of the problems is that Hobbs and Young are basing their lessons on “an examination of the US grains industry” (Hobbs and Young, 2000) and the descriptions of spot-markets and the adversarial business relations bear little resemblance to the symbiotic food system that is actually operating in Tanzania with a wide range of relationships, commitments and factors other than price affecting transactions.

The problem with the value chain approach is that it starts from a number of false assumptions. It is assumed that farmers do not have access to markets already and therefore fails to look carefully at what farmers already do and why. It assumes that linking small farmers to the formal parts of the private sector, including supermarkets, large corporations and global markets will be good for them. It has a narrow analysis of market relations assuming them to be linear and defined by purely financial transactions, rather than as part of wider socio-cultural and institutional settings. Traders are assumed to be a problem and exploiting farmers, whereas the traders and *dalalis* are actually the glue that holds the food system together and give *wakulima* access to urban and other markets.

The negative attitude toward traders was well illustrated to me when I presented some of my preliminary research findings at a conference on food security in Berlin in 2016. After my presentation that, like this thesis, had shown the important role of traders in the food system, a number of people from various non-government organisations (NGOs) raised concerns and questions about the role of the traders. In a follow up discussion with one person who works with an NGO dealing with food security and assisting small-farmers in a few different countries in Africa, he insisted that traders unfairly exploited farmers. I argued that traders facilitated market access for *wakulima* and had to cover their costs and risks of doing this and I pushed him for any evidence or analysis to support his position. He replied “they [traders] are richer than the farmers, they are exploiting them”. By this measure the NGO colleague himself, and many others, are certainly exploiting the farmers. Why it should be bad if some food traders, many of whom in my experience start out as farmers, are richer than farmers is also a mystery to me. Of course, I have heard *wakulima* complain

that the prices they receive for their products are too low and some of them blame the traders for that, but for the seller to want higher prices should surprise no one. For the NGO worker or researcher to conclude from such complaints that the traders are responsible for low prices and are unfairly exploiting farmers does not qualify as analysis, even if the traders are often a bit richer than the farmers.

One of the most bizarre things in the development sector in Tanzania is frequent discussion about value chain development based on market principles and market development and stimulation with no reference to the existing and vibrant food markets, abattoirs, and other parts of the symbiotic food system. An example was the holding in 2010 of a workshop and the report from that entitled “Effective value chain in Tanzania: How to activate local markets” (ANSAF, 2010). This event organised by the Agriculture and Non-State Actors’ Forum (ANSAF) and supported by Swiss Development Corporation, ActionAid International and Oxfam Great Britain was typical of other events and discussions I have witnessed. The title and content of the report show no awareness of the existing and dynamic food system and how markets actually function, despite the claims that their approach is “operated under market principles using private sector business models” (ANSAF, 2010). The abiding image for me is of NGO workers and government officials, along with some company representatives, sitting in a hotel room discussing the perceived need to stimulate markets, while ignoring the fact that across the city meat, vegetable and other traders are busy selling. As the discussions got underway in the hotel, these traders had long returned from the bustling hives of economic and other activities that are found every night and early morning at the Ukonga-Mazizini abattoir and Ilala vegetable market, among many other existing vibrant markets around the city.

I am not, as mentioned in the conclusion to Chapter Eight, against all value chain interventions, some, under specific circumstances might add value for some *wakulima*. In their review of a wide range of value chain studies Seville et al concluded that there is a wide diversity of experiences with different levels of impact for different groups (Seville et al., 2011). Seville et al also note that the value chains tend to work better for the farmers with more assets and education and state “[i]t is important to recognize that formal markets, particularly global formal markets, are ultimately modest in size relative to domestic and regional staple markets. Therefore, formal value chains are not a silver bullet for pro-poor development” (Seville et al., 2011: 42). This finding, and my own research findings, confirms that there is a disproportionate amount of resources, programmes and energy going into value chain work for limited results.

#### **9.4.8. Social safety nets**

Just as I have noted that the food system cannot meet all the economic needs of the residents of Dar es Salaam, or indeed Tanzanians in general, so the food system also cannot meet all the physical and social needs of people. The symbiotic food system has a lot to offer and it

appears to meet the needs of people (eaters and producers) better than other food systems I know of, but it is not a panacea for development or a response to every need.

In this research, as well as seeing the positive contribution the food system makes to livelihoods, I have seen how medical conditions and costs of treatment had a major impact on food and nutrition for eaters in Dar es Salaam and for rural producers. The sick and aged are often finding themselves in appalling conditions as they are no longer able to engage in daily work for themselves or others and therefore not able to fend for themselves. Parents, most often mothers, looking after children or other sick relatives or friends are often diverting time and resources away from acquiring food and away from production or wage labour thus further reducing the income that they need.

Magdalene kept aside, as long as she could, TSh 20,000 (\$ 12.12) for emergencies, the ones she mentioned having in mind were medical. She wanted to be able to take her baby to the doctor if she was sick. The money remained untouched, while Magdalene went hungry. Indeed, on a number of occasions her daughter Pretty did get sick and was taken to the doctor, then Magdalene herself got sick and had to rely on friends for her own care. For Magdalene, the lack of a family network made her situation more difficult, the support she did get from friends was often limited and could never be relied on.

Tabu could not rely on her sister for financial support or for food and accommodation as the sister's husband did not want her in the house nor want his money supporting her. Facing discrimination, she would whisper to me when talking about anything that might indicate to a listener her HIV status. She was estranged from her family and evicted from her rented room due to being seen as bringing a threat of infection. Some concern was perhaps justified given that she also had TB, managing that risk was more than family members, themselves with limited resources, were willing to handle.

The reality is that while the family and friend networks provide invaluable support, avoiding some of the most vulnerable falling into extreme poverty requires a system of social protection. A minimum would be health care facilities available to all, basic income support for children in poverty, a form of sick/disability grant for those unable to work and pensions for the elderly. These together could prevent the youngest, the sickest and the oldest from suffering hunger and extreme deprivation.

## **9.5. New directions in research**

I have in this thesis identified a food system that empirically exists and have begun to explore the nature of that system, what enables and shapes it and how and why it exists. It appears that what I have found is not unique to Tanzania, and therefore, the findings, as well as further exploration of these phenomena, in particular symbiosis as an ordering principle, could be of value in a range of other settings. Work on urban food planning, alternative food networks and 'nested markets', as mentioned elsewhere in this thesis, has gained traction in the last few years, largely in Europe and North America, but also beyond.

These have some similarities with the symbiotic food system, but they have tended to focus on local—short supply chains, direct links with farmers and planning within local administrative boundaries—as well as niche and higher value markets (Hebinck et al., 2015; Van der Ploeg, 2015; Wiskerke and Viljoen, 2012; Maye and Kirwan, 2010; Renting et al., 2003). The findings of this thesis suggest that there would be value in giving more attention to non-corporate food systems that bring food from further afield and can meet the food needs of large numbers of people, including the less wealthy.

Despite a lack of literature on food systems specifically, it is clear that many elements of what I have described in Tanzania have long been in operation in other countries in Africa and continue to show resilience today (Sulemana, 2016; Karg et al., 2015; Manyelo et al., 2014; Abrahams, 2009; Flynn, 2005; Darkwah, 2002; Hart, 1973; Hill, 1963; Bohannan and Dalton, 1962). Similar markets to those described in this thesis can also be found in Asia (Van der Ploeg et al., 2016; Goldman et al., 1999). In Zimbabwe, even with the previously high level of formalization and corporate control of the economy, there is evidence of similar markets, perhaps symbiotic food systems, emerging post the fast track land reform in the country (Matondi and Chikulo, 2015; Chitanda, 2015; Mutopo, 2014).

Unfortunately, more attention and finance currently goes into research on corporate systems and non-government organisation and state ‘development’ projects. Too little goes into looking at what exists without these interventions. More research is needed to understand the food system in other contexts, especially in Africa and Asia, where small farmers and traders remain dominant in production and distribution. In carrying out such research, those involved would do well to consider some of the theoretical steps and their methodological implications that Hebinck et al. elaborated in “Rural Development and Construction of New Nested Markets” (Hebinck et al., 2015). These can be summarized as: 1) look at markets beyond the neo-classical frame of references to be open to explore the extent to which markets are places of social interaction and exchange and “embedded in historical and cultural repertoires” (ibid: 3); 2) put aside “a priori normative framing. The market is neither intrinsically good... nor intrinsically ‘evil’” (ibid: 4); 3) markets can be places of social struggle; 4) go beyond the ‘conventionalization thesis’ and the related normative assumptions about a particular modernisation trajectory of ‘development’ and change; and 5) go beyond the narrow exploration of alternative food systems that is often overly focused on the local and the ‘short food circuits’ and other assumptions about ‘alternatives’ to take a wider view of food circuits that are not corporate and global, nor necessarily local and short.

In addition to these considerations, the approach of starting with a cross-section of eaters of food is a useful entry point for the study of food systems, as it creates the opportunity to focus the research on the most important foods for the majority of people and it does not presuppose the sources of food or the actors involved. Such research will only touch on specific interventions in the food system to the extent those are valuable to the supply of food. When we see where food actually comes from, we may find elements of the food

system and actors about which there has been little awareness. This is of course the opposite starting point from many food/value-chain and food system studies that start with particular producers or crops and even specific projects.

Recognising that the symbiotic food system runs on many elements of CPR management gives us new areas of research to explore. It also gives us a body of work to draw on for ideas when seeking appropriate policy and programmatic interventions to enable the symbiotic food system. Links can be made with the emerging work on 'nested markets' that could benefit from the wider concept of the symbiotic food system. More empirical work to test the well-established theories of CPR in the context of markets and food systems could be of value to reinforce or question some of the ideas in this thesis.

Given the sweeping nature of this research across different foods, social groups and geographies, almost any part of the symbiotic food system could benefit from more research. Within this thesis, I have mentioned particular parts of the food system and topics that I have not been able to fully explore and there are others I have not mentioned which could benefit from further research. There are foods that have their own specific characteristics and would therefore be of interest to look at, for example fish and bananas. I did not look in-depth at street food vendors although they came up frequently as an important source of food and their involvement in food preparation will likely mean they have somewhat different characteristics from other food sellers. It would be of great interest to do further work on differentiation and class formation or the lack of it. The implications of all village land having been allocated and the increasing amount of land rental arrangements are under researched and under theorised in land related academic and policy work. I have not properly researched or done enough analysis of gender relations within the symbiotic food system. There is a whole area of work on the specifics of farming practices and related questions of ecological sustainability, including analysis of climate change links and protection of bio-diversity.

A particular challenge and question remains; what are the social forces which could advance the interests of the symbiotic food system and the actors within it? I have shown how the symbiotic food system has a social, environmental and economic resilience, but have not been able to analyse and address adequately the question of its political power, the power that could create an enabling environment for the system to flourish and further replicate itself. As has been noted in so much analysis of the peasantry, they may have the potential to be part of uprisings and even revolutionary action, but they tend to lack the political organisation to be able to advance systemic political change (Saul, 1974). In the early 1970s Shivji envisaged the struggle of largely urban workers joined with the "struggle of their fellow exploited class, the poor peasants" being the force that would "replace the very system of exploitation" (Shivji, 1976: 145). That, however, simply has not materialised. Perhaps new urban rural alliances of eaters, retailers, traders and *wakulima* could be formed and advance their common interests if there is a greater awareness among them of their

interdependence and the common system upon which they all depend. Herein are further interesting research initiatives.

## 9.6. Conclusion

Of particular interest is how a wide range of small-scale and interdependent actors produce the food and get it to urban eaters at a city feeding scale without large vertically or horizontally integrated corporate structures. From small-scale *wakulima*, through to urban retailers and in markets in-between, there is a high level of diverse collaboration between actors, many of whom are also competitors. The way this food system works is not well explained by existing theories applied to markets and food systems either from the neo-classical economics perspective or from the rural development and alternative food studies disciplines.

Based on empirical research in Tanzania that has looked at how the large city of Dar es Salaam is fed, I put forward here the concept of a symbiotic food system. This draws and builds on the understanding of the importance of social embeddedness, work on common pool resources management and the emerging thinking on nested markets, to provide a more satisfactory explanation of how and why the symbiotic food system is functioning in this context.

The functioning of the symbiotic food system is socially and institutionally embedded, but it is also subject to market forces of pricing and competitiveness. The symbiotic nature of the relations, including reciprocity and interdependence, supported by well-established and common internal and social norms, explains how this works. There are strong elements of common pool resource management within the symbiotic food system, which helps to show both the logic of the established social and internal norms and that the phenomena of such arrangements are not unique to this context. The symbiotic food system also shares some characteristics with nested markets, but not others and it has important additional characteristics.

City region food system analysis needs to follow the food and not administrative boundaries or assumptions about the value of local. Such analysis can be valuable in food policy and strategy development. It would be useful if more of those involved in such food research and policy work look beyond the narrow alternative food network thinking that is locked into favouring short supply chains and niche projects that meet the interests of middle and upper class eaters while ignoring the needs of the majority. It also important to look beyond narrow value chain thinking that is misguided in trying to link farmers to the corporate and globalised food system and is not delivering better outcomes for the majority, in particular the poorer, *wakulima* and eaters. There is a non-corporate middle ground between local and global food systems and this needs to be better understood and valued in research, policy making and planning.

The symbiotic food system has many positive environmental practices within it, such as reducing transport involved in food acquisition and making use of zero and low carbon transport, such as bicycles and public transport. The foundation of the symbiotic food system in small-scale *wakulima*, often using agro-ecological production practices, is good for low carbon emissions and for resilience and can be built on to improve environmental outcomes. There are concerns with the loss of soil fertility in many areas that need to be addressed with dissemination of improved soil conservation practices and the *wakulima* are well positioned to take up such practices if given the opportunity.

Women have found spaces for their own enterprises and advancement within the symbiotic food system, but many roles in the home and the food system remain highly gendered. Of particular concern is that women continue to carry a disproportionate responsibility for reproduction with limited state, community or family support. When women run their own operations, within the symbiotic food system, they are able to make some space to accommodate tasks like child care, but improved services are needed in areas such as health and education to reduce the burden on women. More can be done to enable women to advance in the areas where they have already made inroads. More must be done to overcome obstacles in the areas where women remain largely excluded; attitudes, roles, rights, power and technology can all be shifted to ensure a more gender equitable food system.

The value of this thesis is in showing that symbiotic food systems exist, with their own particular ordering principles, and that these can have value in many contexts for the actors within them, for achieving the right to food and doing so sustainably. Not least this is a food system that does deliver at scale and can therefore play a significant role in feeding the, increasingly urbanized, projected nine billion people by 2050. This challenges dominant modernisation paradigms, opens up new research agendas and has important implications for policy development and city planning. We need an informed development of policies that will value and enable the symbiotic relations at the heart of such food systems.

What I have found in this study gives me hope that more equitable and resilient alternatives to the unsustainable agro-industrial food system are not only possible, but actually exist already, albeit with room for enhancement.



## References

- Abrahams C. (2009) Transforming the region: Supermarkets and the local food economy. *African Affairs* 109: 115-134.
- Agri-Business Africa. (2015) *Meat traders want city council to implement modern abattoir project*. Available at: <http://www.agribusinessafrica.net/index.php/by-sector/dairy-livestock/2321-meat-traders-want-city-council-to-implement-modern-abattoir-project-2>.
- Agriculture in an Urbanizing Society. (2015) International conference on reconnecting agriculture and food chains to societal needs: Proceedings of the conference. Rome, Italy.
- Amanor KS and Chichava S. (2016) South-south cooperation, agribusiness, and African agricultural development: Brazil and China in Ghana and Mozambique. *World Development* 81: 13-23.
- Ambrose SH. (1998) Chronology of the Later Stone Age and food production in East Africa. *Journal of archaeological science* 25: 377-392.
- ANSAF. (2010) Effective Value Chain in Tanzania: How to activate local markets. Dar es Salaam, Tanzania: Agriculture Non-State Actors' Forum (ANSAF).
- Anseeuw W, Wily LA, Cotula L, et al. (2012) Land Rights and the Rush for Land: Findings from the Global Commercial Pressures on Land Research Project. Rome, Italy: ILC.
- Arce A. (2009) Sources and Expressions of Power in Global Food Coordination and Rural Sites : Domination , Counter- domination and Alternatives. *Alternatives* 16: 2-20.
- Arce A and Long N. (2000) Reconfiguring modernity and development from an anthropological perspective. In: Arce A and Long N (eds) *Anthropology, Development and Modernities*. London and New York: Routledge.
- Bahari Bounty Group. (2015) *Poultry: Kuku Poa*. Bahari Bounty Group. Available at: <http://www.baharibounty.com/poultry.html>.
- Baker L and De Zeeuw H. (2015) Urban food policies and programmes: an overview. In: de Zeeuw H and Drechsel P (eds) *Cities and Agriculture: Developing resilient urban food systems*. London and New York: Earthscan from Routledge, 1-25.
- Bakhresa Group Ltd. (2013) *Azam Worldwide*. Available at: [www.bakhresa.com/about-us/azam-worldwide](http://www.bakhresa.com/about-us/azam-worldwide).
- Bakresha Group Ltd. (2013) *Azam - Dairy Products*. Available at: <http://bakhresa.com/services/food-beverages/bakhresa-food-products-ltd/azam-dairy/>.
- Barman RJ. (1977) The Brazilian Peasantry Reexamined: The Implications of the Quebra-Quilo Revolt, 1874-1875. *The Hispanic American Historical Review* 57: 401-424.
- BASIC. (2014) Who's got the power? Tackling imbalances in agricultural supply chains. Fair Trade.
- Battersby J, Marshak M and Mngqibisa N. (2016) Mapping the invisible: the Informal food economy of Cape Town, South Africa. In: Crush J (ed) *Urban food security series*. Cape Town: African food security urban network.

- Becker GS. (1976) *The economic approach to human behavior*, Chicago, USA: Chicago press.
- Bennet A. (2003) *The Village Milk System: Safe Low-cost Milk Pasteurisation for Small-scale Dairy Enterprises and Milk Producer Groups*. Available at: <http://www.sp-lab.net/fao/GHP2014/pages/02/reading0501/in-pouchnov03.pdf>.
- Benson J. (2012) *Study: Children who grow up on family farms and drink raw milk have fewer allergies, autoimmune disorders*. Available at: [http://www.naturalnews.com/035802\\_raw\\_milk\\_farms\\_allergies.html](http://www.naturalnews.com/035802_raw_milk_farms_allergies.html).
- Bernstein H. (1981) Notes on State and Peasantry: The Tanzanian Case. *Review of African Political Economy* 21: 44-62.
- Bernstein H. (2001) 'The Peasantry' in Global Capitalism: Who, Where and Why? *Socialist register*: 25-51.
- Bernstein H. (2009) V.I. Lenin and A.V. Chayanov: looking back, looking forward. *Journal of Peasant Studies* 36: 55-81.
- Bernstein H. (2010) *Class dynamics of agrarian change*: Kumarian Press.
- Bernstein H. (2013) Food sovereignty: A skeptical view. *Food sovereignty: a critical dialogue*. Yale University, New Haven: Program in Agrarian Studies, Yale University.
- Biggart NW and Beamish TD. (2003) The economic sociology of conventions: Habit, custom, practice, and routine in market order. *Annual Review of Sociology*: 443-464.
- Birch EL and Keating A. (2013) *Feeding cities: Food security in a rapidly urbanizing world: Conference Report*. University of Pennsylvania: Penn Institute for Urban Research.
- Bohannon P and Dalton G. (1962) *Markets in Africa*: Northwestern University Press.
- Boqueria. (2016) Available at: [www.boqueria.info](http://www.boqueria.info).
- Born B and Purcell M. (2006) Avoiding the local trap: scale and food systems in planning research. *Journal of planning education and research* 26: 195-2007.
- Borras Jr SM. (2009) Agrarian change and peasant studies: changes, continuities and challenges – an introduction. *Journal of Peasant Studies* 36: 5-31.
- Borras SM, Franco JC, Isakson SR, et al. (2015) The rise of flex crops and commodities: implications for research. *The Journal of peasant studies*.
- Branford S and Rocha J. (2002) *Cutting the wire*, London, UK: Latin America Bureau.
- Brasch S. (2014) *Raw Milk Vending Machines Take Over Europe*. Available at: <http://modernfarmer.com/2014/03/americans-envy-europes-raw-milk-vending-machines/>.
- Bräutigam D and Tang X. (2012) An overview of Chinese agricultural and rural engagement in Tanzania. *IFPRI Discussion Paper 01214*. Washington DC, USA: International Food Policy Research Institute.
- Brennan J and Burton A. (2007) The Emerging Metropolis: A history of Dar es Salaam, circa 1862-2000. In: Brennan J, Burton A and Lawi Y (eds) *Dar es Salaam: Histories from an Emerging African Metropolis*. Dar es Salaam, Tanzania: Mkuki Na Nyota, 13-75.
- Brennan J, Burton A and Lawi Y. (2007) *Dar es Salaam: Histories from an emerging African metropolis*, Dar es Salaam, Tanzania: Mkuki na Nyota.

- Brinkley C, Birch E and Keating A. (2013) Feeding cities: Charting a research and practice agenda toward food security. *Journal of Agriculture, Food Systems, and Community Development* 3: 81–87.
- Brundtland H. (1987) *Our Common Future: Report of the World Commission on Environment and Development*. New York, NY, USA.: United Nations.
- Bryceson DF. (1987) A century of food supply in Dar es Salaam: from sumptuous suppers for the Sultan to maize meal for a million. In: Guyer JI (ed) *Feeding African Cities: studies in regional social history*. Manchester, UK: Manchester University Press.
- Bryceson DF. (1993) *Liberalizing Tanzania's Food Trade*, London, Portsmouth (NH), Dar es Salaam: UNRISD in Association with James Currey, Heinemann and Mkuki na Nyota.
- Carpiano RM. (2009) Come take a walk with me: The “Go-Along” interview as a novel method for studying the implications of place for health and well-being. *Health & place* 15: 263-272.
- Centers for Disease Control and Prevention. (Undated) *Food Safety and Raw Milk*. Available at: <http://www.cdc.gov/foodsafety/rawmilk/raw-milk-index.html>.
- Chambers R. (1992) *Rural appraisal: rapid, relaxed and participatory*: Institute of Development Studies (UK).
- Chambers R. (1994) The origins and practice of participatory rural appraisal. *World Development* 22: 953-969.
- Charmaz K. (2012) The Power and Potential of Grounded Theory. *Medical Sociology online* 6.
- Charmaz K and Mitchell RG. (2001) Grounded theory in ethnography. *Handbook of ethnography*. London, UK: Sage, 160-174.
- Chayanov AV. (1986) *AV Chayanov on the theory of peasant economy*: Manchester University Press.
- Chitanda B. (2015) *A Sociological Analysis of Vegetable Markets In Dzivarasekwa 3, Harare. Sociology of Development and Change*. Wageningen, Netherlands: Wageningen University.
- City Mayors. *The world's fastest growing cities and urban areas from 2006 to 2020*. Available at: [http://www.citymayors.com/statistics/urban\\_growth1.html](http://www.citymayors.com/statistics/urban_growth1.html).
- Ciuri S. (2013) Nakumatt set to take over Shoprite stores in Tanzania. *Business Daily*. Available on line.
- Cohen E. (2003) *A Consumers' Republic: The politics of Mass Consumption in Postwar America*, New York, USA: Vintage Books, a Division of Random House.
- Compassion in World Farming. Available at: <http://www.ciwf.org.uk>.
- Conway K. (2006) Building the food secure city: incremental progress brings about change. *Growing better cities: Urban agriculture for sustainable development*. Online: IDRC.
- Cook I. (2004) Follow the Thing: Papaya. *Antipode* 36: 642-664.
- Cook I. (2006) Geographies of food: following. *Progress in Human Geography* 30: 655-666.

- Cooperrider DL and Srivastva S. (1987) Appreciative inquiry in organisational life. *Research in Organizational Change and Development* 1: 129-169.
- Coudouel A, Hentschel JS and Wodon QT. (1997) Poverty Measurement and Analysis. In: Klugman JA (ed) *A Sourcebook for Poverty Reduction Strategies*. Washington, D.C: The World Bank, 27-74.
- Crush J and Frayne B. (2011) Supermarket Expansion and the Informal Food Economy in Southern African Cities: Implications for Urban Food Security. *Journal of Southern African Studies*: 781-807.
- Darkwah AK. (2002) Trading goes global: Ghanaian market women in an era of globalization. *Asian Women* 15: 31-49.
- Davies G. (1994) *A history of money from ancient times to the present day*, Cardiff, UK: University of Wales Press.
- Davis M. (2006) *Planet of Slums*, London: Verso.
- De Schutter O. (2010) Report submitted by the Special Rapporteur on the right to food, Olivier De Schutter (Agroecology). *Promotion and protection of human rights: human rights questions, including alternative approaches for improving the effective enjoyment of human rights and fundamental freedoms*. Geneva: Human Rights Council, United Nations, A/HRC/16/49.
- De Schutter O. (2014) Final report: The transformative potential of the right to food. Geneva, Switzerland: United Nations, Human Rights Council.
- De Soto H. (2000) *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*, New York, NY, USA: Basic Books.
- De Zeeuw H and Dubbeling M. (2009) Cities, food and agriculture: challenges and the way forward. *RUAF Foundation, Leusden*.
- DeLanda M. (2006) *A new philosophy of society: Assemblage theory and social complexity*, London, UK and New York, USA: A&C Black.
- Denzin NK. (1998) Interpretive Ethnography. 196-199.
- Denzin NK. (2001) The reflexive interview and a performative social science. *Qualitative research* 1: 23-46.
- Denzin NK and Lincoln YS. (2005) *The Discipline and Practice of Qualitative Research*. North: 1-32.
- Derkzen PHM and Morgan K. (2012) Food and the city: the challenge of urban food governance. In: Viljoen A and Wiskerke JSC (eds) *Sustainable food planning: evolving theory and practice*. Wageningen, Netherlands: Wageningen Academic Publishers, 61-66.
- Dilley R. (1992) Contesting Markets: A General Introduction to Market Ideology, Imagery and Discourse. In: Dilley R (ed) *Contesting markets: analyses of ideology, discourse and practice*. Edinburgh: Edinburgh University Press, 1-34 (Introduction).
- Division of Environment. (2006) National Adaptation Programme of Action (NAPA) for Tanzania. In: Division of Environment (ed). Dar es Salaam, Tanzania: Government of Tanzania,.

- Donovan J, Franzel S, Cunha M, et al. (2015) Guides for value chain development: a comparative review. *Journal of Agribusiness in Developing and Emerging Economies* 5: 2-23.
- Dugdill BT. (2000) *Poster Paper: The Village Milk System - an alternative low-cost milk collecting and in-pouch pasteurising system* Available at: [http://www.fao.org/ag/againfo/themes/documents/LPS/DAIRY/ECS/Papers/pp\\_vms.htm](http://www.fao.org/ag/againfo/themes/documents/LPS/DAIRY/ECS/Papers/pp_vms.htm).
- East African Community. (2012) Common External Tariff 2012 Version. Arusha, Tanzania: East African Community.
- Edelman M, Weis T, Baviskar A, et al. (2014) Introduction: critical perspectives on food sovereignty *The Journal of peasant studies* 41: 911-931.
- FAO. (2005) Livestock Sector Brief: United Republic of Tanzania. Rome, Italy: Food and Agriculture Organization (FAO).
- FAO. (2011a) The State of Food and Agriculture 2010–2011: Women in Agriculture: Closing the Gender Gap for Development. Rome, Italy: Food and Agriculture Organization (FAO).
- FAO. (2011b) The State of Food Insecurity in the World (2011): How does international price volatility affect domestic economies and food security? Rome, Italy: Food and Agriculture Organisation (FAO).
- FAO. (2012a) Statistical Yearbook 2012 World Food and Agriculture. *Statistics*. Rome, Italy: Food and Agriculture Organization (FAO).
- FAO. (2012b) Voluntary Guidelines on the Responsible Governance of Tenure of land, fisheries and forests in the context of national food security. Rome, Italy: Food and Agriculture Organisation (FAO).
- FAO. (Undated) Milk Testing and Quality Control. *Milk Processing Guide Series Volume 2*. Naivasha, Kenya: FAO/TCP/KEN/6611 Project, Training Programme for Small Scale Dairy Sector and Dairy Training Institute - Naivasha.
- FAOSTAT. (2016) *Food and agriculture data*. Available at: <http://fenix.fao.org/faostat/beta/en/#home>.
- Flynn KC. (2005) *Food, Culture and survival in an African City*, New York: Palgrave Macmillan.
- Foer JS. (2009) *Eating animals*, New York, NY, USA: Little Brown and Company.
- Forster T and Escudero AG. (2014) City Regions as Landscapes for People, Food and Nature. Washington DC: EcoAgriculture Partners, on behalf of the Landscapes for People, Food and Nature Initiative. 2014.
- Galt RE. (2013) The moral economy is a double-edged sword: Explaining farmers' earnings and self exploitation in community-supported agriculture. *Economic Geography* 89: 341-365.
- Gardner B and Lerman Z. (2006) Agricultural cooperative enterprise in the transition from socialist collective farming. *Journal of Rural Cooperation* 34: 1-18.
- Giddens A. (2013) *Sociology (revised and updated with Phillip W. Sutton)*, Cambridge, UK: Polity.

- Global Hunger Index. (2015) *Tanzania*. Available at: <http://ghi.ifpri.org/countries/TZA/>.
- Goldman A, Krider R and Ramaswami S. (1999) The persistent competitive advantage of traditional food retailers in Asia: wet markets' continued dominance in Hong Kong. *Journal of Macromarketing* 19: 126-139.
- Gordon-Maclean A. (2009) *Unheard Voices: The Challenge of Climate Change in Tanzania*, Dar es Salaam, Tanzania: Norwegian Embassy and Mawazo,.
- GRAIN. (2016) The global farmland grab in 2016: how big, how bad? Barcelona, Spain: GRAIN.
- Granovetter M. (1985) Economic action and social structure: the problem of embeddedness. *American Journal of Sociology*: 481-510.
- Greco E. (2015) Landlords in the making: class dynamics of the land grab in Mbarali, Tanzania. *Review of African Political Economy* 42: 225-244.
- Green J and Thorogood N. (2004) Qualitative methodology and health research. *Qualitative methods for health research*. 3-26.
- Greenberg S. (2010) *Contesting the food system in South Africa: issues and opportunities*, Cape Town, South Africa: Institute for Poverty, Land and Agrarian Studies, University of the Western Cape.
- Greenberg S. (2013) The disjunctures of land and agricultural reform in South Africa: implications for the agri-food system. Cape Town, South Africa: Institute for Poverty, Land and Agrarian Studies, University of the Western Cape.
- Greenberg S. (2015) Corporate concentration and food security in South Africa: is the commercial agro-food system delivering? Cape Town, South Africa: Institute for Poverty, Land and Agrarian Studies, University of the Western Cape.
- Guyer JI. (1987) *Feeding African cities: studies in regional social history*, Manchester, UK: Manchester University Press.
- Habermas J. (1991) *The structural transformation of the public sphere: An inquiry into a category of bourgeois society*: MIT press.
- Hall J and Hammond S. (1998) What is appreciative inquiry? *Inner Edge Newsletter*: 1-10.
- Hammersley M and Atkinson P. (2007) *Ethnography: principles in practice* third edition.
- Harris-White B. (2012) Capitalism and the common man: peasants and petty production in Africa and south Asia. *Agrarian South: Journal of Political Economy* 1: 109-160.
- Hart K. (1973) Informal income opportunities and urban employment in Ghana. *The Journal of Modern African Studies* 11: 61-89.
- Head Start Information & Publication Center. (2001) *Appreciative inquiry resource guide*.
- Heath H and Cowley S. (2004) Developing a grounded theory approach: a comparison of Glaser and Strauss. *International Journal of Nursing Studies* 41: 141-150.
- Hebinck P. (2007) Investigating rural livelihoods and landscapes in Guquka and Koloni: An introduction. *East*: 1-32.
- Hebinck P, Ouden Jd and Verschoor G. (2001) Past, present and future: Long's actor-orientated approach at the interface. In: Hebinck P and Verschoor G (eds) *Resonances*

*and dissonances in development: actors, networks and cultural repertoires*. Assen, The Netherlands: Royal Van Gorcum.

- Hebinck P, Schneider S and van der Ploeg JD. (2015) The construction of new, nested markets and the role of rural development policies: some introductory notes. In: Hebinck P, van der Ploeg JD and Schneider S (eds) *Rural development and the construction of new markets*. London and New York: Routledge, 1-15.
- Hebinck P and van Averbek W. (2013) What constitutes 'the agrarian' in rural Eastern Cape. In: Hebinck P and Cousins B (eds) *In the shadow of policy: everyday practices in South African land and agrarian reforms*. Johannesburg, SA: Wits University Press, 189-204.
- Heijden Tvd and Vink N. (2013) Good for whom? Supermarkets and small farmers in South Africa—a critical review of current approaches to increasing access to modern markets. *Agrekon* 52: 68-86.
- Hill P. (1963) Markets in Africa. *The Journal of Modern African Studies* 1: 441-453.
- Hobbs J and Young LM. (2000) Closer vertical co-ordination in agri-food supply chains: a conceptual framework and some preliminary evidence. *Supply Chain Management: An International Journal* 5: 133-143.
- Holt-Giménez E and Patel R. (2009) *Food rebellions! Crisis and the hunger for justice*, Cape Town, South Africa: Pambazuka Press.
- Hydén G. (1980) *Beyond Ujamaa in Tanzania: underdevelopment and an uncaptured peasantry*, Berkeley and Los Angeles, CA, USA: Univ of California Press.
- IFAD. (2013) Smallholders, food security, and the environment. Rome, Italy: International Fund for Agricultural Development (IFAD).
- IFAD. (2016) Rural development report 2016: fostering inclusive rural transformation. Rome, Italy: International Fund for Agricultural Development (IFAD).
- IFPRI. (2011) Global Hunger Index 2011. The challenge of hunger: taming price spikes and excessive food price volatility. *Global Hunger Index*. Washington DC, Bonn, Dublin.
- International Institute for Sustainable Development. (2013) *What is Sustainable Development?* Available at: <http://www.iisd.org/sd/>.
- IPCC. (2014) Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. In: Pashauri RK and Meyer LA (eds). Geneva, Switzerland: IPCC, 151 pp.
- Jacobi P, Amend J and Kiango S. (2000) Urban agriculture in Dar es Salaam: providing an indispensable part of the diet. *Growing cities, growing food: Urban agriculture on the policy agenda*: 257-283.
- Jayne TS, Chamberlin J and Headey DD. (2014) Land pressures, the evolution of farming systems, and development strategies in Africa: A synthesis. *Food Policy* 48: 1-17.
- Jayne TS, Mason N, Myers R, et al. (2010) Patterns and trends in food staples markets in eastern and Southern Africa: toward the identification of priority investments and strategies for developing markets and promoting smallholder productivity growth. East Lansing, Michigan: Michigan State University,.

- Jayne TS, Yamano T, Weber MT, et al. (2003) Smallholder income and land distribution in Africa: implications for poverty reduction strategies. *Food Policy* 28: 253-275.
- Jerven M. (2011) The quest for the African dummy: explaining African post-colonial economic performance revisited. *Journal of International Development* 23: 288-307.
- Jerven M. (2013) Comparability of GDP estimates in Sub-Saharan Africa: the effect of revisions in sources and methods since structural adjustment. *Review of Income and Wealth* 59: 16-36.
- Jervis SM, Lopetcharat K and Drake MA. (2012) Application of ethnography and conjoint analysis to determine key consumer attributes for latte-style coffee beverages. *Journal of Sensory Studies* 27: 48-58.
- Kaplinsky R and Morris M. (2001) *A handbook for value chain research*: IDRC Ottawa.
- Karg H, Akoto-Danso EK and Drechsel P. (2015) Examining food sources in the city of Tamale, Ghana. *Urban Agriculture*. Online: RUAFA.
- Kasumuni L. (2015) Milk production 'too low'. *The Citizen*. Dar es Salaam, Tanzania: Mwananchi Communications Ltd.
- Kawambwa P, Hendriksen G, Zandonda E, et al. (2014) Business viability assessment study of small holder dairy farming in Zambia. Alterra report, Alterra Wageningen University and Research, Wageningen.
- Kenny B and Mather C. (2008) Milking the region? South African capital and Zambia's dairy industry. *African Sociological Review* 12: 55-66.
- Kivaria F, Noordhuizen J and Kapaga A. (2006) Prospects and constraints of smallholder dairy husbandry in the Dar es Salaam region, Tanzania. *Outlook on AGRICULTURE* 35: 209-215.
- Kovacs-Nolan J, Phillips M and Mine Y. (2005) Advances in the value of eggs and egg components for human health. *Journal of agricultural and food chemistry* 53: 8421-8431.
- Kumar R. (2011) *Methodology: a step-by-step guide for beginners*, London, UK: Sage.
- Kurwijila LR. (2006) *Hygienic milk handling, processing and marketing: reference guide for training and certification of small-scale milk traders in Eastern Africa*, Nairobi, Kenya: ILRI (International Livestock Research Institute).
- Kurwijila LR, Omoro A and Grace D. (2012) *The Tanzania dairy industry*. Morogoro, Tanzania: Sokoine University of Agriculture.
- Kusenbach M. (2003) Street phenomenology the go-along as ethnographic research tool. *Ethnography* 4: 455-485.
- La Via Campesina. (2011) *Declaration of Rights of Peasants, Women and Men*. Available at: <http://viacampesina.org/en/index.php/publications-mainmenu-30/1016-declaration-of-rights-of-peasants-women-and-men>.
- Lahiff E. (2008) *Land reform in South Africa: a status report 2008*: Programme for Land and Agrarian Studies.
- Lahiff E, Davis N and Manenzhe TJ. (2012) *Joint ventures in agriculture: Lessons from land reform projects in South Africa*, London/Rome/Cape Town.: IIED/IFAD/FAO/PLAAS.

- Lahiff E, Maluleke T, Manenzhe T, et al. (2008) Land redistribution and poverty reduction in South Africa: The livelihood impacts of smallholder agriculture under land reform. Cape Town, South Africa: Programme on Land and Agrarian Studies (PLAAS), Land Matrix. (2016) *Land Matrix*. Available at: [www.landmatrix.org](http://www.landmatrix.org).
- Lang T. (2010) Crisis? What crisis? The normality of the current food crisis. *Journal of Agrarian Change* 10: 87-97.
- Latour B. (1996) On actor-network theory: a few clarifications and more than a few complications. *Soziale Welt*, 47, 369–381.
- Latour B. (2005) *Reassembling the social: an introduction to actor-network-theory*, Oxford [etc.]: Oxford University Press.
- Law J. (2009) Actor network theory and material semiotics. *The new Blackwell companion to social theory* 3: 141-158.
- Lazaro F. (2015) Uchumi yet to pay billions to TZ suppliers. *The Citizen*. Dar es Salaam, Tanzania: Mwananchi Communications Ltd.
- Lee-smith D. (2010) Cities feeding people: an update on urban agriculture in equatorial Africa. *Environment and Urbanization* 22: 483-499.
- Lie J. (1997) Sociology of markets. *Annual Review of Sociology* 23: 341-360.
- Lin JY. (1990) Collectivisation and China's agricultural crisis in 1959-1961. *Journal of Political Economy* 98: 1228-1252.
- Lonely Planet. (2012) *Lonely Planet*. Available at: <http://www.lonelyplanet.com/tanzania/shopping/shopping-center>.
- Long N. (2001) *Development sociology: actor perspectives*, London, UK: Routledge.
- Long N and Ploeg J. (1994) Heterogeneity, actor and structure: towards a reconstitution of the concept of structure. In: Booth D (ed) *Rethinking Social Development: Theory, Research and Practice*. Harlow: Longman Pub Group, 62-89.
- Louw A, Jordaan D, Ndanga L, et al. (2008) Alternative marketing options for small-scale farmers in the wake of changing agri-food supply chains in South Africa. *Agrekon* 47: 287-308.
- Manyelo K, Van Averbeke W and Hebinck P. (2014) Smallholder irrigators and fresh produce street traders in Thohoyandou, Limpopo Province, South Africa. In: Hebinck P, van der Ploeg JD and Schneider S (eds) *Rural development and the Construction of New Markets*. 131-150.
- Marsden T and Banks J. (2000) Food supply chain approaches: exploring their role in rural development. *Sociologia Ruralis*.
- Marshall F and Hildebrand E. (2002) Cattle before crops: the beginnings of food production in Africa. *Journal of World Prehistory* 16: 99-143.
- Martins JDS. (2002) Representing the peasantry? Struggles for/about land in Brazil. *The Journal of peasant studies* 29: 300-335.
- Martucci R. (2015) Integrating small farmers in liberal economy. The case of Tanga Fresh in Tanzania. *International Development Studies*. Amsterdam: University of Amsterdam.

- Marx K. (1995) *Capital: A new abridgement*, Oxford, UK: Oxford University Press.
- Masashua HE, Dimoso PJ and Hawaai FGH. (2009) Potentials of urban horticulture for poverty reduction in Dar es Salaam: a case of Kinondoni Municipal.
- Match Maker Associates. (2014) Value chain development course. Arusha, Tanzania: Match Maker Associates Ltd.
- Matondi P and Chikulo S. (2015) Beyond land transfers: the dynamics of socially driven markets emerging from Zimbabwe's Fast Track Land Reform Programme. In: Hebinck P, van der Ploeg JD and Schneider S (eds) *Rural development and the Construction of New Markets*. London and New York: Routledge, 149-167.
- Maye D and Kirwan J. (2010) Alternative food networks. *sociopedia.isa*.
- Maye D and Kirwan J. (2013) Alternative food networks. *Sociology of Agriculture and Food* 20: 383-389.
- Mbilinyi M. (1994) Restructuring gender & agriculture in Tanzania. In: Himmelstrand U, Kinyanjui K and Mburugu E (eds) *African Perspectives on Development*. Dar es Salaam: Mkuki na Nyota.
- Mbilinyi M. (2012) Struggles over land and livelihoods in African agriculture. *Development* 55: 390-392.
- Mbilinyi M and Sechambo G. (2009) Struggles over land reform in Tanzania: experiences of Tanzania Gender Networking Programme and Feminist Activist Coalition. In: Tsikata D and Amanor-Wilks D-E (eds) *Feminist Africa 12 Land, Labour and Gendered Livelihoods*. Cape Town, South Africa: African Gender Institute.
- Mbisso D. (2011) Petty trading in marketplaces: space generation, use and management at Temeke Stereo marketplace in Dar es Salaam, Tanzania. Gothenburg, Sweden: Chalmers University of Technology.
- McHenry DE. (1976) The Ujamaa Village in Tanzania: a comparison with Chinese, Soviet and Mexican experiences in collectivisation. *Comparative Studies in Society and History* 18: 347-370.
- Medick H. (1976) The pro to-industrial family economy: the structural function of household and family during the transition from peasant society to industrial capitalism 1. *Social History* 1: 291-315.
- Mellor JW and Malik SJ. (2017) The impact of growth in small commercial farm productivity on rural poverty reduction. *World Development* 91: 1-10.
- Milkcom. (2016) *A few words about us*. Available at: <http://www.milkcomtz.com/index.php/about-our-company>.
- Millar JR. (1970) A reformulation of A. V. Chayanov's theory of the peasant economy. *Economic Development and Cultural Change* 18: 219-229.
- Miller D. (2008) 'Retail renaissance' or company rhetoric: the failed partnership of a South African corporation and local suppliers in Zambia. *Labour, Capital and Society/Travail, capital et société*: 34-55.

- Ministry of Finance and Planning. (2014) *Import duty*. Available at: [http://www.mof.go.tz/index.php?option=com\\_content&id=41:import-duty&Itemid=56](http://www.mof.go.tz/index.php?option=com_content&id=41:import-duty&Itemid=56).
- Ministry of Livestock and Fisheries Development. (2010) Livestock sector development strategy. Dar es Salaam, Tanzania: Government of the United Republic of Tanzania.
- Ministry of Livestock Development. (2006a) Investment opportunities in the livestock industry. Dar es Salaam, Tanzania: Ministry of Livestock Development.
- Ministry of Livestock Development. (2006b) National livestock policy. Dar es Salaam, Tanzania: Government of the United Republic of Tanzania.
- Minten B, Randrianarison L and Swinnen JFM. (2009) Global retail chains and poor farmers: evidence from Madagascar. *World Development* 37: 1728-1741.
- Miriri D. (2014) *Kenya's Nakumatt to buy Shoprite's stores in Tanzania*. Available at: <http://www.reuters.com/article/2014/01/10/kenya-nakumatt-shoprite-idUSL6N0KK1LC20140110>.
- Mkenda-Mugittu V. (2003) Measuring the invisibles: gender mainstreaming and monitoring experience from a dairy development project in Tanzania. *Development in Practice* 13: 459-473.
- Mlozi MRS, Kakengi AVM, Minga UM, et al. (2012) Marketing of free range local chickens in Morogoro and Kilosa urban markets, Tanzania. *Livestock Research for Rural Development* 15: 3-8.
- Morgan K. (2009) Feeding the city: the challenge of urban food planning. *International Planning Studies* 14: 341-348.
- Morgan K and Sonnino R. (2010) The urban foodscape: world cities and the new food equation. *Cambridge Journal of Regions, Economy and Society* 3: 209-224.
- Msalya G. (2014) Safe food, Fair food, Tanzania: rapid assessment report 2014. *Safe Food, Fair Food annual project planning meeting, Addis Ababa, Ethiopia*, . Addis Ababa, Ethiopia.
- Msami HM. (2008) Poultry sector country review. Rome: Food and Agriculture Organisation.
- Mutopo P. (2014) *Women, mobility and rural livelihoods in Zimbabwe: experiences of fast track land reform*: Brill.
- My Agriculture Information Bank. (Undated) *Milk testing - alcohol test*. Available at: <http://agriinfo.in/?page=topic&superid=9&topicid=712>.
- Nasr J and Komisar J. (2012) The integration of food and agriculture into urban planning and design practices. In: Viljoen A and Wiskerke JSC (eds) *Sustainable food planning, evolving theory and practice*. Wageningen, Wageningen Academic Publishers. Wageningen, Netherlands: Wageningen Academic Publishers, 47-58.
- National Bureau of Statistics. (2011) Tanzania demographic and health survey 2010. Dar es Salaam, Tanzania: NBS and ICF Macro.
- National Bureau of Statistics. (2012a) Volume II: Crop sector - national report. Dar es Salaam, Tanzania: Government of the United Republic of Tanzania.

- National Bureau of Statistics. (2012b) Volume III: Livestock sector - national report. Dar es Salaam, Tanzania: Government of the United Republic of Tanzania.
- National Bureau of Statistics. (2013a) 2012 Population and housing census. Dar es Salaam: National Bureau of Statistics, Ministry of Finance.
- National Bureau of Statistics. (2013b) Tanzania in figures 2012. Dar es Salaam: National Bureau of Statistics.
- National Bureau of Statistics. (2014) Household budget survey main report, 2011/2012. Dar es Salaam, Tanzania: National Bureau of Statistics, Ministry of Finance.
- Neven D, Odera MM, Reardon T, et al. (2009) Kenyan supermarkets, emerging middle-class horticultural farmers, and employment impacts on the rural poor. *World Development* 37: 1802-1811.
- Neven D, Reardon T, Chege J, et al. (2006) Supermarkets and consumers in Africa: the case of Nairobi, Kenya. *Journal of International Food & Agribusiness Marketing* 18: 103-123.
- Ngugi B. (2015) Uchumi supermarkets shut down regional operations. *Daily Nation*. Nairobi, Kenya: Nation Media Group.
- Nnunduma BJ. (2003) Structure and behaviour of food trading networks: the case of collecting wholesalers in Dar es Salaam and Arusha, Tanzania. *Department of Human Geography, Stockholm University*.
- Nolte K, Chamberlain W and Giger M. (2016) International land deals for agriculture. Fresh insights from the Land Matrix: analytical report II. Bern, Montpelier, Hamburg, Pretoria: Centre for Development and Environment, University of Bern; Centre de coopération internationale en recherche agronomique pour le développement; German Institute of Global and Area Studies; University of Pretoria; Bern Open Publishing.
- Nonga HE, Kajuna FF, Ngowi HA, et al. (2012) Physical egg quality characteristics of free-range local chickens in Morogoro Municipality, Tanzania. *Livestock Research for Rural Development* 22: 1-6.
- Oleke JM and Isinika AC. (2011) Assessing the technical efficiency of commercial egg production in Tanzania for improved livelihoods. *Journal of Development and Agricultural Economics* 3(8): 343-352.
- Oliver SP, Boor KJ, Murphy SC, et al. (2009) Food safety hazards associated with consumption of raw milk. *Foodborne pathogens and disease* 6: 793-806.
- Ostrom E. (1990) *Governing the Commons: the evolution of institutions for collective action*, Kindle edition. New York: Cambridge University Press.
- Ostrom E. (2010) Beyond markets and states: polycentric governance of complex economic systems. *American Economic Review* 100: 1-33.
- Oudwater N and Martin A. (2003) Methods and issues in exploring local knowledge of soils. *Geoderma* 111: 387-401.
- Oxfam. (2011) *Growing a better future: food justice in a resource-constrained world*. Oxford.
- Patel R. (2007) *Stuffed & starved*: Black Inc.
- Piketty T. (2014) *Capital in the 21st Century*. Kindle edition. *Cambridge: Harvard Uni*.

- Polanyi K. (1957) *The great transformation: the political and economic origins of our time.*, Boston: Beacon Press.
- Polanyi K. (1992) The economy as instituted process. In: Granovetter M and Swedberg R (eds) *The Sociology of Economic Life*. Boulder: Westview Press, 29-51.
- Qorro E. (2015) Revealed: the dark side of Dar's booming meat trade. *The Citizen*. Dar es Salaam, Tanzania: Mwananchi Communications Ltd.
- Raikes P. (1978) Rural differentiation and class-formation in Tanzania *The Journal of peasant studies* 5.3: 285-325.
- Reardon T, Timmer CP, Barrett CB, et al. (2003) The rise of supermarkets in Africa, Asia, and Latin America. *American Journal of Agricultural Economics* 85.5: 1140-1146.
- Renting H, Marsden TK and Banks J. (2003) Understanding alternative food networks: exploring the role of short food supply chains in rural development. *Environment and planning A* 35: 393-411.
- REPOA. (2007a) The status of growth and the reduction of income poverty in Tanzania. Dar es Salaam, Tanzania: REPOA.
- REPOA. (2007b) Views of the people 2007. *Economic Affairs*. Dar es Salaam, Tanzania: Research on Poverty Alleviation.
- REPOA. (2009a) Institutional analysis of nutrition in Tanzania. Dar es Salaam, Tanzania: Research on Poverty Alleviation.
- REPOA. (2009b) Poverty alleviation - 2009. Dar es Salaam, Tanzania: Research on Poverty Alleviation.
- Roever S and Skinner C. (2016) Street vendors and cities. *Environment and Urbanization* 28: 359-374.
- RSO. (2011) Rural Sociology Group, Booklet, 2012-2015. Wageningen University.
- SAGCOT. (Undated) Appendix IV. Value chain and market analysis. Dar es Salaam, Tanzania: Southern Africa Growth Corridor of Tanzania.
- Sandelowski M. (2000) Focus on research methods whatever happened to qualitative description? *Research in nursing and health* 23: 334-340.
- Saul J. (1974) African peasants and revolution. *Review of African Political Economy* 1: 41-68.
- Schneider S, van der Ploeg JD and Hebinck P. (2015) Reconsidering the contribution of nested markets to rural development. In: Hebinck P, van der Ploeg JD and Schneider S (eds) *Rural development and the Construction of New Markets*. London and New York: Routledge, 190-205.
- Scott JC. (1985) *Weapons of the weak: everyday forms of peasant resistance*, New Haven: Yale University Press.
- Scott JC. (1998) *Seeing like a state: how certain schemes to improve the human condition have failed*. New Haven: Yale University Press.
- Scott JC. (2009) *The art of not being governed: an anarchist history of upland southeast Asia*. New Haven: Yale University Press.

- SELF Nutrition Data. (2016) *Milk, producer, fluid, 3.7% milkfat*. Available at: <http://nutritiondata.self.com/facts/dairy-and-egg-products/70/2>.
- Sentenac H. (2014) *Raw milk movement grows amid push to ease regulation*. Available at: <http://www.foxnews.com/leisure/2014/05/01/raw-milk-movement-grows-amid-push-to-ease-regulation/>.
- Seville D, Buxton A and Vorley B. (2011) Under what conditions are value chains effective tools for pro-poor development. Accessed 21st August, available from [http://pubs. iied.org/16029IIED. html](http://pubs.iied.org/16029IIED.html).
- Sherwood S, Arce A, Berti P, et al. (2013) Tackling the new materialities: modern food and counter-movements in Ecuador. *Food Policy* 41.
- Shivji IG. (1976) *Class struggles in Tanzania*, London: Heinemann.
- Shoppers Plaza. (2013) Available at: <http://www.shoppers.co.tz/aboutus.php>.
- Shoprite Holdings Ltd. (2014) *Shoprite Holdings Ltd., Overview*. Available at: <http://www.shopriteholdings.co.za/OurGroup/Pages/Overview.aspx>.
- Skinner C. (2016) Informal food retail in Africa: a review of evidence. In: Battersby J and Watson V (eds) *Consuming urban poverty project*. Cape Town: African Centre for Cities.
- Skinner C and Haysom G. (2016) The informal sector's role in food security: a missing link in policy debates? Cape Town: PLAAS, UWC and Centre of Excellence in Food Security.
- Smith FI and Eyzaguirre P. (2007) African leafy vegetables: their role in the World Health Organization's global fruit and vegetables initiative. *African Journal of Food Agriculture, Nutrition and Development* 7.
- Sonnino R. (2009) Feeding the city: towards a new research and planning agenda. *International Planning Studies* 14.
- Starkman N. (2015) Editors note: the local food revolution. *Civil Eats*. Online.
- Steel C. (2012) Sitopia – harnessing the power of food. In: Viljoen A and Wiskerke JSC (eds) *Sustainable food planning: evolving theory and practice*. Wageningen: Wageningen Academic Publishers, 37-46.
- Stierand P. (2012) Food policy councils: recovering the local level in food policy. In: Viljoen A and Wiskerke JSC (eds) *Sustainable food planning: evolving theory and practice*. Wageningen, Netherlands: Wageningen Academic Publishers, 61-66.
- Strauss A and Corbin J. (1994) Grounded theory methodology: an overview. *Handbook of qualitative research* 273-285.
- Sulemana N. (2016) Under the lens of embeddedness: a socio-cultural perspective on home-grown school feeding in Ghana. *Rural Sociology*. Wageningen, Netherlands: Wageningen University.
- Sulle E and Nelson F. (2009) *Biofuels, land access and rural livelihoods in Tanzania*, London, UK: IIED.
- Sulle E and Nelson F. (2013) Biofuels investment and community land tenure in Tanzania. Online: Future Agricultures.

- Sumberg J. (1997) Policy, milk and the Dar es Salaam peri-urban zone: a new future for an old development theme? *Land Use Policy* 14: 277-293.
- Sumberg J. (1999) The Dar es Salaam milk system: dynamics of change and sustainability. *Habitat International* 23: 189-200.
- Tandon N and Wegerif M. (2013) Promises, power, and poverty: corporate land deals and rural women in Africa. Oxfam. Oxford.
- TANU. (1967) The Arusha Declaration: Socialism and Self-Reliance. Reprint by Mwalimu Nyerere Professorial Chair in Pand African Studies ed. Dar es Salaam, Tanzania: Tanganyika African National Union (TANU).
- TFPC. (Undated) *Toronto food policy council: about*. Available at: [www.tfpc.to/about](http://www.tfpc.to/about).
- The World Bank. (2012) Agribusiness indicators: Tanzania.
- Thomas S. (2004) What is participatory learning and action (PLA): an introduction. *Centre for International Development and Training (CIDT), London*.
- TNBC. (2009) "kilimo kwanza" Toward a Tanzania green revolution: policy measures and strategies. Dar es Salaam, Tanzania: Tanzania National Business Council,.
- Tripp AM. (1989) Women and the changing urban household economy in Tanzania. *The Journal of Modern African Studies* 27: 601-623.
- Tschirley D. (2007) Supermarkets and beyond: literature review on farmer to market linkages in Sub-Saharan Africa and Asia. East Lansing, MI, USA: Michigan State University.
- Tsikata D and Amanor-Wilks DE. (2009) Editorial: land and labour in gendered livelihood trajectories. In: Tsikata D and Amanor-Wilks D-E (eds) *Feminist Africa 12 Land, Labour and Gendered Livelihoods*. Cape Town, South Africa: African Gender Institute.
- UN-Habitat. (2003) The challenge of slums: global report on human settlements 2003. London, UK: UN-Habitat.
- UN. (2014) World urbanization prospects: the 2014 revision, highlights (ST/ESA/SER.A/352). *New York, United Nations*.
- UN General Assembly. (2017) New urban agenda. New York, USA: United Nations.
- UNCTAD. (2015) The least developed countries report: transforming rural economies. United Nations.
- UNECA. (2013) Large-scale land based investments in Africa: Synthesis report. Addis Ababa, Ethiopia: United Nations. Economic Commission for Africa.
- Van der Ploeg JD. (2008) *The new peasantries: struggles for autonomy and sustainability in an era of empire and globalization*, London: Earthscan.
- Van der Ploeg JD. (2010) The food crisis, industrialized farming and the imperial regime. *Journal of Agrarian Change*, 10(1), 98-106.: 99-106.
- Van der Ploeg JD. (2014) Peasant-driven agricultural growth and food sovereignty. *Journal of Peasant Studies* 41: 999-1030.

- Van der Ploeg JD. (2015) Newly emerging, nested markets: a theoretical introduction. In: Hebinck P, van der Ploeg JD and Schneider S (eds) *Rural development and the Construction of New Markets*. London and New York: Routledge, 16-40.
- Van der Ploeg JD, Huifang W and Congzhi H. (2016) Markets. In: Van der Ploeg JD and Jingzhong Y (eds) *China's Peasant Agriculture and Rural Society: Changing paradigms of farming*. Routledge: London, UK.
- Van der Ploeg JD, Jingzhong Y and Schneider S. (2012) Rural development through the construction of new, nested, markets: comparative perspectives from China, Brazil and the European Union. *Journal of Peasant Studies* 39: 133-173.
- Vegan Peace. Available at: [http://www.veganpeace.com/animal\\_cruelty/eggs.htm](http://www.veganpeace.com/animal_cruelty/eggs.htm).
- Walker D and Myrick F. (2006) Grounded theory: an exploration of process and procedure. *Qualitative health research* 16: 547-559.
- Waser M, Michels K, Bieli C, et al. (2007) Inverse association of farm milk consumption with asthma and allergy in rural and suburban populations across Europe. *Clinical & Experimental Allergy* 37: 661-670.
- Watson S and Studdert D. (2006) *Markets as sites for social interaction: spaces of diversity*: Policy Press. Bristol. UK.
- Weatherspoon DD and Reardon T. (2003) The Rise of supermarkets in Africa: implications for agrifood systems and the rural poor. *Africa* 21: 333-355.
- Wegerif M. (2010) The right to land restitution as inspiration for mobilization. In: Walker C, Bohlin A, Hall R, et al. (eds) *Land, Memory, Reconstruction, and Justice: Perspectives on Land Claims in South Africa*. Athens, Ohio: Ohio University Press, 100-115.
- Wegerif M, Russell B and Grundling I. (2005) *Still searching for security: the reality of farm dweller evictions in South Africa*, Polokwane, South Africa: Nkuzi Development Association.
- Wegerif MCA. (2014a) Exploring sustainable urban food provisioning: the case of eggs in Dar es Salaam. *Sustainability* 6: 3747-3779.
- Wegerif MCA. (2014b) On the milk trail – food provisioning in Dar es Salaam. *Rural Sociology Group Wageningen University*. Wageningen, Netherlands.
- Wegerif MCA. (2014c) Symbiotic chicken supplies: food provisioning in Dar es Salaam. *Rural Sociology Group Wageningen University*. Wageningen, Netherlands.
- Wegerif MCA. (2015a) Green vegetable supply in Dar es Salaam. *Urban Agriculture*. RUAF, 65-67.
- Wegerif MCA. (2015b) Navigating the maize to the city. In: Agriculture in an Urbanizing Society (ed) *International conference on reconnecting agriculture and food chains to societal needs: Proceedings of the conference*. Rome, Italy, 503-504.
- Wegerif MCA. (2016) Feeding Dar es Salaam: where does all the meat come from? *Rural Sociology Group Wageningen University*. Wageningen, Netherlands.
- Wegerif MCA and Hebinck P. (2016) The symbiotic food system: an 'alternative' agri-food system already working at scale. *Agriculture* 6: 40.

- Weis T. (2013) *The ecological hoofprint: the global burden of industrial livestock*, London, UK: Zed Books.
- Werft M. (2015) How eliminating plastic bags in Rwanda saves lives and the economy. *Global Citizen*. Online: Global Poverty Project.
- Willis P and Trondman M. (2000) Manifesto for ethnography. *Ethnography* 1: 5-16.
- Wiskerke H, Verhoeven S and Habets D. (2015) *Seeing Dar*, Amsterdam, Netherlands: Amsterdam Academy of Architecture.
- Wiskerke JSC. (2007) Robust regions: dynamism, coherence and diversity in the metropolitan landscape. Wageningen.
- Wiskerke JSC. (2010) On places lost and places regained: reflections on the alternative food geography and sustainable regional development. *International Planning Studies*: 37-41.
- Wiskerke JSC and Viljoen A. (2012) Sustainable urban food provisioning: challenges for scientists, policy makers, planners and designers. In: Viljoen A and Wiskerke JSC (eds) *Sustainable food planning: evolving theory and practice*. Wageningen: Wageningen Academic Publishers, 19-35.
- World Bank. (2012) World development report 2012: gender equality and development. Washington, USA.
- World Bank Group. DFPweb. (2013) *What is sustainable development?* Available at: <http://www.worldbank.org/depweb/english/sd.html>.
- World Health Organisation. *Global Health Observatory data*. Available at: [http://www.who.int/gho/road\\_safety/mortality/number\\_text/en/](http://www.who.int/gho/road_safety/mortality/number_text/en/).
- World Health Organisation. (2014) *Tanzania: road traffic accidents*. Available at: <http://www.worldlifeexpectancy.com/tanzania-road-traffic-accidents>.
- Zingaretti N. (2015) *AgUrbRome 2015*. Available at: <http://www.agricultureinurbanizingsociety.com/?cat=1>.



## Summary

This thesis is an empirically and ethnographically grounded analysis of the nature of the main food system that produces and delivers most of the food eaten by residents of the city of Dar es Salaam. Researching how this city of over 4.6 million people is fed now was undertaken as a valuable entry point for engaging with the challenge of how to sustainably feed such large and fast growing cities in a way that is beneficial to food producers. This in the context of rapid urbanisation, a world population projected to reach 9 billion by 2050, climate changes and other challenges to the achievement of the right to food for all, not least being serious concerns with the sustainability of the globally dominant agro-industrial food system. How I arrived at this topic and these challenges are elaborated in Chapter One.

Chapter Two explains my theoretical approach that moved from empirical research to theoretical analysis and conclusions through applying a combination of actor orientated ethnography and the grounded theory approach. I set out to gather data on the everyday practices and perspectives of the actors involved in the food system, including how they respond to and reshape systemic and external pressures and opportunities. It became an iterative process of gathering empirical data and out of that identifying phenomena which were tested against theory and likewise various theories were tested against the empirical situation in order to see which were of relevance in order to arrive at an understanding and a theoretical explanation of the main food system that feeds Dar es Salaam.

The approach involved drawing on a wide range of existing literature, including from the fields of: orthodox economics; political economy analysis; alternative food networks; city and regional food systems; supermarket expansion; value chain analysis and development; and the study of urban food provisioning and markets in Africa. Of particular interest, given some of the empirical findings, are concepts of common pool resource management and nested markets. Important to my grounded theory approach, however, was starting without a-priori assumptions and in particular avoiding viewing the food system through a modernisation lens with its assumed linear processes of 'development'. This included deliberately steering away from the application of concepts such as 'peasants', 'informal' and 'consumers' that have been developed in contexts other than Tanzania and carry with them a wide range of assumptions. I have instead used the terminology of eaters and *wakulima* (farmers in Kiswahili) and set out to understand and theorise the particular ordering principles of the food system found to be feeding Dar es Salaam.

Chapter Three sets out the type of data that was gathered and the methods and processes used. Central to the approach was 'following the food' from eaters in the city back through the networks of retailers, traders, processors and transporters to the primary producers. Visits have been made to different key nodes of the food system, such as markets, milling operations and the fields where food is grown. In depth interviews were conducted with 174 people within or connected to the food system. Repeat visits were made to some of these

over years and in-situ observation and conversation with a wide range of additional actors added more information and insights.

Chapter Four starts to share research findings through descriptions of a selection of eaters in Dar es Salaam, their circumstances, food choices and food sources. These illustrate particular issues of importance for the conceptual and theoretical analysis. The important sources of food for the majority of eaters, who are not wealthy, include: the local *dukas* (small shops); people's markets with their range of traders; direct supply in the form of purchases and gifts from urban and rural producers; and speciality shops such as those focussed on selling grains. A clear picture emerges of the factors that facilitate maximum accessibility of food for urban eaters. These are: low prices; availability in flexible quantities; proximity to place of residence; long opening hours of shops; availability of credit when needed; sharing in family and friend networks; and having a source of income in order to be able to purchase. Supermarkets are not used at all by the majority of eaters because they perform very poorly on all the above mentioned factors that facilitate food access.

Chapter Five gives a picture of important trading places and actors involved. We begin to see more clearly, in these nodes of the food system, the symbiotic nature of relations that are integral to how the system works. For example, we see the importance of social relations and familiarity between people and the high level of collaboration among market traders despite also competing with each other in selling the same products. Although they are not important sources of food for the majority, the supermarket system and an international fast food chain are touched on for lessons from them as counter-examples.

Chapters Six and Seven follow the foods of maize, rice, potatoes, eggs and green vegetables. The heavy staple foods come from a wide geographic area across Tanzania. The eggs and green vegetables involve a lot of urban and peri-urban production, but also trucking into the city from 100s of kilometres away. With all the foods we see a similar pattern of traders buying for cash at the 'farm gate', even in small amounts, from the urban producers to remote villages. Some of the food goes through regional and wholesale markets. In other cases it goes directly to Dar es Salaam and at times, particularly with urban production, straight to urban eaters. The maize and rice mills are important nodes in the system with the machinery, even when individually owned, used by many different traders. *Dalalis* (agents) are essential in facilitating links between actors and bulking food at key nodes in the system. The primary production of most food is by small-scale *wakulima* who are often using low external input farming practices and have the potential for sustainable production, despite the serious challenges from climate change and pressure on land and natural resources. We see in these findings more illustrations of the nature of the food system, such as high levels of interdependence between actors and many forms of collaboration, going beyond narrow financial transactions, between people who are competing and trading with each other.

Chapter Eight focusses on milk supplies looking at peri-urban raw milk production and distribution as well as the case of Tanga Fresh, one of Tanzania's largest dairies that buys

from small *wakulima* and delivers milk to the city. This provides an opportunity to compare what I call the symbiotic food system with a value chain development intervention. It is found that the symbiotic food system significantly out performs the value chain intervention in that it provides higher prices to the producers and lower prices to the eaters. It also creates more autonomy and real control for many actors, while the value chain intervention struggles to get the trust of *wakulima* and favours relations with larger corporate entities, like supermarkets, over linking to the many small enterprises that actually sell more of their milk. This challenges the logic of the high level of academic attention and considerable development organisation support given to value chain interventions that have limited positive outcomes when it comes to addressing poverty and food insecurity.

Chapter Nine presents the main lessons and findings from the research. There is a section on the value of the 'ride-along' as a research method and lessons for how to effectively implement this and take into account transport in research design.

The main conclusion is that the symbiotic food system feeding Dar es Salaam is based on a wide range of small-scale and interdependent actors who together produce the food and get it to urban eaters at a city feeding scale without any large vertically or horizontally integrated corporate structures. From small-scale *wakulima*, through to urban retailers and in markets in-between, there is a high level of diverse collaboration between actors, many of whom are also competitors. It is not perfect, but it is working, has considerable advantages and should be built on. The concept of the symbiotic food system is developed drawing on some of the similarities, as well as differences, with nested markets and common pool resource management. It builds on the understanding of market relations as socially embedded to put forward the core ordering principle of symbiosis that is enabled by familiarity and common cultural repertoires. Based on how the symbiotic food system has been found to function, a range of recommendations and considerations are put forward for improvements and the enabling of sustainable and equitable food supplies to meet the food needs of cities in ways that benefit producers.



## Acknowledgments

First I want to thank all the people in the food system that feeds Dar es Salaam who have been so friendly as well as open in sharing information, time and meals with me. I am in awe of so many of the hard working women and men who produce the food and get it to all parts of the city every day.

Without Paul Hebinck I would not have come to Wageningen University or pursued this academic adventure. So glad you have been able to stay with my PhD process as my Co-Promoter to the end Paul. Thanks for your contribution to shaping my exploration and importantly giving the space and encouragement for it.

My Promoter Han Wiskerke has been a steady hand, given me the feedback needed, been flexible in accommodating me as an external PhD candidate in the Rural Sociology Group he leads. Most valued and encouraging, Han, has been your enthusiasm for my research and some of its findings, thanks for that.

Robert Mhamba of the Institute of Development Studies at the University of Dar es Salaam played an important role in assisting with research permits and guiding my field research.

There are many other people from different institutions who have encouraged and assisted, sometimes more than they know, through their input and encouraging interest in my work; notably Emmanuel Sulle, Sergio Schneider and Dirk Roep. Apologies to those I don't mention here, many have contributed.

Journal editors who have published some of my work have created the opportunity to put down my ideas and share them more widely. The anonymous external reviewers assisted greatly through their challenges and suggestions to give direction, not only to those journal articles, but to my PhD as a whole.

The opportunities to share my work in various seminars, lectures and conferences have been invaluable in pushing me to focus my arguments and creating opportunities for receiving feedback. I thank all the organisers who made these moments possible.

My thanks go to Monique and Aniek Hebinck and Melchior Polwijk. They have made my visits to Wageningen easier and more enjoyable through always welcoming me and assisting with such practicalities as bicycles.

Teresa, my partner in life, has always been positive about me studying and has stayed with me over the last years despite the ups and downs and times away for research and study. Thank you Teresa for being so supportive and loving to Zora and Maya, our great daughters.



## **Funding**

The research described in this thesis was self-financed by the author.

Financial support from Wageningen University for printing this thesis is gratefully acknowledged.

Printed by: Proefschriftmaken, De Limiet 24C - 4131 NR, Vianen, Netherlands

Cover design and photographs by: Marc C. A. Wegerif

