IMPROVING URBAN LAND GOVERNANCE WITH EMPHASIS ON INTEGRATING AGRICULTURE BASED LIVELIHOODS IN SPATIAL LAND USE PLANNING PRACTISE IN TANZANIA

A Thesis Submitted In Partial Fulfilment Of The Requirement For Higher Research Degree of Doctor of Natural Sciences (Dr. rer. nat.) of the Faculty of Forest and Environmental Sciences, Albert-Ludwigs-Universität Freiburg im Breisgau, Germany

Submitted

By

Wakuru Magigi

From Moshi (Tanzania)

Freiburg im Breisgau
2008

Dean: Prof. Dr. Boppre

Supervisor: Prof. Dr. Axel Drescher

2nd Reviewer: Prof. Dr. Rüdiger Glaser

Date of Thesis Disputation: 2nd July 2008

DEDICATION

To My Loving Wife Eva John

&

In Memory of My Beloved Father-Magigi Maseka

(1932-2006)

TABLE OF CONTENT Pg

ACKNOWLEDGEMENTS v
ABSTRACT… vii
ZUSAMMENFASSUNG viii
LIST OF FIGURES x
LIST OF TABLES xi
LIST OF MAPS xii
LIST OF PLATES xiii
LIST OF ACRONOMYS xiv
PART I: STUDY SETTING AND THE STATE OF THE ART 1
CHAPTER ONE: BACKGROUND OF THE STUDY 1
1.1 Introduction 1
1.2 Statement of the research problem 3
1.3 Research hypothesis, objectives and questions 3
1.4 Research methodological approach 4
1.5 Research contributions and thesis structure 6
1.6 Reflections 7
CHAPTER TWO: SPATIAL LAND USE PLANNING AND URBAN AGRICULTURE DEVELOPMENT IN CITIES: PRACTISE AND CHALLENGES 8
2.1 Introduction 8
2.2 Population and informal settlement proliferation in an urbanisation context 8
2.3 Food challenges in Tanzania and the need for increased production 10
2.4 Ideal urban land use development and planning doctrine: An inclusion of farming 12
2.5 Land use planning principles and instruments: Do these integrate urban agriculture? 14
2.6 Policy and legal environment 19
2.7 Planning institution, structures and roles 25
2.8 Roles of planning institutions in the Tanzanian context 27
2.9 Land use planning and decision-making processes 28
2.10 Land use coordination and control 30
2.11 Urban agriculture: Risks and benefits 30
2.12 Case studies examined integration of urban agriculture in spatial land use planning 31
2.12.1 Allotment gardens in Germany 31
2.12.2 Countries in Sub-Saharan Africa 32
2.13 Reflections and missing gaps investigated 35
PART II: THEORETICAL FRAMEWORK AND METHODOLOGICAL UNDERPININGS 36
CHAPTER THREE: THEORETICAL AND CONCEPTUAL FRAMEWORK 36
3.1 Introduction 36
3.2 Theories…. 36
3.2.1 Periurban Typology (PUT) framework 37
3.2.2 Location theory 40
3.3 Concepts and conceptual framework 42
3.4 An analytical framework 46
3.5 Reflections 49
CHAPTER FOUR: RESEARCH DESIGN AND METHODOLOGY 50
4.1 Introduction 50
4.2 Research design 50

4.2.1 What is research design? 50
4.2.2 Research strategy and rationale 51
4.2.3 Sampling and sampling frame 52
4.2.4 Case study areas, selection and characteristics 56
4.2.5 Type of data collected 59
4.2.6 Unit of analysis 60
4.2.7 Validity, reliability and generalisation 61
4.3 Research methods employed 61
4.3.1 Tools and methods 62
4.3.2 Data analysis strategies and presentation 65
4.3.3 Data triangulation and interpretation 66
4.4 Reflections 66
PART III: STUDY RESULTS, DISCUSIONS AND SYNTHESIS 67
CHAPTER FIVE: DESCRIPTIONS OF THE STUDY SETTLEMENTS 67
5.1 Introduction 67
5.2 Dar Es Salaam 67
5.2.1 Development trends and spatial growth 67
5.2.2 Land use planning institutions, policy and decision making processes and structures 70
5.2.3 Extent of urban agriculture and characteristics 76
5.3 Chang'ombe 'A' 77
5.3.1 Location and spatial development 77
5.3.2 Socio-economic setting 81
5.3.3 Extent of urban agriculture 82
5.4 Ubungo Darajani 82
5.4.1 Location and spatial development 82
5.4.2 Socio-economic setting 85
5.4.3 Extent of urban agriculture 86
5.5 Goba……. 86
5.5.1 Location and spatial development 86
5.5.2 Socio-economic setting 87
5.5.3 Extent of urban agriculture 88
5.6 Reflections 89
CHAPTER SIX: LAND USE PLANNING PROCESSES AND STRUCTURES ADOPTED BY PLANNING INSTITUTIONS IN THE STUDY SETTLEMENTS 91
6.1 Introduction 91
6.2 Process and structures in Goba, Ubungo Darajani and Chang'ombe 'A' 91
6.3 Factors influencing land use planning and role of actors 105
6.4 Allied challenges for land use planning and urban agriculture integration 106
6.4.1 Land tenure 107
6.4.2 Access to land use planning information 108
6.4.3 Land use planning without implementation focus 108
6.4.4 Presence of mixed land uses 108
6.4.5 Adaptation of planning standards and building regulation 108
6.4.6 Financial aspects 110
6.4.7 Land use conflicts 111
6.4.8 Low priority of urban agriculture in municipal, city and national programmes 111
6.5 Impacts of land use planning processes on urban agriculture 111

6.6 The missing link for land use planning practise to integrate with urban agriculture 112
6.7 Reflections 115
CHAPTER SEVEN: URBAN AGRICULTURE LIVELIHOOD AND ITS IMPACTS IN THE STUDY SETTLEMENTS 116
7.1 Introduction.....116
7.2 Forms of urban agriculture in Goba, Chang'ombe 'A' and Ubungo Darajani 116
7.2.1 Crop farming..... 116
7.2.2 Animal husbandry..... 118
7.2.3 Poultry farming..... 120
7.2.4 Horticulture production 121
7.3 Amaranths spp production (African Spinach) 121
7.3.1 Production system and trends 121
7.3.2 Social characteristics of actors, location, and migration trends..... 124
7.3.3 Asset (input) building and use 126
7.3.4 Access to land..... 126
7.3.5 Markets and marketing 127
7.3.6 Problems affecting amaranth production..... 130
7.4 Impacts: Benefits, costs and risks.....131
7.4.1 Urban agriculture benefits 131
7.4.2 Costs and risks associated with urban agriculture 132
7.5 Allied challenges influencing urban agriculture setting and production 134
7.5.1 Security of land tenure..... 134
7.5.2 Access to information, communication, credit facilities, and informal land acquisition 134
7.5.3 Absence of smallholder farmer organisations 135
7.5.4 Low priority setting to support urban agriculture in urban authorities..... 136
7.5.5 Weak planning institutions linkages and participation..... 136
7.5.6 Inadequate technology on use of waste-water for farming..... 138
7.5.7 Increasing housing density 138
7.5.8 Low urban agriculture rent price at market value as city investment expands..... 139
7.6 The voices of different stakeholders on urban agriculture 139
7.7 SWOT analysis of urban agriculture and spatial land use planning.....140
7.8 Reflection.....142
CHAPTER EIGHT: CROSS CASE ANALYSIS AND SYNTHESIS 143
8.1: Introduction 143
8.2 The impact of urbanisation 143
8.3 Urban agriculture: A livelihood strategy for food security and poverty reduction 144
8.4 Legal and policy environment 145
8.5 Social capital ties and linkages 147
8.5.1 Smallholder farmers' household assets 147
8.5.2 Community assets..... 148
8.5.3 Smallholder farmers and state relations..... 148
8.5.4 Involvement 149
8.5.5 Institutional linkages..... 149
8.5.6 Role of planning institutions and power relations in practise..... 151
8.5.7 Financial mobilisation 151
8.6 Decision making and initiation rights.....151
8.7 Location and forms of urban agriculture 153

8.8 Infrastructure improvement 155
8.9 Distance to market premises for urban agriculture products 156
8.10 Land coordination and development control 156
8.10.1 Access to land 156
8.10.2 Land allocation modalities 156
8.10.3 Insecurity of tenure 157
8.10.4 Land use zoning and conditions for change of use 157
8.10.5 Housing density 158
8.11 Health implication of wastewater 159
8.12 Bureaucratic system involved in land use planning processes 159
8.13 Political interest and support 160
8.14 Voices of different stakeholders on urban agriculture implementation in the city 160
8.15 Reflections 161
8.16 Theoretical framework and relevance 162
PART IV: STUDY RESULTS IMPLICATIONS, UNRESOLVED ISSUES, RECOMMENDATIONS AND CONCLUSIONS 164
CHAPTER NINE: POLICY AND PLANNING IMPLICATIONS AND UNRESOLVED ISSUES 164
9.1 Introduction 164
9.2 Implications to policy and urban planning practice 165
9.2.1 Urban food security 165
9.2.2 Human settlements and building regulation policies and legislation 165
9.2.3 Improving agricultural livelihoods through innovations in settlement planning 172
9.3 Reflection on the three study settlements 173
9.4 Unresolved issues for future policy agenda and development thrust 175
CHAPTER TEN: RECOMMENDATIONS AND CONCLUSION 177
10.1 Recommended options 177
10.1.1 Settlement upgrading through improved urban governance 177
10.1.2 Adopting flexible and participatory urban planning approaches and standards 177
10.1.3 Community involvement 178
10.1.4 Ensure access to resources and tenure security for the urban poor 179
10.1.5 Strengthening institutional arrangements 181
10.1.6 Harmonising policy and legislation arrangements 181
10.1.7 Enhancing city economy and financial allocation 182
10.1.8 Database and information flow 182
10.1.9 Awareness raising among actors 182
10.1.10 Cost recovery, sharing, and commitment 183
10.1.11 Political commitment and support 183
10.2 Implementation of the findings and their limitations 183
10.3 Conclusions 186
REFERENCES 189
DEFINITION OF TERMS 198
APPENDIX 200

ACKNOWLEDGEMENTS

It would have been impossible to realise this work without the profound expertise of many who contributed material and moral support. Special thanks are due to my supervisors Prof. Dr. Axel Drescher (Freiburg University) and the late Prof. Dr. Bituro Majani (University of Dar Es Salaam-UCLAS Campus) for accepting my idea and introducing me to this challenging area of research in urban development processes. Their patience, scientific counseling, enthusiasm, friendship, encouragement, senses of humour, humble nature, and simplicity were my best sources of support and progress. I thank Prof. Dr. Axel Drescher for reading my numerous revisions and for helping me make sense of the confusion. He deserves more thanks for supporting me throughout my research and stay in Germany, attending conferences and for communicating with DAAD for financial support.

I also received tremendous moral and scientific support from Stefan Dongus a fellow PhD student at Freiburg University. I first met him at University of Dar Es Salaam (UCLAS Campus) in March, 2005, and then made a remarkable step towards visiting Freiburg and meeting with Prof. Dr. Axel Drescher. It is during this period when Prof. Dr. Axel Drescher helped me gain admission into the Faculty of Forestry and Environmental Sciences Graduate Programme. More thanks to Stefan Dongus to assist in writing a letter in German for the application to the programme.

I wish to express my sincere thanks to the Head of Department of Physical Geography, Prof. Dr. Rüdiger Glaser of Freiburg University for warm welcome, and for allowing me to use the available facilities for the whole period of my study while in Germany. I also thank him for accepting to review my work. In-depth thanks go to other administrative, research, and teaching staff including Ms. Angelika Schuler and Susana Ginés (Secretaries) for their assistance. Others include Dr. Conny Pfeiffer, Nills Revermann and Dr.Elke Ecker. Special thanks to Mr. Philip Weckenbrock and Stefan Dongus for teaching me the German culture and life style, discussing my thesis, and reading some of my chapters. Klaus, D. Lickert deserve more thanks for sparing his valuable time for redrawing some figures and improving pictures. Likewise, Sussan Grimm deserves special thanks for her support.

Special thanks go to Prof. Suleiman Chambo, The Principal of Moshi University College of Cooperatives and Business Studies, Dr. Faustine Bee-Deputy Principal Academics, academic and administrative staffs for their moral and material support. Dr. Joachim Msaki, The Principal of Mwenge University College of Education (MWUCE), A constituent College of St. Augustine University of Tanzania (SAUT) and Fr. Eugene Lyamtane, by then was a Deputy Principal Planning and Administration deserves more thanks for their support and encouragement during this study. Likely, Prof. Dr. Wilbard Kombe of UCLAS (now called Ardhi University) and Prof. Manoris Victor Meshack-Vice Chancellor of St.John University of Tanzania by then was a Deputy Principal Academic Affairs at UCLAS deserve more thanks. Their supervision on my Master and Bachelor Degrees at UCLAS respectively contributed to have substantial skills in meeting this academic challenge.

Substantial thanks go to Israeli Simba (My uncle), Dr. Fred Lerise, my former Lecturer and Mama Mwangomango-A Secretary at the Institute of Human Settlements Studies both of UCLAS. Their encouraging words and careful thinking in problem solving were motivation for my progress in an academic endeavour. It is from their words when I realised that *'Education is Power'* and with self discipline and hard work it is possible to achieve. Prof. Dr.Washington Olima of Nairobi University and Prof. Mary Onyango of Maseno University in Kenya deserve special thanks for their moral support and for helping to read my thesis and pointing out dull areas to improve.

My sincere gratitude goes to Ubungo Darajani, Goba and Chang'ombe 'A' communities for accepting and becoming involved in this research work. Their contribution and suggestion in fieldwork activities depict the local development realities that urban managers and other decision makers may have to consider and make good judgment to improve urban land governance in Tanzania. I thank them a lot for sparing their valuable time to answer a long questionnaire imposed on them.

Special thanks go to Local and Central Government officials and development partners for enriching this study during study setting and subsequent field data collection. These include Neema Bunango, Julius Maira, Gombo Samandito Gombo, Damas Mapunda, Anna Tesha, Mama Kimoi, Ms Mwakalinga and Pius Mtechura. Similarly, many thanks go to the field researchers for helping in data collection and bringing some missing information while writing this thesis in Germany. These include Ernest Lucas Hiza, Isakwi Bwanikira, Matona Magana, Gombo Samandito, Beatus Mayunga and Giliad Minja. Their support, fruitful discussions and the nice time we spent together and also for their friendship and hospitality are exemplars and highly appreciated. Mr. Beatus Mayunga deserves more thanks for his intellectual capability in comics design during fieldwork, which enriched the study context and findings. He deserves more thanks for sparing his valuable time for the artist.

Much need assistance and encouragement from members of the entire family. I am especially grateful to my beloved father-Mzee Magigi Maseka who passed away on 11th/05/2006 as well as my elder brother Warioba Wakuru on 18th /10/2007 while I was in data collection and writing phases for this thesis respectively. It was a difficult time, but ***'God'*** made it and let them rest in *eternal peace-Amen*. Many thanks go to my beloved mother, Wase Lucia Magigi who always needs my support, but I missed while away for fieldwork survey and consulting people for this work in Dar Es Salaam.

Special thanks to my dear wife-Eva John, whose encouragement has been a tremendous source of support in my life. Similarly more thanks go to my children namely Maseka, Magigi, Johnson and my beloved daughter Zenansia. They have been missing me too much and always were asking their mother "where is our father". I would like to thank them for being patient and living in hardship in the time while I was away. Special thanks go also to my family friend Dr.Paulo Maweu-A Senior Lecturer at St. John University of Tanzania for helping my family while away.

Without financial support, nothing could have been happening on my side. I wish to express my sincere gratitude and thanks to Deutscher Akademischer Austausch Dienst (DAAD)-Germany Academic Exchange Service for sponsoring my PhD Study. The knowledge acquired in this programme contributed tremendously to my understanding of the subject matter. Thanks a lot.

Indeed the period studied for this high degree course at the University, I come to realise that Freiburg is not only a place for academic excellence, but a symbol of unity to live, a place for exchange of ideas and socialising with national and international students. Freiburg is now a second home to make thanks to the wonderful friends I have encountered. Above all, I thank the Almighty ***'God'*** who provides me with the day-to-day strength needed to pursue the difficult and turbulent route of academics.

ABSTRACT

This study examines spatial land use planning and urban agriculture practises in Dar Es Salaam, Tanzania, one of the rapidly urbanising cities in Sub-Saharan Africa. It demonstrates how urban agriculture livelihood can be integrated in spatial land use planning and improve urban land governance by taking Goba, Chango'mbe 'A' and Ubungo Darajani as case study settlements. Location and periurban typology are theoretical premises used in this study. These help in understanding the policy and practical premises that constrain urban agriculture livelihood integration in urban land use planning processes and land management principles. Methodological aspects deployed are documentary search, interviews, mapping, observations, and historical trends analysis. In addition, context, evidence based and institutional links are analytical frameworks used.

The study shows that the urbanisation processes, urban poverty, food insecurity and inadequate community involvement in land use planning are the factors underpinning and catalysing changes in land use, land transactions, immigration and overall urban agriculture proliferation in the city. The implications generated by these factors suggest that poor urban land governance is not only the cause, but it is caused by the weakness of planning institutions to realise and adapt to the new challenges that urban agriculture presents to urban land development process. Correspondingly, the rise of urban agricultural land use by and large, indicates a disparity between the widely cherished planning norms and standards underpinning formal land use planning processes and structures in urban development. These include land use zoning, location, land use change conditions, density distribution, accessibility to resources, land tenure modalities, and equitable provision of basic services in ensuring sustainable use of urban land. Equally, the study indicates the existence of supportive city land development policies and country legislature for urban agriculture, which are in practise faced with health, sanitation and economic return constraints. These constraints increase urban agriculture's negative perceptions to consumers and decrease acceptance in spatial land use planning processes and output implementation. However, urban agriculture has been observed to make productive use of undeveloped land, green the city, provide income and nutrition, and is often a safety-net function for the poorest sectors of society. As such, it is an important vehicle for poverty alleviation, capital mobilisation, and sustainable use of land.

The study argues that for an unforeseeable future, the growth of the urban agriculture sector is likely to remain an indispensable reality depicting urban land development in rapidly urbanising cities in Sub-Saharan Africa. Inclusion of urban agriculture based livelihoods in spatial land use planning processes and structures, including decision making, preparation, implementation and monitoring are observed rationale for improving the livelihoods of the urban poor-smallholder farmers and space use. This can be achieved through, but not limited to, adopting participatory urban planning approaches, settlement upgrading, institutional collaborations, decentralising roles to the local level and strengthening smallholder organization through institutionalisation and giving them a voice platform in the political dialogue. These options can be effective if the government is able to enforce and review policy and legislatures in place and if different actors are involved in the decision making processes, and if information and communication awareness is established. Other improvement include the use of treated wastewater technology for farming, granting long term tenure security, improving accessibility to resources, and adopting flexible planning standards. The study concludes that urban planners and policy makers have little choice but to ensconce and consolidate emerging forms of urban agriculture based livelihoods within land use planning practises and within a guided planning framework. If urban agriculture forms are not guided, then the negative effects, in the long run can undermine the livelihood of the urban poor and degrade the environment. Thus, there is an urgent need to guide the processes, strengthen institutional structures and linkages in land use planning practises, and consider local communities priorities when working to improve urban land governance in Tanzania.

ZUSAMMENFASSUNG

Diese Studie befasst sich mit Aspekten der Raumplanung und der städtischer Landwirtschaft in Dar Es Salaam, Tansania, einer der rasant anwachsenden Regionen Afrikas südlich der Sahara. Die Studie zeigt anhand der Untersuchungsregionen Goba, Chango'mbe „A" und Ubungo Darajani, in welcher Weise städtische Landwirtschaft mit dem Ziel die städtische Raumplanung zu verbessern in diese integriert werden kann. Lage und periurbane Typologie der Gebiete bilden die theoretischen Grundlagen der Studie, was die Politik und praktische Voraussetzungen besser verstehen lässt, welche die Integration der von städtischer Landwirtschaft abhängigen Existenzen in städtische Raumplanungs- und Landentwicklungsprozesse hemmt. Angewandte methodologische Aspekte sind Literaturrecharge, Interviews, Kartenanalyse, Beobachtungen und die Analyse historischer Entwicklungstrends. Kontext, empirische Forschungsgrundlage und institutionale Vernetzungen wurden als analytischer Rahmen herangezogen.

Die Arbeit zeigt, dass Urbanisierungsprozesse, städtische Armut, Nahrungsunsicherheit und unzureichende Beteiligung der Gemeinden an der Raumplanung verstärkende und katalysierende Faktoren von Landnutzungsproblemen, Landumnutzung, Immigration und der Zunahme von städtischer Landwirtschaft sind. Dies lässt annehmen, dass die mangelnde Verwaltung staedtischen Landes nicht als einziger Verursacher der Probleme gesehen werden darf, sondern ebenso die Versäumnisse seitens Planungseinrichtungen, Veränderungen rechtzeitig zu erkennen und die Planung an diese neuen Herausforderungen, die die städtische Landwirtschaft in den Prozessen der städtischen Raumplanung darstellt, anzupassen. Dementsprechend zeigt die steigende Zahl der mit städtischer Landwirtschaft genutzten Flächen Unstimmigkeiten mit den Planungsrichtlinien. Ein Standard würde äußerliche Landnutzungsplanungsprozesse und Strukturen der städtischen Entwicklung bestärken. Diese beinhalten Zonenbildung, Lage, Änderungen in der Landnutzung, Dichteverteilung, Zugang zu Ressourcen, Pachtverhältnisse und gerechte Verteilung grundlegender Leistungen um eine nachhaltige Nutzung von städtischem Land zu gewährleisten. Die Studie weist ebenso auf die bestehende städtische Landentwicklungspolitik und Landesgesetzgebung für städtische Landwirtschaft hin, die jedoch in der Praxis mit gesundheitlichen, sanitären und ökonomischen Rückläufen konfrontiert sind. Diese Probleme machen sich in der wachsenden städtischen Landwirtschaft mit negativen Vorstellungen der Kunden, mangelnder Akzeptanz räumlicher Landnutzungsplanungsprozesse und seiner Durchführung bemerkbar. Der Sektor macht produktiven Nutzen von unerschlossenem Land, Grüngürtel der Stadt sichern Einkommen, Ernährung und stellen oft Sicherheitsnetzfunktionen für die Ärmsten der Gesellschaft dar. Beispielsweise ist städtische Landwirtschaft ein wichtiger Ansatz zur Minderung städtischer Armut, Mobilisierung des Sozialkapitals und nachhaltigen Landnutzung.

Die Studie führt auf, dass in Zukunft das Wachsen des städtischen Landwirtschaftsektors vorrausichtlich eine unerlässliche Realität in der städtische Raumnutzung der schnell wachsenden Städten südlich der Sahara bleibt. Eine Aufnahme der von städtischer Landwirtschaft abhängiger Existenzen in die Landnutzungsprozesse und Entscheidungsstrukturen durch Bereitstellung, Anwendung und Überwachung wird für die Verbesserung des Lebensumfeldes der armen, städtischen Kleinbauern als notwendig betrachtet. Dies kann durch die Aufnahme betreffender Ziele städtischer Planung, Aufwertung der Siedlungen, institutionale Zusammenarbeit und der Dezentralisierung der Rollen auf ein lokales Level erreicht werden. Diese Möglichkeiten können dann effektiv sein, wenn sich die Regierung bemühen würde, Politik und Gesetzgebung an Ort und Stelle durchzuführen und alles zu überprüfen, indem unterschiedliche Akeure im den Entscheidungsprozess miteinbezogen werden und dadurch das Bewusstsein von Informationen und Kommunikation verbessert wird. Teilweise wird die Nutzung von Abwassertechnologie in die Landwirtschaft miteinbezogen, welche auf lange Zeit betrachtet Sicherheit und Zugang garantiert

und flexible Planungsstandards vorgibt. Die Studie schließt mit dem Aufzeigen der geringen Wahlmöglichkeit der Stadtplaner und Entscheidungsträger, die zukünftige Form der städtischen Landwirtschaft auf anderem Wege als in Form der Landnutzungspraxis in einem angeleiteten Planungsrahmen zu gestalten und zu verfestigen. Wenn die städtischen Landwirtschaftsformen nicht angeleitet werden, untergraben die negativen Langzeiteffekte die Existenzen der armen Stadtbevölkerung und die Umweltqualität. Es besteht die dringende Notwendigkeit, die Prozesse zu leiten und die institutionalen Strukturen und Verbindungen der Raumplanungspraktiken zu stärken, die lokalen Gemeinden als primäres Arbeitsfeld zu betrachten, um die Verwaltung staedtischen Landes in Tansania zu verbessern.

LIST OF FIGURES

Pg

Figure 1.1 Research methodological approach. 5
Figure 2.1 Ebenezer Howard concept of inclusion of agriculture in city setting. 13
Figure 3.1 Combined theoretical framework. 42
Figure 3.2 Conceptual framework. 46
Figure 3.3 Analytical framework. 47
Figure 4.1 Data collection triangle. 64
Figure 5.1 Contextual analysis of ongoing activities and potential conflicts. 69
Figure 5.2 Policy making processes. 73
Figure 5.3 Factors influencing policy making processes. 74
Figure 5.4 Land use planning processes. 75
Figure 5.5 Household occupation status the case of Chang'ombe 'A'settlement…….. 79
Figure 5.6 Neighborhood tribe composition in Chang'ombe 'A' settlement for 2007. 81
Figure 5.7 Household occupation status the case of Ubungo Darajani. 83
Figure 5.8 Ethic groups and composition. 85
Figure 5.9 Settlement housing occupation status in Goba settlement. 87
Figure 6.1 Extraction of Goba land use plan. 95
Figure 6.2 Extraction of Chang'ombe 'A' land use plan. 97
Figure 6.3 Extraction of Ubungo Darajani land use plan. 98
Figure 6.4 Part of Cadastral survey for Ubungo Darajani settlement. 102
Figure 6.5 Tenure modalities in the case study settlements. 107
Figure 6.6 Settlement growth processes and possibility of integrating urban agriculture based livelihood; Map-2006 110
Figure 7.1 Crops grown in the case study areas. 117
Figure 7.2 Extent of animal farming in the study settlements. 118
Figure 7.3 Informal land transfer and parceling in the case study settlements. 127
Figure 7.4 Weak Ministries functional linkages, which have implications on the future sustainability of urban land and the urban poor. 137
Figure 8.1 Planning institutions and decision making levels. 153
Figure 10.1 Planning framework for reconciling formal and practical spatial land use planning processes towards inclusion of urban agriculture in urban planning. 180
Figure 10.2 Partnership creation is needed among actors for effective urban agriculture integration in land use planning practise. 185

LIST OF TABLES

Pg

Table 2.1 Informal settlements population projection, 1990-2020 in Sub-Saharan Africa region.....9
Table 2.2 Tanzania-Urbanization trends, 1948-2002 9
Table 2.3 Integration of urban agriculture through various planning instruments 18
Table 2.4 Accessing land for urban agriculture in Kampala 33
Table 2.5 Legislative framework for urban agriculture in Zimbabwe.....33
Table 2.6 Building food-secure neighbourhoods, the role of allotment gardens.....34
Table 2.7 Integration of urban agriculture into urban planning- the case of Dar Es Salaam 34
Table 3.1 Dimension of sustainability of urban agriculture 44
Table 3.2 Questions guiding the analytical framework formulated 48
Table 4.1 Sampling frame and population.....52
Table 4.2 List of respondents.....54
Table 4.3 Ranking and study selection 57
Table 5.1 Departmental roles allied with land use planning and urban agriculture practise 70
Table 6.1 Landholders contribution in cash during land use planning phase.....99
Table 6.2 Landholders contribution in cash during cadastral survey phase 103
Table 6.3 Summary of planning standards 109
Table 6.4 Minimum plot coverage.....109
Table 6.5 Trends and frequency of meetings for effective land governance.....111
Table 7.1 Social characteristics and migration trends of case study areas 124
Table 7.2 Land prices in the case study settlements 128
Table 7.3 Market managers response on the quantity of vegetable per day in the city.....130
Table 7.4 Earning from smallholder farmers in the case study settlements per month.....132
Table 7.5 Summary of health risks associated with the use of wastewater for irrigation 133
Table 7.6 Planning institutions responses in coordinating urban agriculture.....136
Table 7.7 SWOTs results as an indication framework for urban agriculture integration in spatial land use planning practise.....141
Table 8.1 Policy and legal setting and how integrated urban agriculture.....145
Table 8.2 Locations of urban farming activities in the case study areas 154
Table 8.3 Distance of smallholder farmers to market premises 156
Table 8.4 Chronological documentation of housing density in case study areas 158

LIST OF MAPS

Pg

Map 2.1 Dar Es Salaam-Tanzania in Sub-Saharan Africa context 10
Map 4.1 Dar Es Salaam City-Extent of land development and case study settlements..... 53
Map 5.1 Spatial growth of Dar Es Salaam city (1992-2007)..... 68
Map 5.2 Chang'ombe 'A' Settlement-Extent of spatial and urban agriculture development..... 78
Map 5.3 Ubungo Darajani Settlement-Extent of spatial and urban agriculture development 84
Map 5.4 Goba settlement-Extent of spatial and urban agriculture development..... 88

LIST OF PLATES

Pg

Plate 2.1 Author's visit in the Allotment Gardens: Photo, October 2005 by Axel Drescher. 32
Plate 5.1 Domestic stress on the use of water in Chang'ombe 'A' settlement: Photo, January 2006. 79
Plate 5.2 Illegal water connection in Chang'ombe 'A': Photo, February 2007. 80
Plate 5.3 Deep and shallow wells in the settlement: Photo, January 2007. 80
Plate 5.4 Demolition of structures and urban agriculture lots on road reserves and harassment to smallholder farmers in road strips areas are common: Photos, January 2006 at Ubungo Darajani.....82
Plate 5.5 Deep and shallow wells in the settlement: Photo, January 2007. 84
Plate 5.6 Housing and periurban agriculture development in Goba settlement: Photo, December 2006 88
Plate 5.7 Bean cultivation in Goba: Photo, January 2007…...……..……...……....90
Plate 5.8 Sunflower cultivation in Goba: Photo, January 2007….…….……..90
Plate 5.9 Tomato cultivation in Goba: Photo, January 2007…….…….……..90
Plate 5.10 Pineapple cultivation in Goba: Photo, January 2007……...……...…...90
Plate 5.11 Bean cultivation in plots at Ubungo Darajani: Photo, January 2007…….…….90
Plate 5.12 Tree and flower growing are common at city center-Samora Avenue: Photo, January. 2007……...……..…..…....90
Plate 7.1 Zero grazing type of livestock farming at Ubungo Darajani: Photo, March 2007. 119
Plate 7.2 Pig husbandry at Ubungo Darajani: Photo, February 2007. 120
Plate 7.3 Poultry and Guinea pigs in Changombe'A' are common: Photo, February 2007. 121
Plate 7.4 Vegetables cultivated at different intervals in Ubungo Darajani: Photo, January 2007.....122
Plate 7.5 Smallholder farmer with his working gears in Mbezi river in Goba valleys: Photo, February 2007. 123
Plate 7.6 Smallholder farmer washing his amaranths ready to sell in streets of Ubungo Darajani-Mabibo. 124
Plate 7.7 Amaranth cultivation along industrial premises in Chang'ombe 'A': Photo, January 2006. 125
Plate 7.8 Amaraths harvesting at Ubungo Darajani. Photo, March 2006. 129
Plate 7.9 Women selling vegetables along street at Ubungo Darajani: Photo, March 2006. 129
Plate 7.10 Mabibo River-One of the sources of water for gardening: Photo, March 2007. 138
Plate 8.1 Haphazard dumping of solid waste in Ubungo Darajani: Photo, January 2006. 155

LIST OF ACRONOMYS

CBD	Central Business District
CBOs	Community Based Organisations
CIUP	Community Infrastructure Upgrading Programme
CLDC	Community Land Development Committee
DAWASA	Dar Es Salaam Water and Sanitation Association
DDD	District Development Director
EPM	Environmental Planning and Management
GIS	Geographical Information Systems
MLHSD	Ministry of Lands and Human Settlements Development
MFC	Municipal Full Council
NGOs	Non-Governmental Organisations
NHC	National Housing Cooperation
NMB	National Microfinance Bank
NSGPR	National Strategy for Growth and Poverty Reduction
SACCOS	Savings and Credit Co-Operative Societies
SUA	Sokoine University of Agriculture
TANESCO	Tanzania Energy Supply Company
TFNC	Tanzania Food and Nutrition Centre
TShs	Tanzania Shillings
TIC	Tanzania Investment Centre
TPD	Town Planning Drawing
UA	Urban Agriculture
UCLAS	University College of Lands and Architectural Studies
UDASEDA	Ubungo Darajani Settlement Development Association
UDSM	University of Dar Es Salaam
UNDP	United Nations Development Programme
UPC	Urban Planning Committee
URT	United Republic of Tanzania
USD	American Dollar
VEO	Village Executive Officer
WEO	Ward Executive Officer

PART I: STUDY SETTING AND THE STATE OF THE ART

CHAPTER ONE: BACKGROUND OF THE STUDY

1.1 Introduction

In developing countries, particularly in Sub-Saharan Africa, policy and legislative environments seem to be poorly updated, reviewed and enforced and this places urban agriculture based livelihoods and land use planning integrations in a dilemma. Amos (1986:135) and Kombe 2002 in Kreibich *et al*, (2002:97) note that formal policies, legislations and urban planning approaches are inappropriate and inefficient in the region. The authors show that this has led to inappropriate and inflexible administrative procedures regarding appropriate land tenure and land use development. This seems to demonstrate that inflexible legal instruments regulating urban land development, including urban agriculture, have little practical relevance to the prevailing socio-economic realities of everyday living. For example, such instruments may frustrate local community norms and procedures guiding and controlling land development in local areas and prevent them from enjoying respect and getting the support of governments, both local and central (Magigi *et al.*, 2006:1068).

Underscoring the need for the review of the policies and legislative environment related to land use functions in urban land development, different arguments are put forward. Clarke (1994), Topfer (2002:3) and Mabounje (1992; 2000) note that, the various urban planning legislation in Sub-Saharan Africa put in place to promote urban development, have been haphazard and disjointed. As a result, spaces set aside for urban agriculture land use, continues to decline, disappear and be encroached upon. Similarly, land use planning processes and outputs (i.e. land use plans) rarely put in place conditions, standards, and mechanisms to coordinate and control urban agriculture and its promotion in urban areas. This shows there are inadequate land development coordination and control mechanisms in place in Sub-Saharan African cities. This also indicates the increasing marginalisation of the sector in urban land development and management in the context of rapidly urbanisation processes in African cities despite its relevance in food security, environmental conservation, and poverty reduction.

A recent UNDP (2006:23) report shows that by the year 2025, sixty-one per cent of the world's population will be living in urban areas. Many African and Asian cities have urban growth rates set to double their population in less than twenty years. Kampala (5.2%), Addis Ababa (5.2%), Nairobi, and Conakry (4.3%) are some examples. In addition, people will be living close to or even below the poverty line[1]. How to adequately feed this rapidly expanding urban population and maintain the urban environment in urban and periurban settings in order to satisfy urban demand is a challenge. One wonders if can urban agriculture help to recover the gap when properly instituted in urban setting or will it enhance environmental degradation, health risks, and pressure on resource use? This question is a dilemma and shows the need for finding appropriate ways of managing cities through urban planning and ensuring food security for sustainable development in African cities faced with high demographic transition.

Urbanisation is a process accompanied with demographic transition and economic expansion of cities. The process includes migration and industrialization that tends to influence spatial city expansion, and increases demand of land for housing, investment and food. The expansion of the city engulfs rural

[1] *According to World Bank (2006), the benchmark is living by spending less than 1U$ per day.*

land mainly used for agriculture based livelihoods. These rural areas, which earlier were distant from the city, subsequently fall within the city's band of influence. Typically, this increases interaction with and access to the city economy, in terms of capital, labour, public and private goods, and services. This interaction subsequently triggers the transformation of rural areas to periurban areas and, causes both horizontally and vertically growth patterns. In addition, land tenure modalities and people's life style are also changing and institutional conflicts appears to increase as the city band of influence expands.

The growth pattern also increases demand for space for urban investment and determines the forms, scale and location of urban agriculture livelihoods. Management of this demand is important in urban settings in order to enhance land use and reduces conflict, but land use plans that guide land development rarely consider this. This increases illegal settling and construction habits and results in informal settlements and increased housing density. One wonders, are the governments in Sub-Saharan Africa too inefficient to coordinate and control this development? This question remains unanswered in urban planning practices affecting urban agriculture and highlighting the needs for improved urban land governance in African cities including Dar Es Salaam.

Urban land governance aims at creating habitable food sufficient cities with minimal environmental degradation, minimum health hazards, and expanding economics. Urban land governance also ensures land administration and management is properly coordinated through a decentralised system and shares short and long terms visions. Ensminger (2000:183) shows that building negotiating capacities among local institutions is necessary because it leads to more political and economic clout and taps unexpected social capital. Dorward *et al,* (2003:319) accentuate that long-term planning, may well lie with making institutions and institutional interfaces more friendly and by building on their existing local-level legitimacy. Contributions of Mougeot (2005:20,31) and Jacobi *et al, (*2000:283) show that controlled planning and functioning in an institutional sector is essential for improving lives of the urban poor. Particularly, it ensures soil management and improves crop productivity to enhance food availability in the city. Drescher *et al.,*(2006:317) show that the urban poor's access to food, marketing for their product, and distribution patterns in cities, is of prime importance for understanding city growth and development processes.

Consequently, spatial land use planning processes, structures, and output implementation are essential for improving urban land governance. This planning process needs to be coordinated, ensuring and tapping resource bases available for smallholder farmers. This is particularly important during the project's initiation and planning, decision-making, implementation and monitoring stages in order to enhance city productivity. This also suggests ways in which the forms of urban agriculture can be put into production with minimal negative impacts on urban land productivity. Access to marketing information, distribution, and the link between smallholder farmer and consumers is of prime importance to achieve the aims of urban land productivity. Likewise, there is a need for strengthening institutions dealing with land use planning and urban agriculture practices. The central question to be asked in this context therefore is, despite the existence of urban agriculture activities within Sub-Saharan African cities, have policy and planning institutions[2] in practise accepted and integrated into processes and structures? And if accepted or not accepted into policy and planning institutions processes and structures, what are the influencing factors and future implications for urban land

[2] *Refers to institutions responsible for initiating, preparing, implementing and monitoring urban land use plans. These include landholders, tenants, civil society organisation, pressure groups, private sector, media groups, utility agencies, higher learning institutions, local and central government, and development partners interested in and with stakes in urban growth and land development processes.*

development? The two questions stated form a basis for the study investigation towards understanding the reality of current spatial land use planning and urban agriculture based livelihoods practises in Dar Es- Salaam, Tanzania.

1.2 Statement of the research problem

Urban agriculture in world cities is not a new phenomenon and is today a current issue to be considered as an integral part of urban land management (Friedmann, 1987:47; Lynch, 1990:536; Drescher, *et al*., 2000; Drescher, 2003). Its scale and magnitude in providing food for the majority of urban residents, employment alternatives to a decreasing employment in the formal sector, environmental conservation, and ongoing civil service reforms in Tanzania and other Sub-Saharan Africa countries is supra. In only a few cases urban agriculture seems proved to have been integrated into policy making, and in urban planning and management practises in developing countries, including Tanzania (Mitlin and Satterthwaite, 1996:23 and Bakker *et al*, eds, 2000). Despite its importance as a major food provider sector, employment generator and its importance in sustaining livelihood for the urban poor and for environmental resources, urban agriculture practice seems hardly integrated in land use planning proceses and structures. Why? This study contributes knowledge towards understanding spatial land use planning and urban agriculture practises, forms, their influencing factors, implications, and options for their integration in Dar Es Salaam. The aim is to improve policy and practical gaps in urban growth and development processes in regards to food security, poverty reduction and planning processes and redress urbanisation impacts for improved urban land governance in Sub-Saharan Africa developing cities.

1.3 Research hypothesis, objectives and questions

This research is guided with three main hypotheses:

- Spatial land use planning processes and structures, if continued unchecked, can constrain their implementation or urban agriculture based livelihoods and urban settlements degradation
- The struggle put by smallholder farmers and the urban poor to enhance their urban agriculture based livelihoods in urban and periurban areas in the city underpin ongoing urbanisation impacts, urban poverty and food insecurity in urban growth and development processes
- The unorganised implementation of urban agriculture based livelihoods can, in the long run, undermine sustainable land use and subsequently affect urban land governance.

Based on the above hypothesis, five main research objectives underpin this study:

- Examining spatial land use planning processes and structures adopted by different planning institutions in urban and periurban settlements in Dar Es Salaam.
- Exploring forms of urban agriculture based livelihoods in general and in particular (i.e. amaranths production), and its impacts on urban and periurban settlements in Dar Es Salaam.
- Find out factors influencing the integration of urban agriculture based livelihoods in spatial land use planning practise in Dar Es Salaam.
- Examining the implications of unguided spatial land use planning processes and urban agriculture livelihoods practise to smallholder farmers and future urban land development in Dar Es Salaam.
- Developing options for integrating urban agriculture based livelihood in spatial land use planning practises for improved urban land governance in Dar Es Salaam.

Towards meeting the aforementioned hypotheses and objective, the major questions are:

- How do the spatial land use planning processes and structures adopted by different planning institutions govern urban and periurban land development in Dar Es Salaam?
- What forms of urban agriculture based livelihoods exist in Dar Es Salaam and what are its impacts in general and in specific context (i.e amaraths production)?
- What are the factors influencing the integration of urban agriculture based livelihoods in spatial land use planning practises in Dar Es Salaam?
- What are the implications of unguided spatial land use planning processes and urban agriculture livelihood practises to smallholder farmers and to the future urban land development in Dar Es Salaam?
- How can spatial land use planning and urban agriculture based livelihood practises be integrated for improved urban land governance in urban and periurban of Dar Es Salaam City?

1.4 Research methodological approach

The idea for this study was developed following the author's observation of the harassment of the smallholder farmers as a resident and Urban Planner in Dar Es Salaam. This situation triggered the need for invention of how best urban farmers in the city of Dar Es Salaam can be accommodated in urban planning and management systems. The observation also demands understanding of future land development projections for the city and determination of the fate of the urban poor. Can proper land management improve their livelihoods and subsequently strengthen urban land governance in the city? From these observations and question a topic was formulated. Subsequently literature review was done the field visits of various sites in the city completed. Equally, analysis of spatial development of the city and factors triggering its growth and land development were documented. The research problem, objectives, research questions and hypotheses were developed to guide the investigations. Preliminary visits of the proposed nine settlements, informal interviews with smallholder farmers and local leaders (Ward, Sub ward and Ten cell), and ranking of the case settlements were developed. The preliminary investigation helped introduce the study to different stakeholders involved in land use planning and urban agriculture practise. It is in this stage where contacts and awareness of the project was established with various city stakeholders. The extent of the urban agriculture problem was confirmed and the identification of potential candidates for subsequent activities was done.

After establishing the candidates (households) involved in urban agriculture production and land use planning, research instruments were prepared and pre-tested. It is in this phase improvement of the questionnaire was done. Similarly, the numbers of respondents involved during the preliminary interview (40 respondents) also were considered during analysis as they provided vital data for consideration. The literature and theoretical framework was reviewed throughout. This helped to develop the conceptual framework and subsequent analytical framework, with the reviewed literature, to guide the study conduct. Analysis of the existing situation through fieldwork was completed and development of integration requirements and options was developed through other data analysis tools. In conclusion, developed participatory land use planning processes, optimal conditions and potential actors to achieve the integration implementation in theory and practise on the ground was established. The cycle of processes and practise help to compare policy requirements in theory and the reality of implementing the suggested options in the case study using empirical investigation and analysis. However, following this protocol, planning and policy implications, conclusions and recommendations were drawn and are represented in text format. The summarised research processes are represented in Figure 1.1.

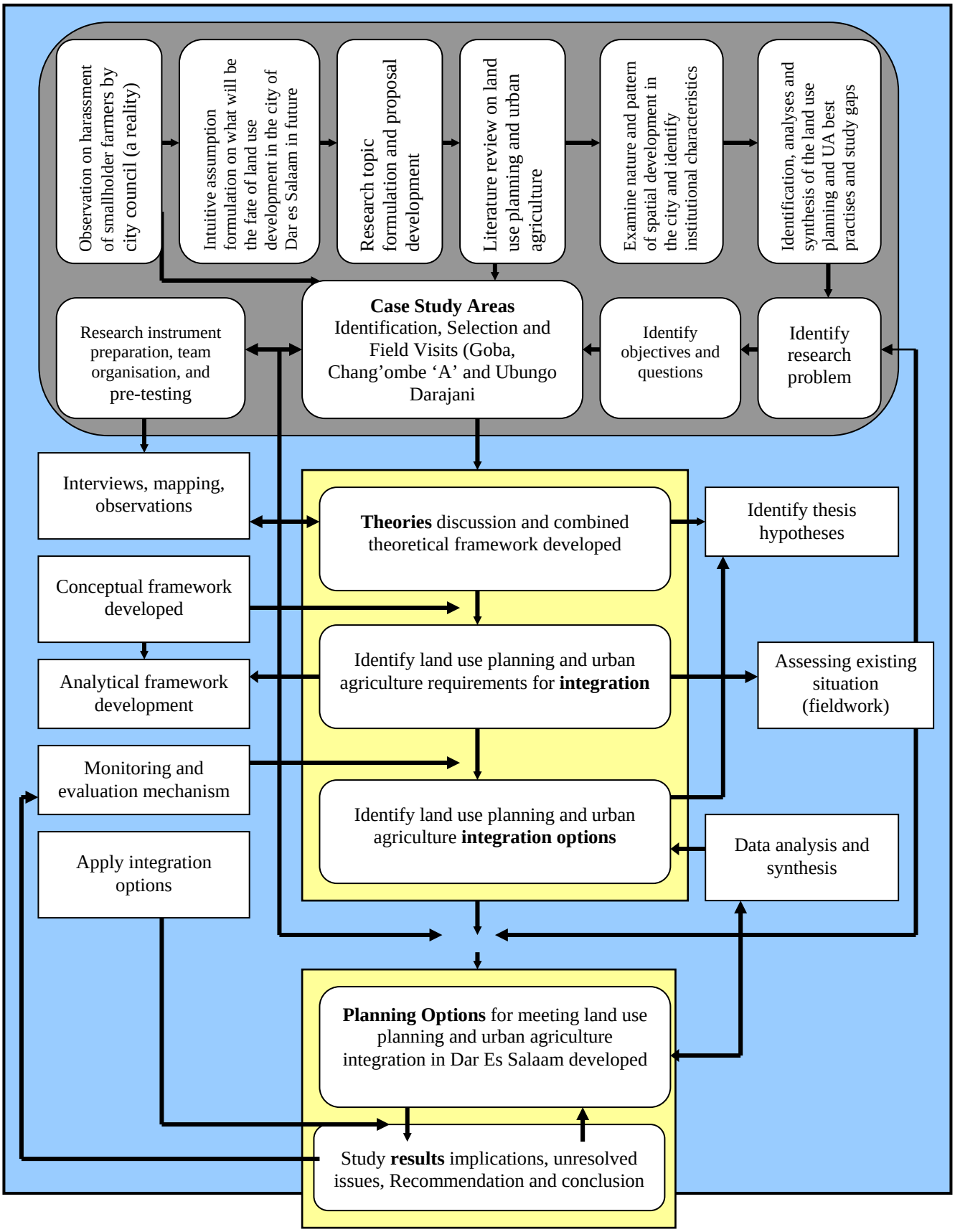


Figure 1.1 Research methodological approach.

1.5 Research contributions and thesis structure

This thesis addresses how urban agriculture based livelihoods can be integrated in spatial land use planning, specifically, in urban and periurban environments. The study establishes the need for long term thinking towards improved urban land governance within the scope of food security, urban growth, urbanization, and land use planning approaches in Sub-Saharan Africa. It helps to contribute to the understanding of urban planning and management policies, institutions and practical gaps for improvement in city growth and development processes. Towards contributing to this evolving knowledge on land use planning and urban agriculture processes, structures and resource use was explored. Influencing factors, constraints and threats, including that of access to land and information, process and institutional links were examined. Other variables explored include, form and processes in land allocation, transaction, subdivisions, change of use, tenure modalities and attributes of actors and their roles. These variables explored and the cases documented are connected with land use planning process and outcome implementation and therefore influence urban agriculture setting and structures in urban planning practise. The structures in this context refer to processes in which different actors interested in or affected by policy decision making mandates are involved in planning, decision making, implementation, and monitoring of activities that influence urban land use development. This involvement helps actors to organise their social capital, within organised legal rights and accepted norms. The social capital conceived here includes resources such as funds, assets including inputs such water and land, space use, and links (Figure 3.2) potential for promoting land use planning practise.

Land use planning practises are analysed in terms of understanding land use planning processes[3] and urban agriculture forms, scale, and access to resources (i.e. water, land and services) as study phenomena for improved urban land governance. The analytical framework uses context specific, evidence based information and links of actors in exploring the study phenomena (Figure 3.3). However, policy and decision making in plan preparation, opportunities, and constraining factors were also explored. In addition, types, location, inputs, outputs, cost, and benefits for urban agriculture are discussed. The descriptions and analytical frameworks necessitate the use of policy and legal aspects, periurban typology and location theories in urban planning to explore the case. This research looks beyond the technical and legal issues and analyses the land use planning practises and urban agriculture problem from social, institutional, financial, and political perspectives. The resulting observations have potential for improving urban land governance in Sub-Saharan Africa cities, including Dar Es Salaam.

In addition to land use planning processes, farming location and production trends, taking amaranths production as one form of urban agriculture were explored. Apart from the above mentioned, demographic changes, socio-economic, marketing of the product, and links to various actors were noted. Specifically, exploring amaranths production does not means other forms of urban agriculture were neglected, instead it is intended to gives a distinctive focus to study and lessons leant. Other forms of urban agriculture were documented for generalization. Similarly, land use functional relationships, housing density, plot ratio and coverage, planning standards, conflicts, land market, land delivery, and distribution systems were analysed. These are noted as associated factors influencing land use planning and urban agriculture practice in the overall strategy for improved urban land governance in the city. Thus, this study shows that the urban agriculture contributes to the productive

[3] *It entails plan initiation once a responsible planning authority makes the declaration of planning area. Others stages include, preparation, implementation, monitoring and evaluation of land use plans in urban and periurban setting in the city according to established land development norms.*

use of undeveloped land, greens the city, provides income, nutrition, and often provide a safety-net function for the poorest sectors of society. As such it is an important vehicle for urban poverty alleviation and the sustainable use of land.

In particular, the this research project reflects an urgent need for a new institutional linkage, urban planning approaches, and guidelines appropriate for the purpose of the promotion of urban agriculture based livelihood in spatial land use planning practise. Methodological aspects deployed include, documentary search, interviews, mapping, observations, and historical trends analysis of spatial land use planning and urban agriculture practises. In addition, use the participatory planning guidelines contributed in this study, it was confirmed that an alternative approach in land administration and management, and social capital mobilization for sustainable use of land, which ensures local community involvement in the planning processes. Likewise, this research yields new insights within planning guidelines (Figure 10.1) strategy that governments and other stakeholders may wish to adopt for effective integration of urban agriculture based livelihoods in spatial land use planning processes. The strategy is context specific, but may be applied to other cases of the same context within the goal of balancing the voices of different stakeholders interested in sustainable urban land development in Sub-Sahara Africa. The conclusions suggest a number of options, which can be made to conventional thinking towards improving urban land governance through integrating urban agriculture in land use planning practises in Dar Es Salaam.

The structure of this thesis constitutes four parts consisting ten chapters. Part one discuses the study setting, literature reviews and the state of the art. It entails two chapters, the background of the study and the review of land use planning and urban agriculture development practises and challenges in developed and developing world cities. Equally, reflections are provided at the end of each chapter showing its contribution in the issues investigated. Part two explains theories and methods used in this study context. Two chapters are discussed in this part including theoretical and conceptual framework, and the study methodology and design. Part three centres on empirical findings, discussions, and synthesis. This part consists of four chapters including a study area description and land use planning processes and structures in the case study settlements. Other topics include urban agriculture livelihoods and their impact on the case study settlements. The chapter ends by providing cross case analysis and synthesis. The fourth part centres on summarising the study contributions, implication of the results, unresolved issues around policy agenda and development, options for integration, implementation of the finding and limitations, and concluding remarks. The concluding remarks entail reflections on study results, theoretical relevance, policy, hypothesis and methodological premise deployed. Similarly, the part ends by providing references, definition of terms and a list of appendix.

1.6 Reflections

The discussion on the study setting and state of the art in this chapter shows the importance of land use planning and urban agriculture integrations. It highlights the study phenomena, research contributions, and needs for its exploration, taking Dar Es Salaam as one among the rapidly urbanising cities in Sub-Saharan Africa. With increased and unorganised urbanisation, urban chaos and urban poverty, including food poverty and unemployement is expected expanding in the region. This line of argument demonstrates the need for the holistic integration of urban agriculture in spatial land use planning practises. The next chapter contributes to the understanding of the study context, land use planning by discussing agricultural development in world cities.

CHAPTER TWO: SPATIAL LAND USE PLANNING AND URBAN AGRICULTURE DEVELOPMENT IN CITIES: PRACTISE AND CHALLENGES

2.1 Introduction

The previous chapter discussed the study setting, key issues connected with, and contributions made by this study towards improving urban land governance. This chapter describes and analyses land use planning and urban agriculture practices in developed and developing countries. Specifically, it discusses informal settlement proliferation and population increase as one impact of urbanization processes in Sub-Saharan Africa and its trends, magnitude, and projections. Population trends and food challenges in Tanzania and Dar Es Salaam in particular are highlighted. This chapter also discusses ideal urban land development and urban planning doctrines and land use planning principles and instruments. Other topics include legislative environments, planning institutions, and their roles towards understanding the existing potentials, influencing factors, and copying strategies in theory and practise. Similarly, decision making processes, land use development coordination and control, and the risks and benefits of urban agriculture livelihood practise are explored. In addition, case studies, which attempted to integrate urban agriculture in spatial land use planning practises are presented. The chapter ends by reflecting on the contributions and the gaps investigated in this study.

2.2 Population and informal settlement proliferation in an urbanisation context

Understanding population and settlement development trends in Sub-Saharan Africa is essential in spatial land use planning and for determining the challenges to the sustainable use of urban land in developing cities. It should be noted that spatial land use planning and development projections depend, among other through population growth, resource assessment, and improved urban land governance, and livelihoods of the poor. Paradoxically, informal settlements and the scarcity of land in urban areas seem to be major challenges that may affect food security and urban environmental conservation for coming generations. UN-Habitat (2007:188-200) reports that the magnitude of informal settlements and population worldwide are expanding and therefore seem to be endangering urban land development and agriculture based livelihoods of the urban poor.

UN-Habitat *Ibid* report shows that cities in Sub-Saharan Africa are very affected by uncontrolled urbanisation processes and the poor enforcement of land development policies and legislations. The report stress an urgent need for cities in Sub-Saharan Africa to adopt participatory planning frameworks able to coordinate and control land development. Such a framework will assist coordinating different land use functions, including urban agriculture that can be used to meet the needs of expanding populations and add value to land and goods in order to meet market and food security challenges. Table 2.1 summarises the increasing informal settlements in the region. Tanzania *inter alia*, is noted to be a highly prone country where informal settlements are expanding rapidly. These types of settlements endanger the future food security and may increase settlement degradation if no apt spatial urban land use planning measures and guidelines are put in place to recover.

Table 2.1 Informal settlements population projection, 1990-2020 in Sub-Saharan Africa region

Country	Informal settlement population (Thousand)						Informal settlement population projection target 11 (Thousand)						
	1990	2001	2005	2010	2015	2020	1990	2001	2005	2010	2015	2020	Reduce % by half 1990-2020
Angola	2,193	3,918	4,839	6,300	8,201	10,677	2,193	3,918	4,743	6,077	7,814	10,075	5,412
Congo	1,050	1,852	2,276	2,945	3,810	4,930	1,050	1,852	2,231	2,840	3,629	4,650	2,499
Kenya	3,985	7,605	9,620	12,905	17,311	23,223	3,985	7,605	9,432	12,460	16,522	21,972	11,771
Lesotho	168	337	434	596	817	1,121	168	337	426	576	781	1,062	568
South Africa	8,207	8,376	8,439	8,517	8,597	8,677,	8,207	8,376	8,254	8,147	8,039	7,930	4,398
Uganda	1,806	3,241	4,010	5,231	6,825	8,904	1,804	3,241	3,931	5,047	6,503	8,403	4,513
Tanzania	5,601	11,031	14,113	19,205	26,133	35,561	5,601	11,031	13,840	18,551	24,962	33,685	18,024
Zimbambwe	116	157	179	202	232	266	116	157	172	194	219	247	135

Source*: UN-Habitat, State of the World Cities 2006/7.*

According to a United Republic of Tanzania (URT) census report (2002:5), Tanzanian population has been increasing tremendously since independence in 1961 (Table 2.2: Map 2.1). The report shows that in 2002, the population was 34 million people and with a population growth rate of 2.8% per annum[4]. This indicates that it is among the most rapidly urbanising countries in Sub-Saharan Africa. The urban population of Tanzania is estimated at 30% and increasing at 11% per year with Dar Es Salaam being by far the largest city in the country (Map 2.1). Dar Es Salaam was estimated to have more than 2.8 million inhabitants in 2006 compared with 2.5 million inhabitants in 2002 (URT, 2003; UNDP, 1998; 2006). Spatially, in periurban areas of Dar Es Salaam, the land is sparsely populated and dominated by urban agriculture activities, aimed to provide a food supply to the urbanities compared to the inner zones (Map 4.1; See also chapter five). Thus, understanding food security challenges in Tanzania becomes a necessity in determining urban development processes.

Table 2.2 Tanzania-Urbanization trends, 1948-2002

Year	1948	1957	1967	1978	1988	2002
Total National Population (000)	7,480	8,786	11,959	17,050	22,533	33,584
Total Urban Population (000)	183	364	686	2,260	6,200	10,075
Urban Population as percentage of National Population	2.5	4.1	5.7	13.78	27.6	30
Range in years		1948-1957	1957-1967	1967-1978	1978-1988	1988-002
Growth rate of urban population		6.5	6.0	11.1	9.6	11

Source*: Kulaba S.M. (1986); URT census reports (1978, 1988, and 2002); and UNDP (2006).*

[4] *According to the Minister of Finance and Economic Affairs Honourable Mustafa Haidi Mkulo Budget Speech on 12 June, 2008 (URT, 2008:29), the National population in 2007 was 39,446,061. Among the population 19,352,480 (49%) were men and the rest were women. He shows that the annual growth rate is 2.9 and approximated that by the year 2025, the population expects rising to 63,516,735. This fact appears keeping the need for having proper planning intervention to meet the growth challenge. Particularly, in terms of land use planning and food security which look to be world challenging agenda. These challenges seem to be augmented with unstable country economic growth, inflation rate increase, soaring of the food price and petrol, dependent of external budget to finance development programes and increasing use of starch food for energy production in some industries in developed countries.*

Map 2.1 Dar Es Salaam-Tanzania in Sub-Saharan Africa context

Source: *www.lib.utexas.edu/maps/africa/africa_pol_2007.jpg, accessed on June 2008.*

2.3 Food challenges in Tanzania and the need for increased production

Ngware and Kironde (2000), observe that improving urban food supply, to a level where every urban dweller has access at all times to the food required is important. The authors accentuate that the ability to sustain food supplies in order to feed the urban masses is likely to be one of the major urban development challenges for Tanzania in the coming years. Liviga and Mekacha (1998) explore youth migrations in Tanzania and indicate the location of poverty in Tanzania, especially food insecurity and malnutrition, is increasingly shifting from rural to urban areas[5]. This increases the necessary level of involvement of different actors including the government and the private sector towards feeding the urban masses and maintaining sustainable development in urban development processes.

The need for food security, in the Tanzanian context, can be traced from the food crises eras from 1970-1980's, and to the effects of World Bank Structural Adjustment Programme in the mid 1980's. The entire crisis was earmarked by the Arusha Declaration implementation in the late 60's. During this period, large segments of Tanzania's rural population were persuaded to live in nucleated "*Ujamaa villages*". The main justification for this was to enable these villages to become more agriculturally productive through communal efforts. However, from 1973 to 1975 the nation experienced a widespread severe drought and resulting food shortages. In addition, concurrent global oil crisis created an energy problem and prompted Tanzanians to review their self-reliance strategies (Stren *et al*, 1989; UNDP, 1996 and Wilson, 1997).

[5] *See also a study by the International Food Policy Research Institute, "Living in the City: Challenges and Options for the Urban Poor" IFPRI, Washington, 2002.*

Despite massive importation of food and food aid there was a threat of impending famine throughout the country (Binns *et al*, 1998 and Bryson *et al*, 1993:12). Due to the food crisis every Tanzanian both in rural and urban areas, was exhorted government to increase the efforts in agricultural production. During this time agriculture was described as "A *matter of life and death"* and this time period marks a wave of urban agriculture in Tanzania.

Sawio (1993) in contributing to the understanding of urban food security shows that urban agriculture was practiced in Dar Es Salaam in the pre-colonial as well as in the colonial era. Mlozi *et al*, (1992:284) observe that as the city grew *"a conscious effort was made to develop trade settlement and cultivation in Dar Es Salaam"*. As the physical structure of the city evolved during the German and British colonial eras, urban agriculture continued to exist. Urban agriculture followed the outward expansion of the city and was able to provide fresh food to urbanities (Chapter five). In the central part of the city, urban agriculture was accorded less attention due to increased housing investment and was also characterized by racial segregation, until outlawed after independence in 1961 (Sawio, *Ibid*). Today, the expansion of city boundaries engulfs urban agriculture land and is subject to resource and biodiversity degradation. This endangers fresh vegetable production commonly practiced in home gardens (Dongus, 2000; Sawio, 1998:21), and on a small and medium scale in open urban spaces.

A Tanzania Food and Nutrition Centre (TFNC, 2006) report on food security status, shows that the urban proportion of total food insecure population of Tanzania is not known. The report estimates that about 20% of the total population of Tanzania, of about 35 million, faces chronic food insecurity. A further 40% are said to have experienced periodic food insecurity. Paradoxically, 40% of the total population were not able to meet their daily food and nutritional requirements. The President of Tanzania has claimed that 80% of the populations of Tanzania are food insecure (The Guardian, 1 October 1997; 11 March 2000; 3rd November 2000 and 19 April, 2001).

Until very recently, urban food insecurity has often been seen to be a result of outright food inadequacy. The assumption is that the solution to the problem is increased incomes and increased national food supplies. Experience suggests that these factors alone cannot guarantee food security. In support of the foregoing, Ayres and McCalla remark:

> *"…increasing family income alone does not ensure that people will consume the right kind of nutrients in the right quantities at the right times to maintain their health and productivity. Today most households could prevent child malnutrition if they used existing resources optimally, making small changes in their health and nutrition behavior. Improving diets often requires public interventions (Ayres and McCalla, 1999:1)".*

The discussion on food security challenges draws a few conclusions, which are important to be considered in urban planning and management systems. One is that fostering the growth of national food supplies and increasing household incomes could assist in eliminating hunger, reducing urban poverty, and achieving the objective of sustainable land governance and urban management. But these measures alone are not adequate to ensure food security. In addition, food availability and accessibility should be emphasized in city development and growth. In support the Director of TFNC suggests that improving inputs and processing, and storage methods for both urban and rural smallholder farmers is rational. Thus, understanding the historical trends of land use development and planning doctrines is vital to understanding the role of land use planning and urban agriculture practise in a city's growth and land development process.

2.4 Ideal urban land use development and planning doctrine: An inclusion of farming

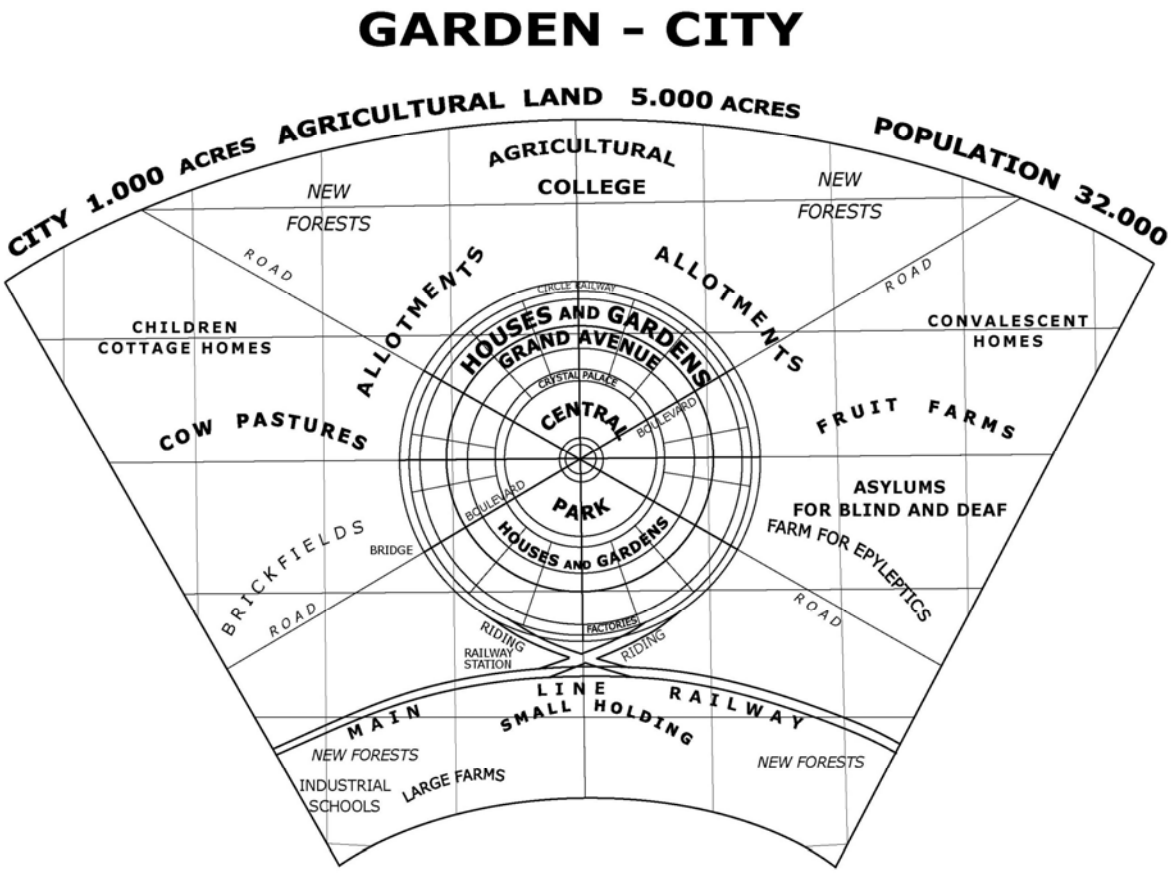
The historical development of cities is intrinsic throughout human ancestry. Tribes and clans started organising their shelter, improving their food production and marketing, and putting food surplus through production processes (Kironde, 1994:5). Urbanisation results in the concentration of the population, problems of overcrowding, city sprawl and susceptibility to diseases in cities including London during industrial revolution in the 19th century (Uphoff, 1986:28). The increasing problems connected with production processes triggers evolvement of need for urban planning interventions to remedy the urban sprawl and diseases in London (Hall, 1998:12). The author shows that before this intervention, planning used to be done by engineers and architecture. This was therefore the birth of urban planning professional evolution and recognition (Kuhlman, 2000:7). The recognition triggers spatial planning, physical planning, land use planning and regional planning which all aims to enhance city development and reduce regional disparities for sustainable development (Kuhlman, *Ibid*).

Following the Industrial Revolution, new programmes for enhancing city aesthetics, health and productivity were developed. In Paris, Baron Haussmann (1853-1870), responsible for the new urban renewal programme, became the creator of the structure of modern Paris. He performed urban surgery by tearing down existing low and narrow structures and replacing them with higher apartment buildings surrounded by wide streets. This enabled more people to live in a healthier and more aesthetic city, at the same time as giving them increased access to the city. As a result Paris economy flourished (Domhoff, 1967:65; Fisher *et al*, 1993 and Innes, 1998:42). These ideas spread throughout Europe, and large cities, such as Vienna, Berlin and Copenhagen, began restructuring along the same lines. One could wonder if this approach would be appropriate in mixed residential density, particularly in Sub-Saharan African cities, where informal settling is a common practice. The compensation is a difficult element to achieve in demolition (i.e. urban surgery) to implement land use plans in these countries with scathing economic base and therefore brings people closer to nature.

The garden city seems to be the first type of planned urbanization neighbourhood created to bring people closer to nature in the 19th century (Faludi, 1970:1-9; 1984:3; Friedmann, 1987:47; Lynch, 1990:536). Ebenezer Howard who is the pioneers of Garden city issued a pamphlet "*Tomorrow-A Peaceful Path to Real Reform*" which spread throughout Europe. His idea was to combat urban overcrowding by the establishment of garden cities of about 30,000 inhabitants, self-contained in terms of employment, food production, recreation and so on. He theorised a concentric plan of a garden city, similar to the satellite towns and green belts in cities. The plan was designed, in which residences were surrounded by woodland and had horticultural spaces and family gardens and were conceived for the whole urban community (Figure 2.1). The space left for agriculture used as a livelihood strategy to cater for food, recreational and aesthetic values (Morris, 1979: 57; Mumford, 1961:1-8).

Raymond Unwin further developed and implemented this garden city planning concept, for example, in setting up Welywin, Letchworth and Hampstead Garden Suburbs. In this case the attempt was to overcome accessibility problems associated with overcrowding in London by garden cities of limited size, where not only jobs were within easy access, but also other activities such as shopping, recreation, etc. However, this was not entirely successful mainly because the garden cities did not generate the spectrum of employment opportunities to keep people from commuting to London (Lynch, 1990:541; 1981:12). This concept may be regarded as having a humanistic ideology compared to the urban surgery by tearing of building approach previously discussed. In a modified form, this

concept is to be found today in New Urbanism, which embraces many of the advantages of the importance of mixed land uses.



Source: *Ebenezer Howard (1878) –Garden city concept: Redrawn by K.-D. Lickert, June 2008.*

Figure 2.1 Ebenezer Howard concept of inclusion of agriculture in city setting.

In the early 1920s Le Corbusier exhibited a revolutionary project named '*Une ville contemporaine'* for a city of three million inhabitants in Paris. According to Le Corbusier, a city was to be planned on the basis of four principles: traffic, healthy housing, access to workplaces, and access to natural surroundings. All in all agriculture forms, in terms of landscaping, were considered in this ideal design and demonstrates the importance of agriculture in urban planning and design.

In Sub-Saharan Africa, the garden city concept and its implementation was brought by colonialists and implemented in cities including Lusaka-Zambia, Nairobi-Kenya and Dodoma-Tanzania (Kironde, 1994:30; Halla, 2002b: 28). In these cities it is clear how urban agriculture forms have been integrated in land use plans and is rational to achieve urban sustainability. Urban sustainability, as used in this context, means enabling cities to guide their own land development for the benefit of present and future generations. Thus, the concept of sustainability becomes important in land use planning processes (Douglas, 1983: 133; UNCHS, 1994 and Mitlin *et al*, 1996:25) and improved urban land governance.

Today discussions on urban land use planning and design centre on sustainability. The model of the dense city, within the sustainability debate, is often compared to the garden city (Breheny, 1992:68). Breheny shows that the garden city model was an attempt to discover urban development model that minimise energy while fulfilling humankind's needs and wishes. A major concern in all the three urban ideals and planning doctrines explained previously is providing urbanities with healthier living conditions and increased accessibility. In the first, tearing of houses to create more space for urban development worked but was mostly inhuman. For instance, when considering tearing building without looking on the tied capital a person has invested on land seems inhuman. One could wonder where the government was during the construction. But, all in all what we see in the garden cities concept is that ensuring the proximity to desired activities provided accessibility. This puts the need of understanding urban typologies and location theories to contribute to the current situation. The later approach adopted by Corbusier, indicates the functional relationship to achieve means of raising traffic standards to shorten travelling times. In all cases, the concept of urban agriculture within city development was integrated. But one is astonished why this ideas still getting little attention? The results of the case studies discussed help to answer this question (Chapters five through to eight).

2.5 Land use planning principles and instruments: Do these integrate urban agriculture?

Land use planning dwells on policy, environmental, social, political and technological considerations to determine the critical long-term prosperity of people, land coordination, and the control of the neighborhoods. Coordinated land use planning principles in the process provide a clear policy framework to guide future decision-making in land use. With availability of land use map and plans, every change, including that of urban agriculture, is coordinated and monitored. This is to enhance not only its functional qualities but its aesthetic setting and city land productivity. According to Dar Es Salaam Master Plan URT (1979:45) and the author's experience in urban planning professional work, common land use planning principles, in summary forms include ensuring:

- *Sense of Place:* To establish an environment that is welcoming, organized and comprehensible. Where the arrangement of physical elements is unifying, provides a sense of entry to the land and contains identifiable and visually satisfying places. This helps to preserve, enhance and restore built and natural environments. While providing a safe and pleasant environment for learning, working and living.
- *Accessibility:* To ensure accessibility to community facilities and support services, information, people and programs for future investment is essential. Providing accessible settings for persons with physical disabilities that facilitate communication, promote interaction and integration among all segments of the community and the larger community hinterlands it serves is significant.
- *Respect for the environment:* To plan and design capital improvements and green space that incorporates environmental safety practices and conserves resources and minimizes environmental impacts, including impact on cultural resources, while balancing high design/construction quality standards with economic constraints. By implementing sound conservation practices, the city will become a model for sustainability. This depends also on the level of land use planning (Table 2.3) and client requirements.
- *Circulation:* To enhance and further develop the existing circulation systems and effective linkages within the city and the community at large, and minimize vehicular traffic to provide a pedestrian orientation which provides the opportunity for different cultures to interact with each other and make for a welcoming place.

- *Compatibility:* To preserve the continuity of open space and buildings to ensure the unifying integration of additions to the existing city land. This should also include maintaining compatibility of scale and materials with existing structures and compatibility of function. This helps reducing land use conflicts and enhances city productivity.
- *Flexibility:* To design and develop buildings and circulation, service/utility systems, and open space to adapt to the needs of neighbourhood or city stakeholders and to be responsive to change. To this end, the land use plan must accommodate changing users and program requirements economically and with minimal disruption of the environment. This shows policy and legal enforcement once the plan approved, monitoring necessary changes without detrimental to the other land use is economical.

These principles need to be observed when involving in preparing land use planning and output implementation at different levels of urban planning (Table 2.3). The explanation on the stated principles shows that urban agriculture forms and its setting are directly and sometimes indirectly stated for inclusion in land use planning processes and outcome implementations. But, one can be overwhelmed when and how this can be achieved in land use planning and management processes? Can adhering to land use planning principles help? In this context exploring land use planning instrument and approach used for its preparation and outcome implementation and monitoring are rational. This helps looking when and how these instruments operate to ensure good land governance.

Rakodi *et al*, (1993:220) accentuates that the instrument for urban planning and management includes taxation, fiscal policy[6], deed plan, survey plan and open-market land acquisition. Equally, compulsory acquisition, land nationalization, participation and information sharing are also included. In supporting the mentioned, Dowall *et al***,** (1996:27) and Drescher *et al*, (1999) show that other urban planning tools entail comprehensive general plans or master plans, strategic plans, structure plans and land use zoning. In this context master plans, structure plans, land use zoning and policy and legal instrument are discussed. This does not mean that other instruments observed by authors do not apply, but the author only wants to analyse the selected tool in-depth to provide more lessons of experience. Similarly, other instruments stated are reflected in the study discussions as are associated with the study phenomena. The instrument analysed based on their relevance, application, failures and inclusion of urban agriculture, which pave a way for more insight on the urban land use planning reality and integration constraints and opportunities (Chapter six and seven).

Master plan

In London, as previously discussed, the problems of diseases and urban sprawl, results of urbanisation and industrialisation revolution, led to the creation of Town and Country Planning Ordinance which guided land development and health problems in cities (Jacob, 1961:23). This ordinance was put in place in the 19th Century in Europe and was inherited in the mid 1930's, by different countries including Tanzania. The Ordinance outlines provisions for preparing, implementing and monitoring general and detailed land use planning schemes (URT, 1956. Sect.12-44). The general and detailed planning schemes are called master plan and land use (layout) plan respectively. The layout plans implements master plan, which is the broad planning framework for city growth and development (Dar es Salaam City Council, 1999; Hardoy *et al.*, 2001:120). Currently, the master plan as a name is used interchangeably to gain urban sustainability reflection. These names are Urban Planning Framework

[6] *This includes taxation of land and land development and direct public provision or ownership (i.e. includes open-market land acquisition and compulsory acquisition).*

(UPF), Strategic Urban Planning Framework (SUPF) and Strategic Urban Development Planning Framework (SUDPF) used in different countries of Sub-Saharan Countries from 1990's to date.

The mentioned planning frameworks above reflect the current debate on urban sustainability towards improved urban land governance and partnership building in meeting Millennium Development Goals 1 and 7 and its targets. The mentioned approaches are brainchild of the Master Plan, which all aims at coordinating and controlling urban land development and improving city land governance system. The only difference is the approaches in their preparation and implementation. The later seem to be more participatory and consultative rather than the former, which assume slow growing of cities, inflexible and rigid to change (Amstrong, 1987:134; Meshack, 1992:14; Briggs *et al*, 1999:269, Satterthwaite, 2005:88). The land use planning practice for example in Tanzania, up to the late 1980's, both general and detailed land use plans prepared in offices and planners assumes[7] the city land is vacant. Office work planning practice excludes landholders' involvement in planning process and therefore their needs and interest taken are not considered. Correspondingly, agriculture land through zoning was placed in outer zones of the city of Dar Es Salaam. The conditions for development of this land demarcated for urban agriculture in the master plans, which follows the Cap 378 under Use Class P[8]. This shows although agriculture considered but seems to be seen as a temporary activity, which was then marginalized, in the urban planning processes and structures. This practice is common in other developing cities where urban agriculture pioneers tried to address its setting in land use planning in Sub-Saharan Africa cities (Hall, 1998:10; Farvaque *et al*., 1998:2; Madaleno, 2000b: 27; Mougeot, 2000: 1-42; Van Veenhuizen, 2006:54)

Van de Berg *et al*, (2005) contribution shows that, landholders in developing cities are not adhering on master plans and also most of them are not aware on the scheme's use in their local environment (Chapter six). Increased housing investment in informal settlements and encroachment of public space of the designated spaces looks common in Sub-Saharan Africa cities (Nurul Amin, 1996:52) including Dar Es Salaam City (Mghweno, 1999). Likewise, inadequate land policy enforcement and use of the master plan are inadequately addressed. One could wonder, the encroachment of public space for urban agriculture and poor policy and legal enforcement is it the question of institutional failures to manage urban development, culture setting, actors exclusion in planning or capacity to manage changes in land use planning and management? The case study in this context gives evidence to comprehend this question. Besides, the question necessitates the need for more planning approach intervention including analysis the structure plans to complement the master plans as it come in late 1970's and earlier 1980 (Jacob, 1961:145, Fekade, 2000:127).

Structure plan

Dowall & Clark (1996:2) observe that structure planning is another dynamic land use planning instrument for coordinating and controlling land development adopted in developing countries**.** It provides a broad framework for local decision-making and involves public participation. The structure

---

[7] *This has led increasing land use conflicts in new unplanned settlements (Chapter six).*

[8] *States that urban agriculture is one of the land use, which requires attention in its use and allocation. Special areas will be designed for it's setting and therefore avoiding its detrimental effects to health and environment including pollution. This legal statement directly shows recognition of urban agriculture, but indirect restricts its accommodation in land use planning and therefore its setting in inner zones of the city where vacant land found is possible. This enhances the temporality consideration of the sector in urban land use planning and design without considering its economics and social aspects to urbanities benefiting from it. Orders and byelaws implementing this condition in the City of Dar Es Salaam enforce this (See also the Dar Es Salaam health and sewerage regulation of 1992, Urban farming bylaws of 1992).*

plan sets out a framework for development of a community, which is good for coordinating and controlling land development for short and long term perspectives. The future land projections, city demands and needs of the community such as housing, infrastructure, employment, transport, local markets, liquid and solid waste management are considered. As for master plans the long-term planning approach is a disadvantage in rapidly growing cities of developing countries (Armstrong, 1987:133; Drescher, 2001). The authors report its rigidity, inflexible and difficulty of the structure plans to reflect the real urban development changes and financial resource for implementation.

In summarised form, both master and structure plans the long-term and short-term projection, visions and resource for implementation and monitoring observed to be common in practices. The question is how and in which degree of flexibility and adoptability of such development and projections takes place. Is it when the settlement starts to grow at the infant stage, middle stage where some spaces are found or in the saturated stage where no spaces can be found and with increased problems of sanitation and other infrastructure provisions? This suggests thinking how to put in place urban agriculture in such settlement development stages (Figure 6.6), where mixed uses and uncontrolled land development persists. This is the challenge, which is reflected in the case study findings and synthesis.

Consistently, how do the master plan and structure plans consider the increasing city investment and urban agriculture zoned areas to be effectively implemented becomes an issue of concern. Particularly, keeping in mind that the planning instruments tends ignoring what landholders including smallholder farmers, tenants and the commercial sector demand. This sector tends altering their demands based on land prices, product marketing and investment changes in urban setting. Even when such instruments take substantial time and effort in preparation, they seem hardly relevant to the real developments on the ground. One could perceive it as the question of institutional collaboration failures but also the methods applied, means for achieving the results and long-term projections without implementing the intermediate objectives. Sustainable financial outsourcing for land use planning outcome implementation in this context is rational to achieve urban land governance objectives.

Land use zoning

Land use as previously discussed, defines broad categories of land. Zoning is the tool that is then used to implement the land use plan. Land use zoning involves land demarcation, subdivisions, permitted uses and standards for a site. The development of the future land use through zoning, the land use map and layout plan sets the broad direction, which used as a land development and growth-guiding framework for a site or neighbourhood. The blueprint conditions for the zoning decisions are to follow, and that will be consistent with the implementation of the layout plans. Zoning measures with respect to plot sizes where density[9] consideration is important. The zoning dictates to demarcate land into different function with different standards. It gives the developer or landholder conditions and purposes he or she can use the land for example on what can be built on that land, where, plot coverage and ratio becomes important. Zoning regulates the use of land in areas demarcated for residential, commercial, industrial, agricultural or other land use (Dowall & Clark, *Ibid*). One could question on the validity of land use zoning in residential mixed settlements and integrating urban agriculture in this context. Case study finding reflects this phenomenon and how to implement based on the existing evidence observed in the city of Dar Es Salaam.

---

[9] *In Tanzania context three categories of plot density exists. These include high density (400-800 m²), medium density (800-1200 m²) and low density (1200-1600 m²) (Government Urban Planning Circulars, Orders and Regulation, URT,1999).*

Land use zoning goes hand in hand with subdivision regulations, which defines standards for plot sizes and street layouts and improvements. Land use zoning also set procedures for allocating private land and land acquisition for public purposes. Subdivisions provide the essential characteristics of land uses, street patterns, public utilities and conditions. Kombe (1995:154) shows that in urban and periurban settlements in developing countries subdivision regulations do not work. Dowall & Clark (1996) support that uncontrolled housing development, land use schemes, and the unclear roles and responsibilities of planning institutions hamper enforcement of subdivision policy. But how is this zoning applied in the case study? What is the applicability of instrument application in rapid developing countries where informal settlement proliferates? Likewise, when and how these land use plans are prepared? What approach is used and what are the implementation realities? This question in this study helps provide what can and cannot work for land use planning and urban agriculture integration through zoning in rapid urbanizing cities like Dar Es Salaam at different urban planning levels (Table 2.2). The case study shows the potential of periurban land where the zoning can work and permits ample area for urban agriculture (Figure 6.6).

Table 2.3 Integration of urban agriculture through various planning instruments

Level of Planning	How To Integrate Urban Agriculture	Actors
Land use Management	• Partnership among planning institutions in decision making, outcome implementation, financing, coordination and control • Designation of areas for urban agriculture by the city, municipality, town or board to ensure sustainability • Ensuring security of land tenure to smallholder farmers and other actors	All central government, local government, private sector, civil society and development partners work together
Master Plan	• State-wide policies and goals for the planning • Designation of areas for urban agriculture by the city, municipality, town or board	Ministry for Responsible for Lands and Human Settlements Development Ministry for Local Government Administration, Local Authority (City and Municipal Council) Consultants
Subject Plan or strategic plan	• Address issues of urban agriculture on a thematic basis	Local Authority (City and Municipal Council)
Land use (Layout) Plan or Detailed planning scheme as per Cap 378 and Land regularisation plan as per Land Act of 1999 Sec.56-60)	• Create a map indicating land for urban agriculture, among other uses • Show designated land in blocks and plots • Use of surveyors to peg urban agriculture plots	Local Authority (City and Municipal Council) Ministry for Responsible for Lands and Human Settlements Development
Zoning	In periurban areas where land is available and low population density experienced	Local Authority (City and Municipal Council) Ministry for Responsible for Lands and Human Settlements Development
Site plan	• Indicate areas for urban agriculture within an individual plot or stand	Individual developers Consultants

Source*: Adopted from Takawira, et al, in Van Veenhuizen (2006) with modifications.*

2.6 Policy and legal environment

The policy and legal environment is an important instrument guiding land development practise in both developed and developing cities. These environments take into account the initiation rights of urbanities involved in land use planning and urban development activities, including urban agriculture. Besides, it analyse power relations, initiation and involvement rights, financial mobilization and autonomy in land use development practise. Others factors taken into account include, decision making processes, declarations, land use plans endorsement, plan rejection, approvals and penalty imposition at different levels. The cycle of the decision-making process (See also sect. 2.7) helps creating an understanding of the idea of social capital formation in urban planning practise in Sub Saharan Africa. Of particular emphasis, in this context, is Dar Es Salaam (Figure 3.2) which was explored.

Formal and informal land ownership exists in most of Sub Saharan Africa including Tanzania. Formal systems operate under statutory law and procedures (i.e. written norms), while the informal operate under unwritten norms. Rakodi (2001:209), Kombe *et al*, (2000:11) and Adams, *et al*, (2003:58) show that formal land ownership procedures are far from reaching community needs due to long bureaucratic processes in plan preparation, approval and subsequent engagement in cadastral and land registration. This argument is supported by Pierson (1995:449) who observes that the use of a top down approach requires time for approvals in order for the implementation process to continue. He demonstrates that the top down approach is not suitable in rapidly urbanising cities experiencing uncontrolled housing construction. A bottom up system, which provides more room for landholders' involvement in land use planning and establishes institutional frameworks for the coordination and control of urban agriculture areas is more rational. These frameworks may provide an opportunity for urban agriculture integration at different levels of urban land use planning processes and subsequent acceptability (Chapter eight and nine).

The main relevant policy and legal documents guiding land use planning and urban agriculture development in Tanzania are discussed: It should be noted that implementation of these legislations go hand in hand with policy, orders, regulations and by-laws for managing city land development as provided in the specific principle legal legislations.

Town and Country Planning Act of 1956 revised in 1961 (Cap 378)

Cap 378 is an act guiding land development in Tanzania, which stipulates and gives guidelines of a formal land use planning process:

- Section 13 of the Cap 378 states the first step in the land use planning as the declaration of the planning areas by the Minister responsible for Town and Country Planning. This should also be published in a government gazette and in one of the local newspapers. Following the declaration of the planning area, in pursuant to section 21 of Cap 378, the Area Planning Committee should be constituted as a preparatory authority under section 17 (2) of the Act. The Authority then passes the resolution to prepare a general or detailed planning scheme for its area, effective the date of the order by the Minister. The Minister uses section 13 to declare the order and ensure its publication in the government gazette. Clearly landholder initiation rights are not stated in this step (Chapter six). This has increased the implementation of the top down approach and increases the chances of having many plans but no implementation.
- Under section 23(1) the preparatory authority then prepares (designs) a general or detailed planning scheme for the planning area for which it is responsible. After preparation, in pursuant

to section 29(1) and (2) the preparatory authority deposits the scheme and notice of deposit, to inspect and make objections in writing to the preparatory authority in respect of any provision in such a scheme as per section 30 (1)-(2). In this context, it is clearly shown that landholders are invited during plan preparation and have the right to reject plans as prepared by the local authority. This is hardly adhered in urban planning practice in Tanzania as mostly plans after preparation are deposited in local authorities for further work or amendments. This practise, which is common, makes it difficult for landholders in the planning areas to understand the subsequent stages and needs for the prepared land use plan.

- After a deposition period, of not more than four months (if the local Authority is the preparatory authority) and three days (if the Minister is the preparatory authority) the minister responsible for Town and Country Planning approves the detailed planning scheme with or without modifications (Sections 31 and 32). The minister then deposits the scheme in such a place considered to the desirable and by notice in the gazette and the newspaper in circulation declares the scheme to be in force and informs the public where to inspect it (Section 33). Section 34 states the scheme will take effect seven days after the date of its publication in the gazette. The Master Plan or detailed general planning scheme after been approved has to be reviewed[10]. The land use plan is usually deposited in the local authority urban planning offices. The preparatory authority usually, thinks landholders will visit these offices and comments on the plans. Likewise, the processes do not state the landholders must be trained as some do not know how to read land use maps. Creating linkages in land use planning processes among different stakeholders interested in land development including professionals, practitioners and implementers remain a dilemma.

The land use planning process shows that the landholders and tenants get involved in preparation and have the chance to provide objections during deposition and provide alternative plans, which may or may not be considered by the minister responsible for planning. This shows that the intentions of the smallholder farmers households are hardly integrated in these general or detailed planning preparation practises and therefore their interest are often excluded in urban development planning priorities. This Act is supported by the new Urban Planning Act of 2006, which also stipulated steps to be taken in and use planning processes.

Urban Planning Act of 2006

Urban planning Act of 2006, section 19 Subsection 1-a, b, c and 2 and 3 respectively. This provides stages necessary for spatial land use process. These includes but not contrary (Sect.3) to: initiate the process by passing a resolution of intention to prepare a detailed planning scheme; convene a meeting of all stakeholders, including landholders, public and private institutions, Community Based Organizations, and Non-Government Organizations in the area to be affected. Others include in the event of a positive resolution by the said meeting, endorsing the proposal and the planning authority shall proceed to prepare a detailed planning scheme. However, it requires within three months of the making of the scheme the planning authority to conduct a public hearing or hearings in the planning area; and make alterations or modifications, if any, by taking into account the results of public hearing before submitting it to the scheme for its approval. In addition, after preparation of the detailed scheme by the landholder, it shall be forwarded to the planning authority for consideration, approval and adoption.

---

[10] *For the master plan the Act requires to be reviewed after 20 years while for detailed land use planning schemes for every 5 years.*

Section 2 of the Act provides that Copies of all schemes approved under section 18 shall be sent to the Regional Secretariat and planning authority for custody. Sect.1 provides opportunity for individual to pay for a copy of which shall be made available to any person upon payment of a fee prescribed by the Minister. This in practise observed to be difficult, as majority of urban poor observed cannot afford and even hardly visited urban planning department in the Ministry responsible for lands (Chapter nine).

Land Use Planning Act of 2006

The Act recognises the potential of urban agriculture and its inclusion in land use plans. It remarks:

> *"… all land use plans prepared by relevant planning authorities under this Act shall, so far as may be relevant at each level, include proposals on the matters relating among others with determination or designation of land for various uses including cropland, rangeland, forestland and water sources, fisheries, farming and industrial, factory and workshop land" (Sect.29(1) a)''.*

The legislative statement shows the good will of the government towards improving food security in both urban and rural areas through demarcating land for agriculture practise. But one could wonder, do the practises enforce the statement? (See chapter six through to nine).

Land Act of 1999 No.4

The Act provides need for integrating community needs and priorities through land regularisation processes important to ensure security of land tenure. The purpose of a scheme of regularisation is to facilitate the recording adjudication, classification, registration of the occupation and use of land (Sec. 56 to 60). First, it facilitates the upgrading of unplanned residential areas through involvement of different actors affecting, infected and those benefiting. Secondly, facilitates the orderly development of rapidly growing areas existing and open up new areas. Thirdly, facilitates the planned development of relative vacant areas expected to develop into residential areas and other urban uses.

Section 56-60 of the Act provides procedure for involvement in land use planning through regularisation process. In summarised form, the Commission for land is responsible for its declaration and appoints authority responsible to engage in the scheme. The authority appointed will describe and analyse the existing situation with compensation schedule. Local communities will help to show the existing situations of their settlement. However, meeting and consultation will be made before engagement of the preparation of the regularisation scheme. The local authority will endorse the scheme, compensation made and subsequent approval of the scheme. This scheme like a land use plans will facilitate cadastral survey and land registration for improving urban land governance.

The Act provides provision for the landholders to show their intention/interest in land use plan preparation. Also before the scheme coming into effect public meetings, hearings and views are considered but the Commissioners for Lands may refuse the considerations under compulsory acquisition as stated in the Act and the CAP 378. However, the procedure from declaration, initiation to the implementation of the scheme seems to be too long that could not provide sufficient room for people motivated in the process to act (Chapter six). This shows that even the project sustainability may be forfeited. More humanistic, the Land regularisation scheme provides room for negotiation and therefore considers people interest. Resource mobilisation funds suggested in this legal document, but no clear guidelines stated to affect this. As a general or detailed planning scheme discussed, land regularisation schemes is the brainchild of the Town and Country Planning Ordinance (Cap 378) stated

differently in Land Act of 1999 sect 56-60. Its participatory planning approach distinguishes it from the master plan approach as previously discussed.

The Act requires the landowners to be involved in formulation of regularization scheme in order to avoid discontent from the general public[11]. Under the public participation, initiation of the project comes from the government but with view of obtaining consent from the local residents who offer their views. Principally, this type of participation seems to belong to the government (Local and central) who formulates particular policy or project and delivers the contents down to the grassroots. Each participant is to give his/her opinion regarding that policy/project as the procedure shows. In this case the ability and degree of awareness of the local citizens to participate in policy formulation toward achieving urban land development at local level by implementing local plans is limited though the policy have good intentions. For example, the Ministry is the one who decides whether to declare a scheme of regularisation and not the local community intention and needs to prepare scheme of regularization as per this act. Also section 60 (1) and (2) provides that the implementation to be responsible to the commissioner, urban authority/village authority which shows the room for landholders' involvement is not sufficiently provided (Chapter six).

Land allocation and delivery system

The urban expansion practice takes place in Sub-Saharan Africa cities with poor awareness of the landholders who stayed in the area for quite some time (Development Assistance Committee-DAC, 2000; Magigi *et al*, 2006: 1062). Despite, the expansion also hardly acknowledges the compensation schedule to the affected landholders during plan initiations, but only considers city boundary expansion and imposition of regulations and rules in operation (Urban and Local Authority Act No 7 and 8 of Tanzania-URT, 1982). Correspondingly, the land use planning process does not go hand with land allocation in practise, where planning institutions, links and networking for improved urban land governance are sensible as the study settlements indicates. Land department in local authorities the case of Tanzania used to allocate and deliver land to landholders and hardly communicates to urban planners in practise. The land allocation is done after land use planning and cadastral survey[12]. Tracing the chain shows the significance of land use planning and outcome implementation in improving the social well-being of the urban poor. This is the point where land allocation and delivery becomes important to understand the cycle on where and how best urban agriculture can be integrated. It is within these regards where strategies for enhancing access of the urban poor in urban and periurban landholders for agriculture land and modalities of tenure negotiation can be explored.

Considering the land delivery system to landholders or tenants for urban agriculture land, Land Act of 1999, Subsidiary legislation of 2001; Sect.3 and 4-part b stipulates the composition of members and is silent on the procedure[13]. The composition of the committee consists of Chief Executive Officer of the local authority as a chairman; Authorised officer as secretary and Surveyor in charge. Others includes Town planner in charge, two councillors one of whom shall be a woman and any other two members representing that the urban authority deemed appropriate. Sect. 9 part (a)-v of the Act gives power to this authority to allocate land for urban farming. This shows the recognition of urban agriculture in urban planning and land management system in Tanzania. Paradoxically, the Act seem be poorly

[11] *See Section 57 to 60 of the Land Act, 1999.*
[12] *This has created land use conflicts and fragmented type of land development the case of Goba settlement (Chapter six)*
[13] *The Act only provide the use of auction or tenders in line with the creation of new urban centres, foreign missions, beaches and land for investment purposes (Sect.10 –1 (a)).*

interpreted and enforced by urban planners and managers in land use planning practise, Why? (Chapter six, seven and eight).

Land tenure modalities

Security of Land tenure is an agenda of concern in National and International policy forums (Jenkins, 1987:582; Simba, 1998; Home, 2001:30; Drescher *et al*, 2003; Tibaijuka, 2004). Land tenure deals with granting access to use and own land, which can be formal or informal (Chapter eight). In Tanzania, all land is a public land and remain vested in the Presidents as trustee for and on behalf of citizens of Tanzania (Sect 2 (i) of the Land Act of 1999. The questions of particular interest in this respect is on how smallholder farmers categories occupying land in urban area can have the granted right of occupancy to ensure their formal occupation and therefore farming in both urban and periurban settlements. Does the formal process favour and encourage them to engage in this process? What type of right of land occupation exists and how can these rights enable to improve the existing situation of smallholder farmer? In attempting to answer these questions, some difficulties in practice are reflected in the case studies, which need improvement if we have to integrate urban agriculture in city land use planning and management system (Chapter six and seven).

Both granted right of occupancy and customary system of land occupation and tenure recognised in Tanzania Government Tenure classification (Land Act of 1999: Sect 4 (3)). Section 23(3) of the Act stipulates the need to offer short-term lease, which may be granted to a landholder for 1 year (Sect 23 (2)), 5 years (Sect 83 (2)) and to 21 years (Sect 83 (1)). The 5 to 21 years can be leases with condition for future development and pays rent and can be offered verbally or unwritten to a person who wants that land. This seems is what supposed to happen to periurban dwellers. Their rights in holding land is by paying land tax and receiving fair compensation to move outwards the city once expansion and declaration of the planning areas ripe for urban development pronounced by planning authority. The length of the term of right of occupancy is 33, 66 or 99 years (Sect 32 (1)). And the holder of the occupancy is subjected to pay an annual rent (Sect 33 (1)). However, payment in instalments and at any interval of time during a year is allowed (Sect 33 (2)). Likewise, the laws states the change of use procedure once a person is granted the right of occupancy (Sect 35 (1)), but no such provisions are stipulated in case the land is owned under customary in urban area. Fair compensation in such occupation seems important in case of compulsory acquisition for public interests. The law is silent on what happened to right occupancy under customary-which mainly are land used by smallholder farmers in the city (See 8.11.3).

Sect 175 (1-b) of the Act states that any person who, without lawful authority or without any right or license, express or implied under customary or statutory land law do clears, digs, ploughs, cultivates, or grazes animals over, any land or part of it shall be considered occupying that land unlawful. This Act statement is found to be contradicting with other Acts and sections that recognise the farming in urban land. The study shows that, the only ingredient in land use planning practise which has not been instituted is the recognition of forms of urban farming required in each zones or location and application of the design principles required for improving urban land governance.

Human Settlement Development Policy of 2002

Section 4.3.7 of the policy identifies urban agriculture land use as one of the urban development issues in urban development agenda. The policy recognizes existence of urban agriculture and its potentials in income, employment and a reliable supplementary source of food supply to urban dwellers at affordable prices. It shows as a land use, well-planned urban agriculture creates pleasant greenery scene. Likewise, the policy recognises the improper practise of urban agriculture and conflicts arising with other urban land uses and land degradation, water pollution and threats to health and safety. In understanding this, the policy statement states that the government shall:

> *"…designate special areas within planning areas whereby people will be granted legal rights to engage themselves in agricultural activities; Continue to regulate and research on the conduct of urban agriculture and will ensure that it does not disrupt planned urban development, review existing laws to facilitate planned urban agriculture and lastly will facilitate the construction of appropriate infrastructure to mitigate/prevent land degradation, water pollution, and health and safety hazards in areas where agriculture is permitted (Section 4.3.7.2)".*

The policy also recognizes the effects of urban expansion, which goes with township boundary expansion. It shows that urban authorities have tended to expand the areas under their jurisdiction in order to enclose large population and areas so as to justify promotion into a higher status. This practice seems to create administrative conflicts between urban authorities and village governments of the enclosed villages over land rights and land use. Moreover the engulfed villages do not benefit from some urban services although they are required to pay urban levies and taxes when comes into the band of urban influence. The policy to responds to this issue remarks:

> *"…the government shall ensure the need for administrative boundary expansion shall be substantiated scientifically in a participatory manner between the interest parties. Likewise, the Village engulfed in urban areas as a result of the expansion of township boundaries shall cease to be villages whether or not they are registered and their administration shall come under the respective urban local authority (Section 4.3.3.2)".*

In view to infrastructure and social service provision, the policy statement shows that

> *"…areas in urban centres that are earmarked for development shall be provided with infrastructure and social services before they are allocated to developers as required in the national land policy (Section 4.1.3.2)".*

The policy therefore recognises urban farming and issues connected with, including expansion, infrastructure and sustainable use of land modalities needs to minimize negative and maximise positive implications. This motivates more finding and innovation to provide more evidence towards meeting the national development agenda in the land question towards improved food security, reduced urban poverty and redressing urbanisation challenges in urban development processes and growth.

Urban Farming Regulations of 1992

According to the Urban Farming Regulations of 1992 made under the Town and Country Planning Ordinance (Cap 378) section 78; (Government Notice No. 10 published 25/2/93), it states among others and relevance in this context that:

(a) "*Urban farming*" means the carrying out of plant and animal husbandry activities within statutory township boundaries.

(b) No person shall occupy or use more than three acres of land for urban farming.

The practise shows that settlers in urban areas own more than three acres and observation of this policy hardly implemented in both urban and periurban settlements studies (Chapter seven).

Building Regulation of 2001 revised from 1930 and 1989

The building regulation gives clear guidelines that before one can erect a building, the builder must apply to a building permit. This implies that building permit is a tool for coordinating and controlling land development. In addition the policy recognises the need for urban agriculture space in plot organisation including site planning. In strengthening the need, the township building codes of 1930 (sect 9) remarks:

> *"…plots shall be covered by building only up to a certain percentage-66%, 70%, 50% and 25% for different specific cases.. There is a general restriction to 25% plot coverage in areas zoned as residential areas. No plot in residential zones shall be less than 929 metres square".*

The practise shows that, these plots ratio and coverage hardly observed by settlers during housing construction (Chapter seven). Likewise, inadequate guidance in terms of urban housing construction is common in the city. This causes increasing informal housing construction with inadequate infrastructure provision including sanitation facilities and space for public meetings and leisure.

National Strategy for Growth and Poverty Reduction of *2005/**2010***

A Poverty Reduction Strategy has been in place in Tanzania since 1998. Rural agriculture production was and still is highly emphasised in this strategy and the subsequent National Strategy for Growth and Poverty Reduction. The strategies concentrate on ensuring access to land and ownership of land for agriculture production in rural areas. Similarly, improvement of farmers' inputs, outputs and marketing of their productivity are insisted an in this document. This creates the emerging urban-rural dichotomy in agriculture production sphere in Tanzania. Three strategic clusters are earmarked namely:

- Growth and reduction of income poverty
- Improvement of quality of life and social well-being and
- Governance and accountability.

Neither of these clusters strategies nor do their contents, which was participatory prepared indicate urban agriculture sector as a poverty reduction strategy improvement. The marginalised of the sector increases difficult to be acknowledged in urban setting, land use planning and subsequently impossible for its implementation organisation. Apart from that even the National statistics survey for example the National Household Budget Survey and Gross Domestic Products-URT (2002) cannot show this. One could be surprised if poverty reduction activist, development partners and planning institutions do not spot this sector in this document, the government and other developers, who may need facts that may improve the social well-being of the urban poor, can take less attention. Urban agriculture based livelihood is one fact if checked, properly coordinated and controlled can bear the intended results.

2.7 Planning institution, structures and roles

Institutions defined by North (1990:4) as constraints to shape human interaction. He adds that they are sets of interrelated rules governing given aspects of social life, which are acknowledged (or even sanctioned) by all or some members of society (North, 2000:220). Besides, the author pointed out that institutions regulate relationships among individuals and between social and the ecological system, i.e. rights and duties as well as costs and benefits of actions. His argument was supported by (Ostrom, 1990; 1992; 2001; Goglio, 1997:42) who show that institutions are the essential linkage between social, economic, political and ecological systems. North *Ibid*, introduces the question of opportunity

behaviour, transaction cost and choice preferences as elements underpinnings institutional structures in its operations within a social setting. Christensen (1993:209) shows that the institutional arrangements are fixed, and the challenge is to select a strategy for planning and communication. These are important elements in this study particularly when exploring the urban agriculture productions, institutions responses constraints, market preferences, location influences and voices of smallholder farmers in the city. For example, market preference, information and other underlying cost of urban land use planning system may hinder effectiveness of integrating urban agriculture in land use planning as discussed in this context (Chapter six).

In supporting the above, Platteau (1994:533) observe that in legal framework, widely shared values and informal codes of conducts contribute to shape and change the existing institutions and their policy formulation structures. Lynch and Gary (1984:126) support this observing that institutional policy formulation and implementation process must match with the situation at hand that has some general characteristics (Chapter five). The process indicated to be cyclical and with analysis, design, prediction, and decision done side by side. It also needs to define and redefine the problem where use of internal and external process as a learning process is rational. Likely, meshes designing into the much broader network of social decision of which it is a part (Cooley, 1956:2; Flyvbjerg, 1998:1 and Burt, 2000:12). In this respect it opens up the design process to the values and control of the actual user i.e. smallholder farmers and planning institutions. Equally, it considers each output as a single event in a long historical land development chain of the institutional arrangement and change. Exploring the author's contributions and reflection in this context helps understanding more on the planning institutions structures functions, constraints and associated links which favours or hinder land use planning and urban agriculture sector integration.

Following the above arguments, functions, legislative framework, policy performance, strategy for planning and communication and marketing are common elements coming out. Pierson (1995:449-478) shows that policy performance is a function of the allocation of resources and tasks and depends on intergovernmental relations, including bureaucratic, legislative, and executive relations. The author adds that the functions provide human use, response and characterize the social and cultural system as being important for the evolution of institutions at the interface of social and ecological systems. Catanese *et al*, (1988:4) and Rondinelli (1993:5) support by showing that effectiveness of policies and programs initiated by planning institutions is likely to depend on how institutions can organize their policy formulation and implementation. This seems to show that planning institutions need to understand, predict and control the outcomes of policy initiatives under conditions set. The method to be adopted must be better suited to recognize and deal with uncertainty, detecting and correcting errors on an ongoing urban land use development. Others include generating and using knowledge as policy experiments progress, and modifying actions as opportunities and constraints appearing during implementation (Uphoff, 1986:6).

Institutional framework of urban planning makes a difference and affects the flow of history. The authors' view in this context interested in two aspects: First, the way in which the appreciation of the role of institutions contributes positively or negatively to urban land use planning. Secondly, the ways in which understanding planning institutions contribute to the sustainable use of land through land use plans implementation. Understanding the two aspects help holistic thinking on assessing the extent to which planning institutions contribute a meaningful governance of communities of the people in land use planning involvement at different stages in Tanzania (Chapter six).

2.8 Roles of planning institutions in the Tanzanian context

Tanzania has a two tier system of government, a central government and local governments. The central government extends to Executive; Parliament with Ministries and Judicial bodies while the later comprises the Local Authorities including Cities, Municipals, Towns, Wards and Village administrative in relation to land administration and urban governance (Figure 8). In view of urban planning and land governance in the country, three main planning institutions are concerned. These include the Ministry for Lands and Human settlements Development, the Ministry responsible for Local Government and Judicial. Under the Ministry for Lands, there are subsections including legal section, land service delivery, Land valuation, Human settlement development, Registrar of titles and Survey and Mapping. Local governments including City authority, Municipal authority, District, Town, Village authority and Village registration office are under the Local Government and Administration of the Central Government. Equally, under Judicial, Land Division of the High Court exists. It was observed that Assistant Registrar deals with land matters.

The dilemma is that Town planners are employed by the local authorities and sometimes are monitored by the Councilors who are political figures. According to the Local government reforms, the councils can hire and fire. At the same time the Planners need to satisfy the Ministry responsible for lands obligations and functions that also put to them directives and circulars. In the local authorities town planners are controlled by councilors who are political figures and who hired them. Satisfying two obligations can become difficult for planners to execute their function effectively. This needs to be looked at more seriously in order to ensure sustainable institutional functions in the urban setting for improved urban land governance system.

In view of the legal setting, the roles played by different planning institutions in Tanzania context are discussed below:

- The Ministry responsible for Land and Human Settlements Development; plays a key role in Coordination of the Land policy, Land Development, Human Settlements Development and Surveys, Valuation, Sites and Services, Land Registration of Documents, Chattels Transfer. Also, the Ministry is involved in the formulation and implementation of the National Housing Policy, Building Research, the urban Physical Structure Policy, Town Planning, Master Plans, Maps, and Regional Physical Planning.
- The Ministry responsible for Local Government deals with policy formulation, standards control and administers land matters and reform programmes. The ministry is also involved in tax collection for the Ministry responsible for Lands
- The Ministry for Health and Social Affairs is involved in viewing the urban land development potentiality in determining health consequences of urban agriculture and formulation of Health Policies. The key health issues observed included: the use of water from wells and rivers, which seems to be polluted (Plate 7.6; 7.10). Also, there are others impact included from vehicle emissions such as carbon monoxide and sulphur gas mainly along the roads reserve farms. This calls for more exploration in determining its future accommodation of urban agriculture, sectoral collaboration and information sharing.
- The Prime Minister's Office-Environmental section and the Minister responsible for Environment are important in ensuring that urban environment remains friendly to residents with reduced pollution.
- The Ministry for Agriculture and Livestock Development plays a great role in formulating sound policies, providing sound regulatory frameworks and support services. The role becomes

technical advice to farmers and private sectors for a sustainable growth and poverty reduction, agriculture improvement, extension services and effective delivery of inputs for improving agriculture with main focus at rural agriculture production.

- The Judicial, which involves in urban planning primarily through litigation, which is rife in land use disputes. Most laws affecting local planning are state laws, mostly statutory cases (i.e. involving alleged violation of a law) that end up being heard in the court. Land hearing matters involve Ward, District land tribunals, and if the case merits to more than 40, 000 USD, it will be filed in the Land Commissions for the high court of Tanzania.

Essentially, weaknesses in institutional coordination and sectoral integration noted, which put urban agriculture on cross road in its implementation in the city of Dar es Salaam (Table 5.1; 8.1; Figure 7.4).

2.9 Land use planning and decision-making processes

Lewis Mumford, the author of "*Culture of Cities*" (1938), was a true believer of the land use planning process as an instrument for urban development (Mumford (1961:6). He introduced the idea of decentralisation, by dividing cities into neighborhoods with their own identities and some autonomy. His ideas spread to traffic planning and typified the structure of Swedish "*low housing areas*" in the 60s, 70s and 80s. However, his ideal of *gemeinschaft* was severely criticised by Jane Jacobs in her book, "*The death and life of great American cities*" (1961), which condemns both the functionalistic and humanistic concepts, which were previously discussed. Lewis ideal of dense cities with mixed uses brings somewhat closer to the current reality of settlement development in Sub-Saharan Africa cities.

Johnson (1989:2) characterises the land use planning process as being in some respects a mass action, and in others as elite decision-making process and not individuals wish. It is a mass action when people collectively determine over a period of time, what areas of a city grow or decline through voting patterns. Equally, involves community organization, public opinion in the manner they live, work, buy and travel on a regular basis. The mass action in planning especially in decision-making is affected by the elite, where few of them such as politicians, government officials, business entrepreneurs, financiers or community leaders act on behalf of the many (*Ibid*: 4). These elite groups also set the boundaries within which citizens can exercise or influence policies of land development, taxation, subsidies and regulation. The elite affects sustainability of land use planning process and therefore many plans are there in cities but with little impact on the ground in rapidly developing cities (Healey, 1997:5; 1998:1531). In Sub-Saharan Africa including Tanzania, land use planning process is provided and guided by policy and country legal instruments and documents (See 2.4).

What is the process for making land use decisions?

The land use planning process is open and community-based. All interested stakeholders including property owners, business owners, non-resident property owners, renters and institutions are encouraged to participate. Friedmann (1987:4) shows that the process goes through a number of stages: inventory, education, consultation, analysis, option generation, deliberation and synthesis, draft plan, final plan, implementation, monitoring and amendment.

Adopting a long-term and comprehensive perspective when making decisions in land use planning appeared important in integrating community based livelihoods activities in city development fora. Either general detailed or regularisation schemes discussed planning processes levels should be looked

at in a broad and integrated way. Land use decisions should be made more at the level of districts, blocks, and corridors rather than on individual lots. Although, neighbourhood plans can sometimes impose certain restrictions on some property owners and developers, caution must be exercised to ensure that viable uses of private property are maintained. Typically, land use decisions are about the type, amount, and location of uses of land (Faludi, 1987:8; Clarke, 1994:12 and Abbott, 2002:317; Abbott *et al*, 2003:1). In summarised form from the reading, the main pertinent questions to be asked include:

- Is this land use appropriate on this site?
- Where is this land use most suitably located?
- Are the land uses located on the same site or on adjacent sites compatible with one another?
- How much land is needed for this particular use?

The above questions provide one of the best opportunities for public involvement in decision making processes and shaping land use planning processes. Certain interests may choose not to participate in the planning process. Reasons range from lack of capacity to participate, to fundamental concerns about the process itself or vested interest (Chapter five and six). The urban land use planning process continues to evolve and benefit from previous experience. Continual efforts by local authorities in Sub-Saharan Africa are made to engage all interests in order to create the best plans possible implemented including Tanzania. Experience has shown that those people who did participate in the meetings are more satisfied with the final land use decisions than those who did not[14]. To assist neighbourhood stakeholders to address the above questions, a set of land use principles have been developed and adhered to provide guidance for making sound land use decisions (See 2.3).

Land use planning intends formalising land to ensure among others security of tenure, city land aesthetic value, productivity and competitiveness. It involves designing, allocation and development of land process in formalizing land for human use and enjoyment. Likewise, it determines what land is best suited for what use. For example, identifies suitable land for residential, commercial, industrial, institutional, urban agriculture, open spaces, recreational etc. One could ask, with this order of land use why urban agriculture seems to get limited attention in the urban planning and management structures and processes for its setting, location and improvement. The definition of land use planning depicts the concepts of sustainable development and use of resources, which currently calls for involvement of actors in land development decision making processes. This becomes therefore an important component in improving social welfare of the urban poor when involved in land use planning initiation, decision making, preparation, and implementation to monitoring for sustainable use of land.

The decision making in land use planning takes place at all levels where land use decisions are made including in the preparation of site planning, detailed and general land use plans, and land use management (Table 2.3). The land use maps, plans and conditions for guiding such development are the outcome of land use planning process. The outcome helps administrators developing procedures for using land sustainably. Equally, it facilitates landholders involving in cadastral survey, land use changes and subsequently land registration for being granted title deeds.

---

[14] *The authors engagement in land regularisation process where meeting and consultation were done in the City of Dar Es Salaam attest this (Refer Magigi et al,2006).*

2.10 Land use coordination and control

Mougeot (2000a) in Bakker *et al*, (2000:27-30) observes that the tendency of local governments in developing countries is to move beyond accomodation and into issue management. He calls for multi-stakeholders intervention for mainstreaming UA in city management function to ensure proper coordination and control system. (Smith,1998:207; Lee-smith,1998 and Koc *et al*, 1999) observe that urban agriculture policies should target vulnerable groups in order to effectively strengthen local sustainability and equity. Bourgue in Bakker *et al*, (2000:130) shows that policy processes do not include stakeholders in problem analysis and predesign stages, and this is one area of conflict, which hinder land use planning coordination and control and integration of basic livelihood for production purposes in cities. The discussion leaves more questions in the case of Tanzania, if really we need to integrate urban agriculture in a city land management system, what should be the best guidelines standards and procedure of operation for action?

Citing Tanzania as an example in Sub-Saharan Africa, Kombe (1995:7) shows that private land development sector is neglected in urban local development problems (i.e. smallholder farmer in this context). Showing the example of 1980 Urban Development Policy in Tanzania, the authors extensively deal with issues related to maintenance and development of urban areas. Paradoxically, in 1980 policy did not provide specific policy guidelines to coordinate and control the urban agriculture land development sector in the city to late 1980's.

The Town and Country Planning Act of 1956, the revised in 1961 and the related land development laws such as Land Act of 1999 to enforce the urban expansion declaration states: No development is permitted in area already declared as a planning area without a planning consent and no one allowed to have more than one acre plot. Other conditions include land use plans will be prepared to guide such development and land use change conditions and adoption will be adhered. Rakodi *et al*, (1993:237) and Mattingly (1996:132) observe that housing densification and increased mixed land uses in informal settlement are hindrance to adopting formal planning standards.

In the year 1992 and subsequently 1995, 1999 and 2000, the government of Tanzania recognised the urban agriculture and its contribution to the social well-being of urbanities. Policy was put in place to facilitate urban agriculture implementation sustainably. However, the policy fell short of providing for a specific policy framework to state who decides what to grow in urban areas and role of different institutions including grassroots actors in coordination and control (Majani, 2000; Kyessi**,** 1997:28). The authors show that the emphasis is now on deploying pro-active approaches in the engagement of grassroots actors-smallholder farmers in coordinating and controlling their land used for urban agriculture.

2.11 Urban agriculture: Risks and benefits

Risks of urban agriculture have been defined widely (Wisner *et al*, 2004:3 and Watts *et al*, 1993:43-67). In this context is conceived as the future determination of something bad to happen if land use planning coordination and control not taken care. For example, encroachment of public open space, informal settling, lack of future land for investment, land degradation, famine, disease occurrence, fire hazards and decreasing of urban labour force. These risks are connected with land use planning and urban agriculture implementation. Therefore their proper consideration in earlier stages in land use

plan making is rational for enhancing social welfare of the urbanities. A part from that the health and environmental risks connected with urban agriculture are discussed (Chapter seven).

Benefits in this context are advantages accruing from involvement of different actors in coordinating and controlling urban agriculture sector. Evidence suggests that urban agriculture compliments rural agriculture and increases the efficiency of the national food supply (Atukunda, 1998; Drescher *et al*, 2000:31 quoting IDRC, 1999, Van Veenhuizen, 2006:1-18):

- Provide products that rural agriculture cannot supply as well. e.g. perishable products, export crops that require rapid delivery upon harvest
- Can substitute food imports intended for urban consumption, and save on foreign exchange
- Can release good rural agriculture land for exports-oriented production; and
- Can reduce pressure to cultivate new rural land, relieving stresses on marginal rural lands
- Contributes to generate income in the rural sector by various multiple interactions between the areas and inhabitants.

2.12 Case studies examined integration of urban agriculture in spatial land use planning

2.12.1 Allotment gardens in Germany

Drescher (2001:159-167) reports on the system of allotment gardens in Germany. It is a remarkable organised urban farming system, which could suitably be transferred to Sub-Saharan Africa. He states that hunger and poverty were widespread in Germany and other European countries nearly two hundred years ago when the first "*gardens for the poor*" emerged. Rapid industrialisation, accompanied by urbanisation and migration in Germany, forced large numbers of people into dismal living conditions including lack of nutritious food was rational. Urban gardens were one official response to this problem.

Drescher observes that allotment gardens consisted of a piece of land between 200 and 400 square meters, most of them with a little shed for storing gardening tools (Plate 2.1). Allotment gardens formed a buffer for food security, especially in times of crisis. Shortly after World War II, Berlin alone contained 200,000 allotment gardens. Today there are still about 80,000. The basis for the successful and permanent establishment of allotment gardens was made possible through establishment of small-scale gardener associations (*Kleingartenvereine, Schrebergartenvereine*) in German cities.

Plate 2.1:Author's visit in the Allotment Gardens: Photo, October 2005 by Axel Drescher.

The local authority council provides the land, establishes a water system and eventually fences the area. The gardeners pay a small rent for the plot and have to attend to certain duties within the association. The organisation of farmers in garden associations has proved to be a good means for learning democratic rules as well. New developments in most German cities heavily promote organic farming and the complete abolishment of pesticide use in public owned urban allotment gardens.

Drescher shows that in principle the adoption of the German system to some African Cities might be possible. Main problems are seen in the institutional context of urban planning and municipal governments. Because of the highly diverse cultural and climatic situation local solutions are needed, e.g. with respect to water management and -harvesting, irrigation techniques, fencing facilities, small scale animal husbandry, and housing regulations. The establishment of allotment gardens is one measure to reduce poverty and site selection has to take immobility of citizens into consideration. He observe need for improved transport facility, quality control of water and soils is pre-requisite for this type of land-use. The establishment of a well-trained extension service that understands the conditions of farming in the urban setting was highly recommended by the author.

For adaptations of allotment gardens programs in Southern Africa, local authorities responses are required initially. Later the formation of small, local urban farmers associations and community partnership programmes accompanied by the establishment of trust funds to secure open spaces for food production are essential. To facilitate financing of such programmes public private partnerships could be aimed at and to help development agencies might additionally contribute.

2.12.2 Countries in Sub-Saharan Africa

Urban agriculture faces multiple challenges for its acceptability in the urban planning and management system. These include location of the activity in urban areas, accessibility to land, restrictive policy and legal instruments and health effects. Although, the literature shows its advantage in food provision and income generation, these cannot be under-estimated as the case reviewed in this context shows this.

The case of Kampala

Table 2.4 Accessing land for urban agriculture in Kampala

Since the early 1970's, the urban population of Kampala has grown considerably and an increasing number of vulnerable households have turned to urban cultivation as an alternative source of food, as a means of saving on food expenditure, and as a way of generating cash income. Of the city's population of nearly 1.5 million inhabitants, 40 percent consume either a crop or animal product produced in the city, while 70 percent of all poultry products consumed are produced within the city (Ssebaana 2002). Agriculture in Kampala is practised mainly in valley slums where the poor live in informal settlements. Although urban agriculture offers easy access to services and markets, gaining access to land to grow food and rear animals is a challenge for the urban poor.

The majority of the poor gain their access to land as customary tenants on privately owned land in periurban areas, a form of land tenure unique to Buganda known as bibanja (plots) on mailoland. Many poor people who lack land ownership rights gain access to land in poor areas like wetlands, road and railway reservations or waste disposal sites, and grow annual crops. Others utilise their backyards or encroach on undeveloped land left to fallow by landowners. Despite being squatters, the poor have usufruct on the plots they farm. Landlords and city authorities do not allow squatters to grow perennial crops, and the poor squatters stand to be evicted at any time if the occupied land is going to be "developed".

A research undertaken on how the poor access land for urban agriculture revealed different modes (Nuwagaba et al, 2003): squatting (46 percent), borrowing (34 percent), inheriting (11 percent), renting (5 percent), co-owning with spouses (4percent). Currently in Uganda, the spouse co-ownership of land is a contentious issue particularly among gender activists who contend that women have for long been left out from the benefits of family resources. The majority of urban farmers in Kampala (60 percent) indicate that they are actively searching for land, and mention plans to borrow from the government or relatives, or seek funds to buy.

Adopted from Van Veenhuizen (2006 :53-86) quoting Kiguli et al., 2004

The case of Zimbabwe

Table 2.5 Legislative framework for urban agriculture in Zimbabwe

The Zimbabwe Environmental Law Association (ZELA) and the Municipal Development Partnership of Eastern and Southern Africa (MDP) from December 2003 to February 2004 undertook an audit of the policy and legislative framework for urban agriculture in Zimbabwe. The main objective of the audit was to identify relevant and current policies and legislation which impact on urban agriculture and to provide recommendations on how current legislation can be reviewed in order to develop an enabling legislative framework.

One of the key findings was that indeed there are not one but many pieces of legislation that impact on urban agriculture in Zimbabwe, both at the national and the municipal level. There have not been any recent regulations or by-laws gazetted to the effect of regulating urban agriculture in Harare, Zimbabwe. It was also found that legislation does not refer to urban agriculture per se, but to farming in urban environments. The different types of legislation and the absence of the term urban agriculture in such legislation, coupled with misinterpretation by those who enforce the law, leads to confusion on the legal standing of urban agriculture.

The research also established that in what is seemingly a very prohibitive environment, there are indeed many opportunities that exist in legislation for the practice of urban agriculture, contrary to popular belief that the law prohibits urban agriculture in Zimbabwe. Urban agriculture has grown in importance, but is still considered as a rural activity in the law. Existing law seeks to regulate the practice of urban agriculture so that the negative effects can be prevented, and when they do happen, that prompt relevant action can be taken.

Adapted from Van Veenhuizen (2006: 53-86) quoting Mushamba and Makonese, 2004.

The case of Cagayan de Oro Phillipines

Table 2.6 Building food-secure neighbourhoods, the role of allotment gardens

Cagayan de Oro is one of the three model cities in the Philippines under the UN-Habitat Sustainable Cities Programme due to its efforts in addressing the challenges of urban environmental management and food security. This is particularly evident in its allotment garden programme, which enables multi-functional land uses such as food production and income generation, treatment and nutrient recycling of biodegradable household wastes and excreta, as well as open spaces for community and family activities.

The first allotment garden of Cagayan de Oro was established in 2003 (Holmer et al., 2003). Since then, the number has grown to five self-sustaining gardens located in different urban areas of the city, enabling a total of 50 urban poor families to get legal access to land for vegetable production. These allotment gardens are characterised by a concentration in one place of six to twenty small land parcels of about 300 m^2 each that are assigned to individual families, who are organised in an association. In the allotment gardens, individual families cultivate the parcels.

Aside from contributing to the food security of the community, the gardens are also essential for the successful implementation of the city's integrated solid waste management programme as mandated under Philippine law. In the city districts that have an allotment garden, the amount of residual wastes delivered to the landfill site has been reduced by more than one third since the segregated biodegradable household wastes are converted into compost in the gardens. So-called ecological sanitation ('Ecosan') toilets have been recently established in four of the five areas. They serve as show cases for improved sanitation.

The city government of Cagayan de Oro is presently mainstreaming the allotment garden concept into its overall city planning and development, which will also use participatory GIS-based approaches to identify suitable areas for future garden sites. A city ordinance is presently being prepared to reduce taxes for landowners who make their land available for this purpose.

Adapted from Van Veenhuizen (2006: 53-86) quoting Robert J. Holmer and Axel Drescher, 2005

The case of Dar Es Salaam City

Urban agriculture in Dar es Salaam consists of home garden production, livestock production in urban homesteads, community gardens, open space production and periurban production (Jacobi *et al.* 2000, Dongus, 2000). The majority of those involved in urban agriculture are women mostly engaged in home gardens (Dongus, *Ibid),* youth and men, who cultivates in open space and road reserve areas (Mlozi, 1992; Kyessi, 1997 and Sawio, 1998). However, the increasing urban agriculture activities seem to stimulate numerous social, policy changes, environmental, health and economic opportunities for societal development needs. This creates the need for designing strategies to reduce pressure on resource use and conflicts for sustainable urban development.

Table 2.7 Integration of urban agriculture into urban planning- the case of Dar Es Salaam

In 1992, the city of Dar Es Salaam adopted the Environmental Planning and Management (EPM) approach in its City Consultation. This new approach has been the engine of change in many aspects and also related to urban agriculture. Under this new approach the city held a mini-consultation in 1993 to deliberate on agriculture. In the consultation, stakeholders agreed that agriculture in the city contributed substantially (almost 30 percent) in household food supplies and that it had become an integral part of urban livelihood strategies. A Working Group was formed to work out strategies for putting urban agriculture on the city agenda. The Working Group used a participatory approach to come up with a strategic plan on urban agriculture for the city.

The results of this process are good: from action, plan preparation, implementation of demonstration projects and further integration of agriculture in the city's urban zonification. Findings of the working group included results of these projects and were a basis of deciding on where and to what extent agriculture can be practised in the city as reflected in the Strategic Urban Development Plan (SUDP). In this plan, special land zones have been designated for agriculture. Ideas

necessary for revising municipal by-laws and regulations were also worked out and a platform for coordination established and enhanced. The SUDP also has deliberately set apart several areas to be used for large- and medium-scale urban agriculture in the future and gives corresponding development conditions. This is contrary to the earlier "zonification" where an area could only be considered for agricultural activities while awaiting to be assigned other to uses such as residential or industrial areas. The major difference is that the Master Plan considered UA as a transitional land use whereas the SUDP considers it to be an important activity with a very important contribution to its citizens. Recognition is reflected in several laws and regulations, among them are the Agricultural and Livestock Policy (1997) and the National Human Settlements Development Policy (Jan 2000).

There is no one single way of organising urban agriculture and success very much depends on adaptation to local conditions. In Dar Es Salaam, it is seen, that agriculture can be effectively integrated in urban land use plans.

Adopted from Van Veenhuizen (2006: 53-86) quoting Martin D. Kitilla and Anasteria Mlambo, 2003, Integration of Urban Agriculture in City Development in Dar es Salaam.

2.13 Reflections and missing gaps investigated

The question of land use planning and urban agriculture integration seems questionable particularly in urban planning and management system in Tanzania and other African countries. The main issues from the literature review craggy to the negative perception are based on health and environmental negative impacts. Equally, the political and economic governing urban agriculture integration into urban planning and management systems is low when compare with other land uses. The literature shows instruments of urban planning including, master plans, structure plan, and zoning, looks to include urban agriculture from the outset. The mixed land uses, informal settlement proliferation, insecurity of tenure, land delivery and allocation, density, location, information flow and access, financing, and land use conflicts observed are common challenges. Inclusion of urban agriculture in the city economy, adopting health regulation, advanced technology and waste recycling are some options suggested.

Takawira, *et al.*, in Van Veenhuizen (2006:53-86) further describe and analyse levels of planning (Table 2.3) and how to integrate urban farming and actors. In Tanzania, urban agriculture has been integrated in policy and legal instruments since 1992, with all participatory planning instruments and regulation requirements in place, but planning institutions are hesitant to accept it. What is the implication of the integration in line with city's aesthetics value, health, food security, environmental, political and technology use, if it is integrated in land use planning processes and structures? The question asked in the first chapter are still unanswered signifying that more work is to be done towards understanding the current status of the land use planning process, structures and outcome implementation and to identify areas for improvement.

Logically, the study considered these findings to build indicators for the case investigation. Special, contribution in this context therefore is on land use planning process, structures and the subsequent of resource mobilisation elements for spatial land use plans implementation. These help identify the missing links, what works and how, observations are hardly acknowledged in the available literature reviewed. Exploring these elements helped to get the underlying factors, options, and mechanisms of the current state in order to help integrate the sector into urban planning and management systems. Thus, this direction forms area of departure and the missing gap investigated. In connection to this, the next chapter describes and analyses the theoretical and conceptual frameworks underpinning to this study.

PART II: THEORETICAL FRAMEWORK AND METHODOLOGICAL UNDERPININGS

CHAPTER THREE: THEORETICAL AND CONCEPTUAL FRAMEWORK

3.1 Introduction

The previous chapter discussed land use planning and urban agriculture development in the world cities and allied issues in policy and practise. This chapter analyses the theoretical and conceptual premise associated with this study. The periurban typology and location theories[15] in planning are discussed. The theoretical premises are described and analysed in line with understanding urban land use development demands towards improving urban land governance. Similarly, the conceptual framework analyses concepts that embody the validity of analytical framework put in place. The chapter ends by providing reflections and issues interconnected with this study.

3.2 Theories

Theory is a system in which a number of concepts and propositions are organized by the researcher to generate knowledge within a certain area. According to Nachmias & Nachmias (1981:4), there are four basic types of categorising theories:

- Simple systems for classification (for instance division in two groups with the help of questions)
- Taxonomic theories (where classification demonstrates the relationship between the different categories used in the division of the material, for instance the division into a masculine and feminine perspective on nuclear energy)
- Conceptual systems where a number of concepts and their relationships are articulated, for instance, cybernetics and the concept of feed-back
- Theoretical systems, which organize a set of concepts, a set of propositions, and a set of rules for the deduction of new propositions

Based on Nachimias' argument on theories categorisation, using a simple system classification is considered rational in this context. Variables have been deduced from the documentary search and gaps were established that enabled the design of the questionnaire that has been used in the field survey. Equally, it helps in understanding relevant and associated variable for improvement related to theories used and practical options for integration established in this study (Chapter ten).

In supporting the abovementioned, Lundequist (1999:14) shows the importance of deploying theories in scientific research. The first includes giving knowledge about the objectives of a certain activity and the second includes providing knowledge about the action itself. Bunge (1967:15) supports showing that the first is about characteristics like the durability of a certain material and the later gives guidance on how an actor has to act. This indicates thinking on knowledge generation about objectives set alone is not enough, but how to operationalise the knowledge gain or putting into action is of more

[15] *The author is aware of some other theories such as theory of institutions, (Williamson, O.E. 1996; 2000b: North 1990, 1997), Ladder of participation (Pretty, 1995), Organisation and management theory (Williamson, O.E. 1996; Ostrom, 2001), Social capital and network theory (Robert, P. 1994; Stenlas, 1999; Spellerberg, 2001; Pretty/Ward, 2001; Verity, 2002) and Collective theory (Olson, 1965; Ostrom, 1990). However, although they were not taken into the study in details in theoretical part but some of ideas have been borrowed to support the theories in planning of this study.*

importance. The research findings need to be transformed into action agenda. This requires thinking how to attract actors to foster resource mobilization, interaction and involvement at different levels of action. This indicated in this study when the thinking on how to operationalise the finding established into action agenda. In this context actors involvement, interaction and partnership were emphasised to link theory and practise towards improving urban land governance through urban agriculture integration in land use planning practise.

In supporting the above, Lundequist (1999:7) shows that development of scientific knowledge needs an interaction between theory and practice. She accentuates that the importance of the theory is to develop the conceptual apparatus used by both the practitioners and theoreticians. Particularly when dealing with the practical sides of their work and partly when they talk and write about the conditions of their work. In this context, theory and concepts take a central role in the discussion for understanding how urban agriculture can be integrated in land use planning. The theory do not only helps in providing insights on study variables, trends of urban planning practise and generate testable hypotheses, but also to compare the existing situation for theory validity, improvement and practical implementation in the study settlements examined in the city of Dar Es Salaam. Questions concerning the connection between land use planning and urban agriculture therefore become important within incorporating periurban typology in urban land use planning context**.**

3.2.1 Periurban Typology (PUT) framework

Rakodi and Lloyd-Jones (2002:8) define a framework as:

> *"…an oversimplification of a complex reality and should be treated merely as a guide or lens through which to view the world in analytical way" (with authors addition).*

The Peri-Urban Typology (PUT) framework is widely discussed (Iaquinta and Drescher, 2000:9; Nkwae, 2006:97). This can be used to:

- Provide a basis for understanding on the relation existing, resulting urban forms and influencing factors of the planning institutions process and functions in line with their nature, structure and networking in urban environment. It is in this line where integration aspects can be identified, linkages established and actors and their roles identified for proper city functioning as conceived in this study.
- Help those who are involved and need to understand social, economic and demographic processes, dynamics and changes of a *place* to institutions and how the can best be accommodated or restricted for sustainable development.
- It stems on the need to benefit the one involved and with institutional mandates based on the cultural wherein it originates and not an intrinsic property of the innovation and participation means.
- Provide a firm basis for defining appropriate objectives and variables for intervention to support urban agriculture integration into land use planning for reduced urban poverty and environmental conservation.
- Help someone to use PUT as a classification tool helping bridge the bioecocultural gap in thought and instrument design that impedes effective application of agricultural research to sustainable development.

The deployment of PUT framework premises in this context helps:

- The investigator to better understands how and why actors need to interact with each other for social capital (i.e. assets) building and meeting sustainability aims.
- To understand how technology and communication can alter smallholder farmers' interaction with other planning institutions interaction for improved urban land governance.
- To examine planning institutional arrangements that help in identifying useful policy interventions and practical gaps agenda for the nation and smallholder farmers' interests.
- To provide insight on understanding the land use location, allocation, use and the associated conflicts
- To explore the impacts of mixed land use in a selected case study area to bridge the bioecocultural gap.

The classification of bridging the bioecocultural gap was done during the sampling where the sampling frame distinguishes between urban and periurban settlements. Nevertheless the levels of land use planning including operational, administrative, managerial and decision-making levels were discussed (Chapter eight, Figure 8.1).

Iaquinta *et al*, *ibid* show that using PUT framework all externally introduced change carries embedded values. Following this argument, exploration of study populations, area of origin, tribe, age and settling period in both urban and periurban locations was done. This helps knowing something about people's institutional context and their receptivity to innovation, change and migration trends for future city land development and contribution to theory. The evidence from the corresponding institutions observed during field investigation context, evidence and links as presented elements established in the analytical framework (Figure 3.3).

Characteristic features and assumption

The theory[16] (PUT) provides five Peri-Urban (PU) types namely: Village periurban (PU), Diffuse periurban (DPU), Chain periurban (CPU), In place periurban (PU) and Absorbed periurban (APU). The theory build from assumption based on:

- Demographic component (i.e. increasing population size and density)
- Economic sectoral component (i.e., a primarily nonagricultural labor force)
- Social psychological component (i.e., consciousness of what it means to be *urban*)

Iaquinta *et al*, *Ibid* shows that major characteristics that can be established to distinguish different institutional context include:

- The degree of homogeneity/heterogeneity in the resident population in terms of where they are from (shared culture) or origin.
- The degree of perceived belonging or social integration among the residents
- Understand the socioeconomic setting

[16] *Iaquinta and Drescher (2000) show the term periurban is less a geographical location but rather a state of mind or change in mental orientation. The periurban may be a state of mind or a zone, but it is a physical place. For example, areas that are being subjected to strong demand pressures because of urbanisation; these may be in close proximity to the city or further away from the city (in-place or village periurban). A part from that areas that were outside the city limits but have now been absorbed by city due to urban expansion (absorbed periurban) and freehold farms within and outside the urban boundary and squatter settlements within and outside the urban area limits (diffuse periurban).*

- Understanding city and case study spatial structure and development patterns. This is important in understanding urbanization dynamics and its influences on livelihoods diversification assets for smallholder farmer in the city.

Building on this theoretical setting, the study examined the spatial development of Dar Es Salaam city and the case during the preliminary stage where the mentioned variables characteristics were observed (Chapter four). Specific characteristics of the selected proposed and selected study areas were documented. The documentation entails socio economic, existing situation and extent of agriculture practice and problems. Equally important, settlement similarities and differences were established based on the study context. The characteristics help providing insights of the city's development and space utilisation and organisation. Housing development and density were also noted through observation and informal discussion with some landholders in both urban and periurban settings. The unorganised forms of settlement growth and spatial pattern in the city, which differ from the European one, which looks more organized (Chapter nine) discussed. In addition, following the above assumptions and guidance, the study has established these variables during the questionnaire design and subsequent field survey (See appendix).

There are several forces that can support smallholder household farmers to access assets including land. Some forces noted are supports and others are constraints e.g. technology. According to Sanderson (2000:98), there are two important constraining forces. These include those from the person's position (i.e. gender, culture, being poor) in the society and the control of resources by transformation structures[17]. In this context transforming structures are referred to as institutions and organisation. The definition of the two concepts is problematic. North (1990:8) defines institutions as a set of norms guiding normal conduct of the society (Sect 2.5). In this research, these include policies, legislation and regulations guiding land use planning and urban agriculture practices. Organisation is the whole system in which roles of actors are defined for proper functioning as applied in this context.

According to Rakodi (2001:210), the most important institutions which can facilitate or constrain livelihoods as capital formations for reduced urban poverty are:

- Economic and labour market conditions
- Programme of support for livelihood activities in this context urban agriculture
- Community Development
- Tenure and shelter policies
- Health care and environmental sanitation programmes
- Spatial planning
- Access and infrastructure policies and
- Governance

It is argued that once constraining factors are minimised, households including urban poor-smallholder farmers in this context are likely to mobilise their assets and engage in land use planning and urban agriculture practise. This helps inn getting their land secured, meeting basic needs, such as food, clothes, shelter, education, health and in building their assets for the present and the future generation. In this context smallholder farmers' assets identified include inputs used for farming, financial, physical and social assets. The identification of these assets as social capital provides sustainable ways of land use planning and urban agriculture integration. A part from that explores the best way in which

17 Shankland (2000:9) refers this differently including "institutions and organisations' "policies, processes and structures" or policies, institutions and processes.

the urban poor can be facilitated or organised for enhanced agriculture production. The PUT analysis and variables show the importance and its linkages and connections with livelihood diversification, urbanization dynamics and social capital, which trigger changes in urban growth and development needs. Therefore it is one of the theories in planning to achieve the objective of improved urban land governance explained.

3.2.2 Location theory

Location theory deals with the localisation of areas. Accessibility in this theory is important, as an integral part of urban development (Dicken, 1990:3; Handy *et al*, 1997:1175). People have always endeavoured to live in locations that optimise access to various utilities such as production, food, sales, purchases, guilds, family, care and leisure activities. According to Johnson (1989:2), four basic factors determine the location of larger concentrations of people in a city. The central or "*focal*" city has to be within a reasonable distance to the people requiring its services. Good traffic connections and the existence of natural resources are also optimal. Likewise, the unpredictable factor of individual preferences, which cannot be foreseen or taken into account, contributes. In this study, the theory helps understanding the smallholder farmer's access to market areas, location of the study settlement, their characteristics and attributes of actors and linkages. The linkages of smallholder farmers in residential neighbourhood to market areas, location of their farming lots and farming system used were documented potential in urban planning practice.

The best-known model of location theory is the central place theory developed by Walter Christaller in 1933**.** In its simplest form, societies are evenly spread in a larger hexagonal Pattern. The central place in the hexagon is occupied by a larger and more specialised town, which in turn is equidistant from a similar central place and so on. Such a hierarchy illustrates the market principle, where the most important factor that determines the spread of urban societies is the need to be as close to the market as possible. In this study this was important for understanding how smallholder farmers involved in urban agriculture sell their products and get access to market information. Equally, linkages and network created by the landholders to other non-farming actors who are consumers.

A further development of Christaller's theory, by Garrison and Berry, is the study of the factors that are decisive for the spread of central places, one of which is the distance people are willing to accept in order to reach a particular utility. The upper and lower limits are determined by the competition from other central places with the same services and the threshold value required for the utility, respectively. This helps in understanding the urban rural continuum in how the exchange of goods and services play great role in improving social welfare of the urban poor in this context.

The explanation shows that location theory is closely connected with the PUT already discussed, which also deals with urban location, growth and urban design. The size and design of a city have always been limited by the accessibility it can provide to work and trade. The theories that have been developed regarding urban growth and the distribution of inner functions such as concentration theory, sector theory, multiple nuclei theory and gradient theory (Johnson 1989:90), can, therefore, in spite of their geographical origins, be seen as economic theories of individuals' and firms' assessment of different types of accessibility. The geographical roots are apparent in that the natural geographical prerequisites (e.g. topography) are regarded as physical limits to the desired urban organisation. Although societies have existed for thousands of years, the structures dominating modern urban

societies are scarcely to bear the indented results of integrating urban agriculture in land use planning and management.

When studying urban development in this context, a distinction has been made between the forces behind the urban spread before and after independence of Dar Es Salaam City (Chapter five). Walking and working within a reasonable distance is a prime important criteria in urban land use planning objective intends to achieve. This is connected with transport cost and important services immediate vicinity of the city itself or just beyond as impacted to smallholder farmer in the city. This implies considering proximity to infrastructure services when preparing and implementing land use plans for sustainable land governance in cities.

Location theory explains the need for ensuring urban structures that in most Sub-Saharan cities are unplanned and sometimes developed naturally over time. Concentricity theory *inter alia*, in the late 1920s (developed by E.W. Burgess) was based on the perception that urban development occurs outwards from the centre and creates a series of concentric zones. In reality most urban developments were star-shaped rather than concentric, but advocates of Burgess' theory maintain that, if mere distance is replaced by time distance, the pattern will be concentric or radial.

Sector theory dates back to 1939 and is associated with H. Hoyt and M. R. Davie. According to this theory it may be assumed that particular functions developed outwards in the shape of segments from the centre. This shape depended largely on the shape of the transport network. Another, more complex, theory is the multiple nuclei theory, in which similar functions are grouped together in clusters. CBD is located where accessibility is most favourable.

In all the three location theories in planning, it is apparent that location of the city or settlement setting and accessibility constitutes explanatory factors for coordinating and controlling city land development. Concentricity theory observed to optimise accessibility to the city centre, sector theory optimises accessibility according to the transport network, and multiple nuclei theory optimises accessibility by means of clusters of similar and related functions. It is in these regards where understanding location of the case study areas in the City of Dar Es Salaam, their characteristics, attributes of actors, distance of smallholder farmers to market areas and the cost involved observed important in the course of investigating options for land use planning and urban agriculture integration. Not only the integration options, but also suggests the rationale to promote, link and enhance food production and ensures sustainable development in the case study areas and the city of Dar Es Salaam.

The theories discussed above have shaped the way different land uses and urban forms have emerged. These theories are adhered by urban authorities and development partners, who tend to influence the policy agenda formulation and improvement. By clarifying the linkages and the potential role of land use planning and urban agriculture one can accept the integration and articulate it clearly in urban development policies and implementations. What we can see in all is that there are pressures to improve land use planning process that integrate the farmers. The most important includes understanding pressures exerted from Institutions and their roles, process and decision making, location and population changes, livelihood and social capital within the study settlements explored. Others include pressure on markets, social interaction building, information and involvement (Figure 3.1). All these provide important elements to measure towards understanding land use planning processes and structure and how they can improve smallholder farmer's lives.

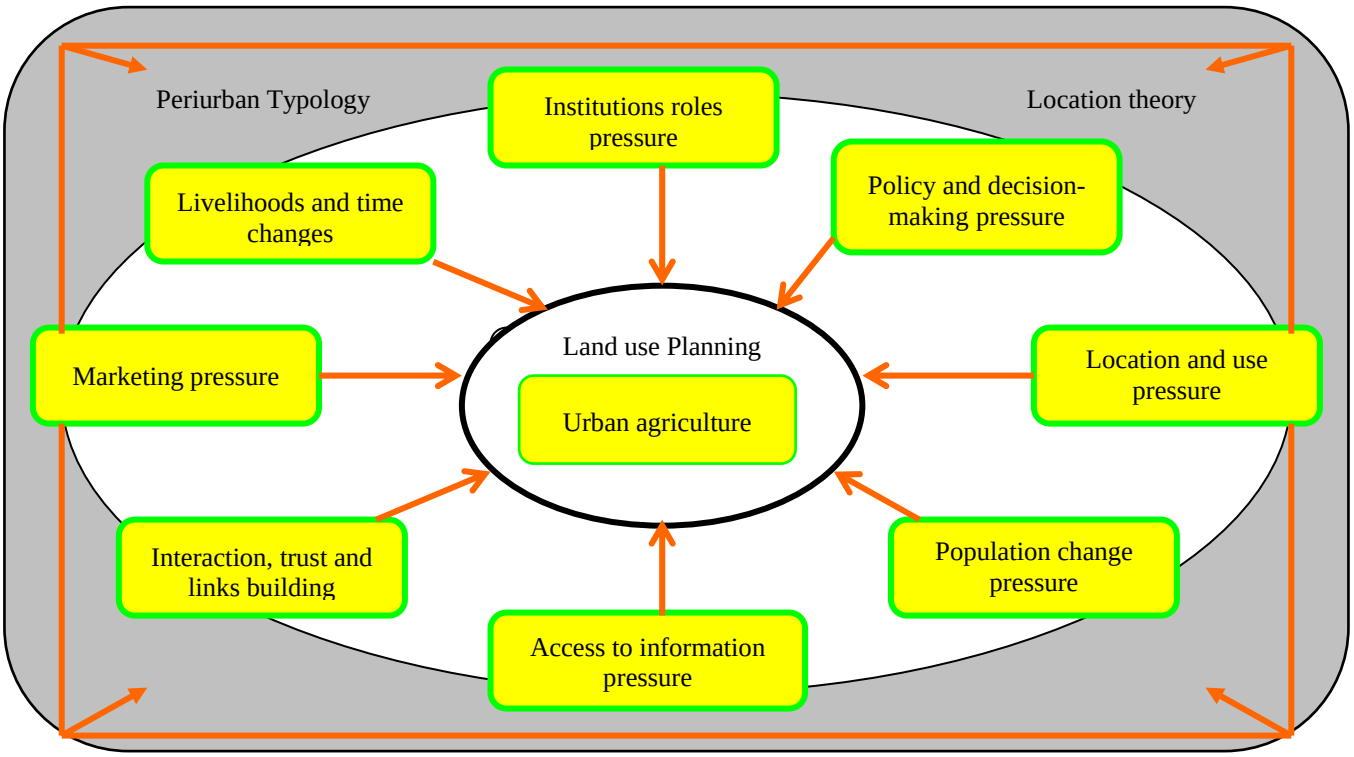


Figure 3.1 Combined theoretical framework.

3.3 Concepts and conceptual framework

Lundequist (1999:27) shows that understanding the concept related to a discipline are rational in data analysis and development of scientific work. In supporting this argument, Nordenstam (1975:12) shows that identifying and analysing the concepts demonstrates the necessary and sufficient conditions for the correct use of the term. The term, expressing the concept of the correct use helps building the conceptual framework of the study, which guides the research conduct. Nordenstam (*Ibid*) defines the minimum level of conceptual competence, which a participant in a practice ought. Particularly in understanding of the reality, which the concept refers to and to have mastered a sufficient number of features of which the concept refers. Others include being able to use the concept rationally in different situation, be able to speak, write and use.

Concepts can be developed from the hypothetical idea topic, which give key variables to be reviewed in literature and reflected in the field survey in question. The review of the literature helps identifying the gap to be studied and therefore the objectives, which change once the research moves from assumption to reality on the ground**.** Once the topic is identified, however crude it is, it helps identifying the key concepts and keeps narrowing the focus and developing the strategy for its meaning as more evidence is gathered. Concepts also help to understand, define and to provide the meaning of the terms used. It is in this belief; a strategy and not a method of classifying the concept can be developed. Four main concepts carry this study namely urban land use planning, urban agriculture, integration and improved urban land governance. The definition part provides definition of the word land use planning and urban agriculture. The two concepts namely integration and improved urban land governance are discussed:

Integration

Mougeot (2005:31-32) and OECD (1998) show that for ensuring urban agriculture is integrated in urban planning for sustainable land development, institutional actors need to recognize the multifunctional character of urban and periurban farming. Likewise, recognise the advantages it brings to the urban community. Secondly, policy must encourage intercommunial approach and be nationally decentralized. Thirdly, experts interaction with smallholder farmers in their farming areas is rational. This shows clear linkages and elements, which need to be instituted in coordinating and decentralising urban land use functions for effective urban land governance. The integration of urban agriculture in urban planning is a basic need towards improving lives of the urban poor in cities. It takes human nature historical trends, urban planning and settlement design analysis towards integrated manner.

According to David (1995:200), the concept of integration involves:

- Abandon sectoral approaches and integrate conservation and development
- Retain options which refers to management ecosystem in such a way as to safeguards options for utilization in the future
- Attend to impeding problems which could be worse than current ones and
- Focus on causes as well as symptoms

In addition, Hobley and Shields (2000) contribute that in understanding integration of urban agriculture based livelihood in urban settings there is a strong need for understanding and analysing institutional roles and the relationships between different institutions. Similarly, understanding institutional functions, characteristics, structures, and relationships existing with the urban poor-i.e. Smallholder farmers are important for increasing city productivity. North (1997) observes that policy decisions of enabling agencies reflect the needs and priorities of the poor, and are translated into services delivered to the poor and “users”. Equally, North (2000) shows that what relationships exist between these different groups and what factors influence those relationships will help to appreciate the complexities surrounding sustainable integration in policies, laws, institutions, and identify ways in which they might be “addressed” and influenced in urban planning and management are rational. In addition, in trying to summarise the key component of integration concept, Jacobi *et al*, (1997:53) and Van den Berg (2002) show that when analysing integration issues, it is useful to understand social, economic, environmental, cultural and technological underpinnings on how to achieve sustainable development (Table 3.1).

Table 3.1 Dimension of sustainability of urban agriculture

	Environmental	Economic	Social	Health
Synergy	Plant nutrients in urban waste and sewerage Health aspect in context of urban greening	Access to inputs & Markets Amenity Employment & poverty alleviation Lacks extension services	Meeting human needs for green (recreational) Urban space	Malaria mosquito breeding colony Hardly integrate waste and soil management
Conflict	Urban pollutants in Agricultural produce Agrochemicals in urban Environment Urban greening & nature borne diseases	Competition from urban Land use systems Vandalism & theft	Negative perceptions of urban agriculture	Disease occurrence Little information available for UA hazardous

Source*: Axel W. Drescher quoting Van den Berg, 2002:565 with some modification.*

World Bank Institute (WBI), (2005:21) shows that integration concept rationale is important to build local capacity in land governance. The approach emphasizes rigorous diagnosis and analysis, policy advisory services and collection action. This concept links action-learning methods to empirical diagnostic survey and policy applications through collective action at the local level. In this research a number of themes were established and subsequent field surveys to different target groups were identified and conducted, where lessons drawn and are presented by each case study. In this context integration conceptualised as a holistic approach, where different planning institutions involve in determining the future goals of urban development which take into account the urban poor. It is in this context where integration as defined widely by different authors becomes essential to the study.

Improved urban land governance

The words "Sustainable" and "Sustainability" have been common in current urban planning debate. It seems to be a birthright of Brutland conventions of 1987, which later resulted in Rio-de Janeiro Summit in 1992, where sustainable use of resource for the present and future were insisted. In ensuring this the question of exercising the rule of law to maintain the order and manage cities also insisted in various national and international agenda. This includes emphasis in Millennium Development Goals (MDGs) of 2000. With the MDGs the words "Governance' and 'Partnership' are included. But why concern with Urban? This means when dealing with urban you deal with issues of ensuring a liveable, safe and productive city in terms of resource utilisation, settlements development and improving lives of the people. Thus, the word "*Urban*" becomes important in this context.

What is urban governance? After seeing the rationale of resource use and the need for maintaining and enhancing city productivity, the issue of governance is rational to exercise and govern different resources within an urban area and its hinterlands. The question of rural urban symbiotic relation and need to address urbanisation challenges in cities emerged in policy agenda. Different institutions therefore have defined urban governance widely (World Bank, 2006**;** UN-Habitat, 2004a; 2007). It includes the system of involving many authorities, administrative, political, social, religious and

traditional ones who take part in the management of a city beyond official authorities (Piermay (2000:31) in Drescher *et al*, eds.2000). But why is land included in urban governance?

Land as a resource is of particular interest in urban planning and in this study for improving lives of the poor. It concerns planning what, when and for whom. The question of orderly utilisation of land for maximum city advantages through using land resource becomes important. Therefore careful planning and involvement of different interested stakeholders, structures, resources and appropriate methodology is a demand for sustainable use of land. But one could wonder what is improved urban land governance within urban governance? I prefer usually the concept of improved urban land governance rather than improved urban land management. Urban land management deals with a system of coordinating and controlling land issues where land development and tenure systems become important. But improved urban land governance in this context considers land development and tenure systems coordination and control for improving the lives of the poor, but also technical supplying of services, for example water and electricity and deals with the issue of alleviating urban poverty for community development in a holistic manner. It has high resource use and political signification, being to smallholder farmers, development partners or central and local government authorities, to answer and share values with people's requests for present and future benefits. It includes also the idea of authority, legitimacy, interaction and power building within vertical and horizontal processes between authorities and grassroots.

In the improved urban land governance appropriate planning approach and method, actor's attributes and their roles, strategies and tactics for implementation, conflict resolution and arbitration protocols and mechanism of de facto regulations are put in place. It is a remarkable way to observe the changes occurring in a society. And because the city is a main issue in the African society of today, taking into account urban land use planning and urban agriculture practice and needs for their integration, urban land governance objectives earlier explained may be achieved (Chapter one). The Conceptual framework (Figure 3.2) summarises the key variable drawn from the literature review, theories and conceptual definitions important to guide the study context. Similarly, other variables observed in the survey, which looks to influence, the study phenomena under investigation were taken as it contributed to the understanding of the study phenomenon.

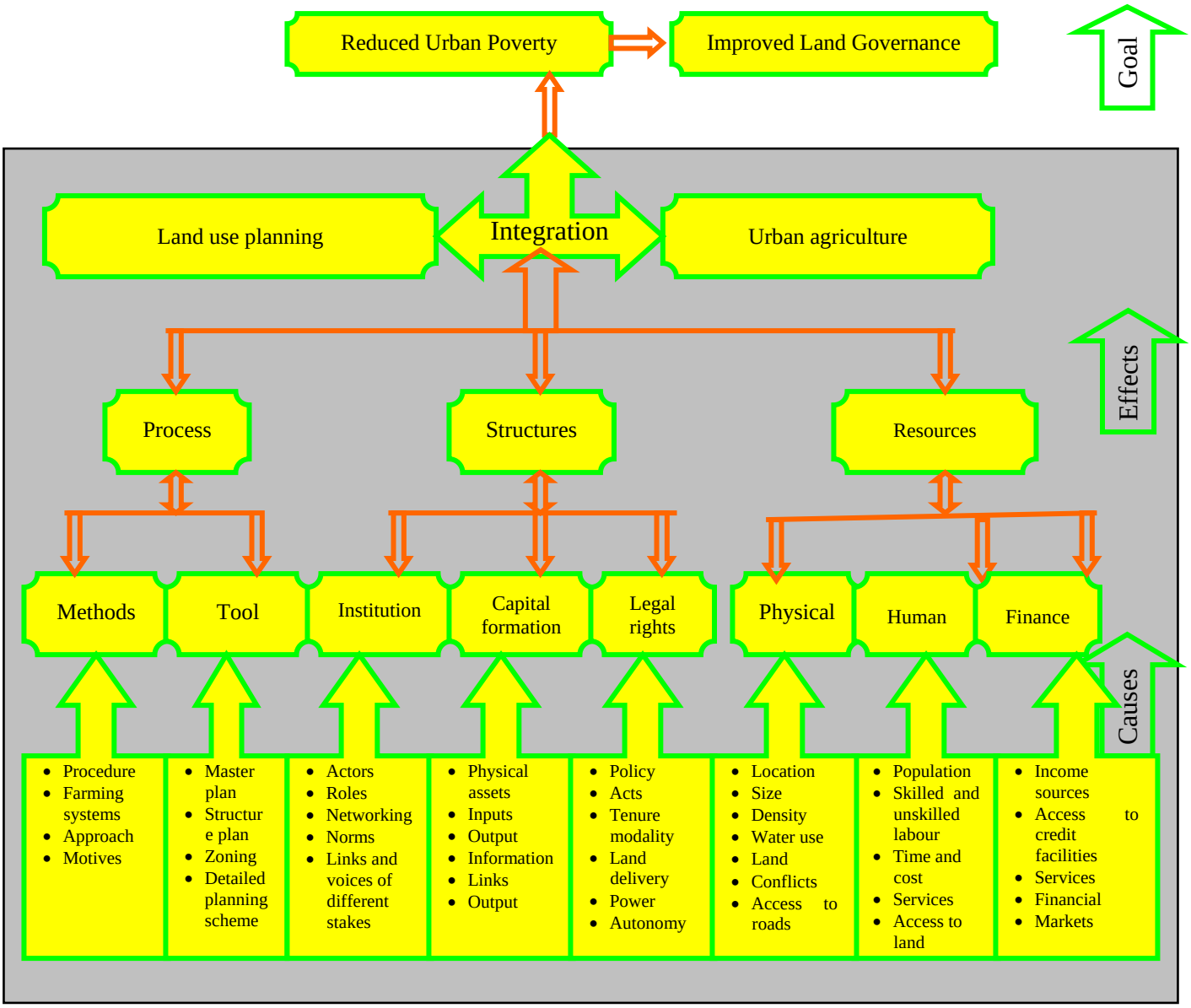


Figure 3.2 Conceptual framework.

3.4 An analytical framework

The study specifically, analyses the land use planning practises in view to processes, structure and resource mobilisation (Figure 3.3). The analysis framework is based on the context, evidence and links potential for understanding on urban planning and management practice, influencing factors, links and options for effective integration of urban agriculture in spatial land use processes.

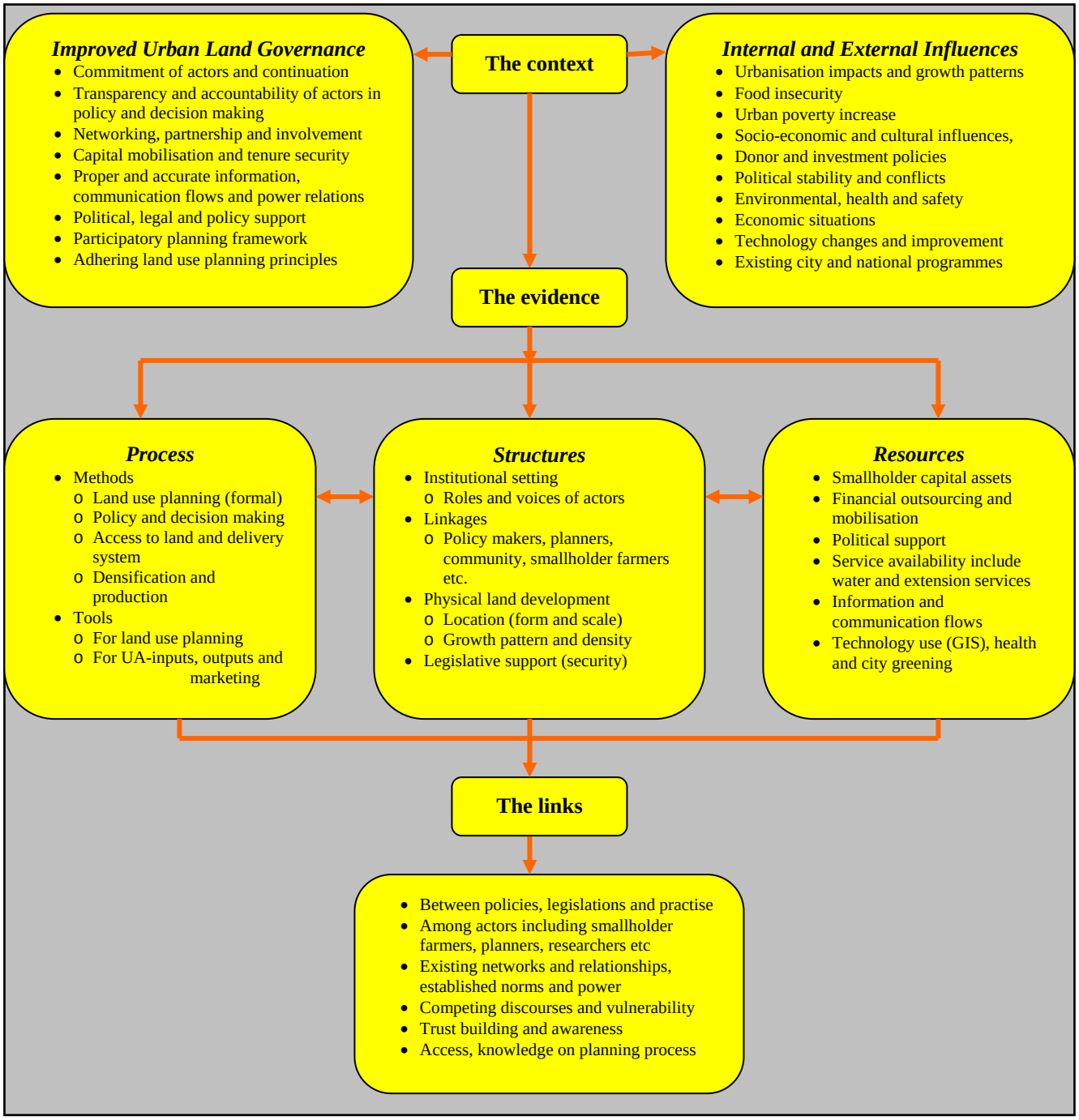


Figure 3.3 Analytical framework.

Towards addressing the above analytical framework, a list of important questions was formulated, which helped to guide the data collection and analysis (Table 3.2).

Table 3.2 Questions guiding the analytical framework formulated

What do we need to know?	What do we need to do?	How do we do it?
The Context		
Improved urban land governance		
- How do policy and decision making take place in practise? - How do different stakeholder act? - How are the divergents? - What are the weaknesses/ opportunities? - Are the stakeholders' voices relevant?	- Establish policy and decision making processes - Present divergent areas - Determine weakness and opportunities	- Balancing formal and practical needs for improved urban land governance - Determine the degree it challenges theory in practice - Find ways to consolidate and secure
External and internal influences		
- What are the factors hindering the practise? - Are the factors relevant? - How the land use planning practises are integrated in city and national programmes	- Establish factors - Establish credibility - Determine how the practise is integrated in city and national programmes	- Establish ways the factors can be opportunities for integration - Find ways it fits in current practise - Options already in place if any
The evidence		
Processes		
- How is spatial land use planning done? - What are the tools used? - What are the weaknesses and opportunities? - What is the current theory? - What are the practises? - How are the divergent is it? - Are the stakeholders' voices relevant? - Is it practically useful for improved land governance? - What are the practical experiences from smallholder farmers than can help change?	- Establish credibility - Provide practical solutions - Establish legitimacy. - Present clear options - Use familiar narratives. - Spatial land use planning and governing structures - Comparing theory and practise for improvement	- Help to build a reputation - Think on action-research - Good communication and publications of the findings - Establish planning framework for integration
Structures		
- Who are the key actors? - Who are the stakeholders? - Is there demand for ideas among actors and stakeholders? - What is their agenda/voices of planning institutions? - How divergent is it? - How do smallholder farmers influence the political and policy context? - How do different stakeholders perceive the problem? - What forms of physical development suggested?	- Get to know the processes involved in land use planning - Getting to know how the agriculture practise is organised-location, actors, access to land, market and information - Get to know the policymakers. - Prepare for policy opportunities. - Look out for policy and research windows. - Understand voices of different stakeholders affected, benefiting and with institutional and	- Work jointly with planning institutions and smallholder farmers – seek to know what they no, what works and what does not work - Strategic opportunism, prepare for known events and resources for other - Identify integration options within a policy and practical agenda to meet demand for all interested parties. - Balancing voices and factors from different stakeholders interested in sustainable use of land

	decision making mandate	
Resources		
- What are the smallholders' assets? - How are financial mobilisations for the practise done? - What are the external supports present? - How do they access services including water and land - Which strategies are used for communication and information flows? - What technology is available to facilitate the practise?	- Establish smallholder assets - Ways of financial mobilisation and capital - Present support for the practise - Type of service and means for access and distribution - Present communication and information flows - Available technology for production and controlling land development	- Smallholder assets and links identified - Financial and capital mobilisation established - Willingness and support from different actors if any present - Water, land and credit service availability, condition established - Communication and information strategy established - Use of technology identified
The links		
- Who are the stakeholders? - What networks exist? - Who are the connectors, salesmen and consumers? - Are there existing networks? - How best to transfer the information and resources? - What are influences of geographical setting to actors?	- Get to know the others - Work through existing networks. - Build coalitions. - Build new policy and land use planning networks.	- Build partnerships. - Identify key net workers, mavens and salesmen. - Use informal contacts - Think of adding value - Options for integration established

3.5 Reflections

The theories and concept reviews provide insight on key elements explored within the field. These include land use planning and urban agriculture processes and structures and outcome implementation based on but not limited to the resource availability. The session reviewed the periurban typology and Location theories in planning. These were important in collaboration with conceptual definition to provide variables and linkages important for study exploration to promote urban agriculture in the urban setting. The next chapter provides the methodology used to conduct this study.

CHAPTER FOUR: RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

The previous chapter discussed the theoretical and conceptual framework premises underpinning this study. This chapter discusses research design, methods and methodology used. The discussion includes meaning, strategies, study areas and their selection, choice of research strategy, data collection methods, analysis, interpretations and representations. Similarly, research processes and reflection on the contribution of the chapter are discussed.

4.2 Research design

4.2.1 What is research design?

According to Yin (1984:12), research design is the logic that links the data to be collected and the conclusions to be made to the initial questions of a research project. He set prescribed principles, which are important for consideration:

- Elaboration of the case study design, especially the definition of a set of questions to be answered during the study as represented in the analytical framework
- The data collection phase: Shows the use of multiple sources of evidence, the use of case study protocol, a tool that guides the investigator during collection and analysis of data and the establishment of a chain of evidence that links the research questions to the data and to the final conclusion principles
- The data analysis phase: This includes analysing the evidence. It involves examining and classifying the collected data, in order to check the validity of the initial proposition of the study. Yin recommends three types of analytical techniques. These include pattern-matching involving comparing a pattern of events found during the empirical data. Second, is explanation building involving gradual building of explanation from events and last is time-series analysis- which follows a course of logically linked events.
- The final phase: In this respect, Yin puts an emphasis on the importance of the case study report, which according to him should not be considered just as a description done after the completion of the project. He shows that when conclusion are made and answers to the initial research questions are given. He therefore suggests the following principles of report writing
    - The target group for the report must be identified from the start
    - The compositional structure of the report should be developed as early as possible, and
    - The report should be reviewed not only by the research community, but also by the people who have been involved in the actual case

The study adopted this case study protocol and therefore the following steps were taken:

- Selecting study areas where different characteristics explored and target group identified
- Priority setting and ranking were done that confirm settlement selection potentials
- Establishing themes to be explored. This was important to provide type of data to be collected, tools to be used and identifying respondents for information giving
- Perceptions of different actors within the settlement dealing and those who do not deal with urban planning practise including agriculture within and outside the areas interviewed
- Furthermore data triangulation was done to check the reliability and validity of the collected information and analysis that pave a way for generalization and report writing

4.2.2 Research strategy and rationale

Different commentators discussed research strategies and their use in knowledge generation. These strategies include an experiment, a history, simulation and case study, which seem to be important in research exploration. Furet (1971:152) shows that none of these first three strategies mentioned linked to a particular type of evidence or method of data collection. First, shows that there are some experiments, for instance in biology and neuroanatomy that use the qualitative evidence and for what statistical analysis is irrelevant. Experiment also differs from others in that it deliberately divorces a phenomenon from its context (Yin, 1984:8). Similarly, in the field of history, the use of quantitative indicators has been increasing. Histories differ in that they are limited to phenomena of the past, where relevant informants may be unavailable for interview and relevant events unavailable for direct observation. These distinctions among type of evidence, data collection methods, and research strategy are critical in defining case studies (Kuhn, 1970:12; Bless *et al*, 1995:66). Yin *et al*, (1980:59-60) show that different types of case studies are possible descriptive and explanatory. Secondly, he shows that the type of research questions are best addressed by case studies as opposed to other research strategies (explanation rather than incidence questions). Cook *et al*, (1979:78) supports showing that there will always be too many variables for the number of observations to be made, if the case study design does not cope with the problem, that also can make standard experimental and survey design irrelevant.

Case study strategy

The study used case study strategy for its investigation. As a research strategy the distinguishing characteristic of the case study is that it attempts to examine contemporary phenomenon in its real life context. Especially, when the boundaries between the study phenomenon and context under which is taken are not clearly evident. Land use planning and urban agriculture integration study phenomena, for a long time in Sub-Saharan Africa cities, knowledge on its effective inclusion in urban planning and management has been limited. No clear evidence for the current practice as why these happened in Tanzania for example as already the policies and legal documents recognises the potentiality of the two. This shows the importance of the case study strategy used in this study where three study areas were taken in the city of Dar Es Salaam to show the extent and magnitude of the problem and give the way forwards.

Patton (1987) states that "*Case studies become particularly useful when ones seeks to understand some particular problem or situation in great depth and where one can identify cases rich in information. It is rich in the sense that, great deal can be learned from few exemplars on the phenomena in question*". In support, Yin (1994) shows that:

- It is preferred when casual relations are to be established, when multiples of evidence is used, and when the investigator has little or no control over events happening.
- Based on contemporary phenomena within its real life context.
- Often concerned with factors in the context, since the research is time consuming the number of cases to be included should be limited to provide clear lessons for its replications.
- Methodology might be explorative, descriptive or explanatory.
- The components of a case study are: the case study questions (what, why, who, where, when and how): the case study unit of analysis, as related to initial research questions, the procedural logic linking the data to the prepositions and the criteria for interpretation the findings.

- It allows an investigation to retain the holistic and meaningful characteristic of urban management practice, neighborhood change and organizational relations. It also allows full variety of evidence, documents, artifacts, interviews and observations.

Following the author's arguments, the study employed case study strategy to explore the case, where both qualitative and quantitative narratives used. It followed the case study protocol explained previously and was justified by the nature of the research problem, objectives and hypothesis put in place. Explanations with direct quotation-in this context set to comprehend qualitative nature of information throughout the discussion (For example see also 4.3.2).

4.2.3 Sampling and sampling frame

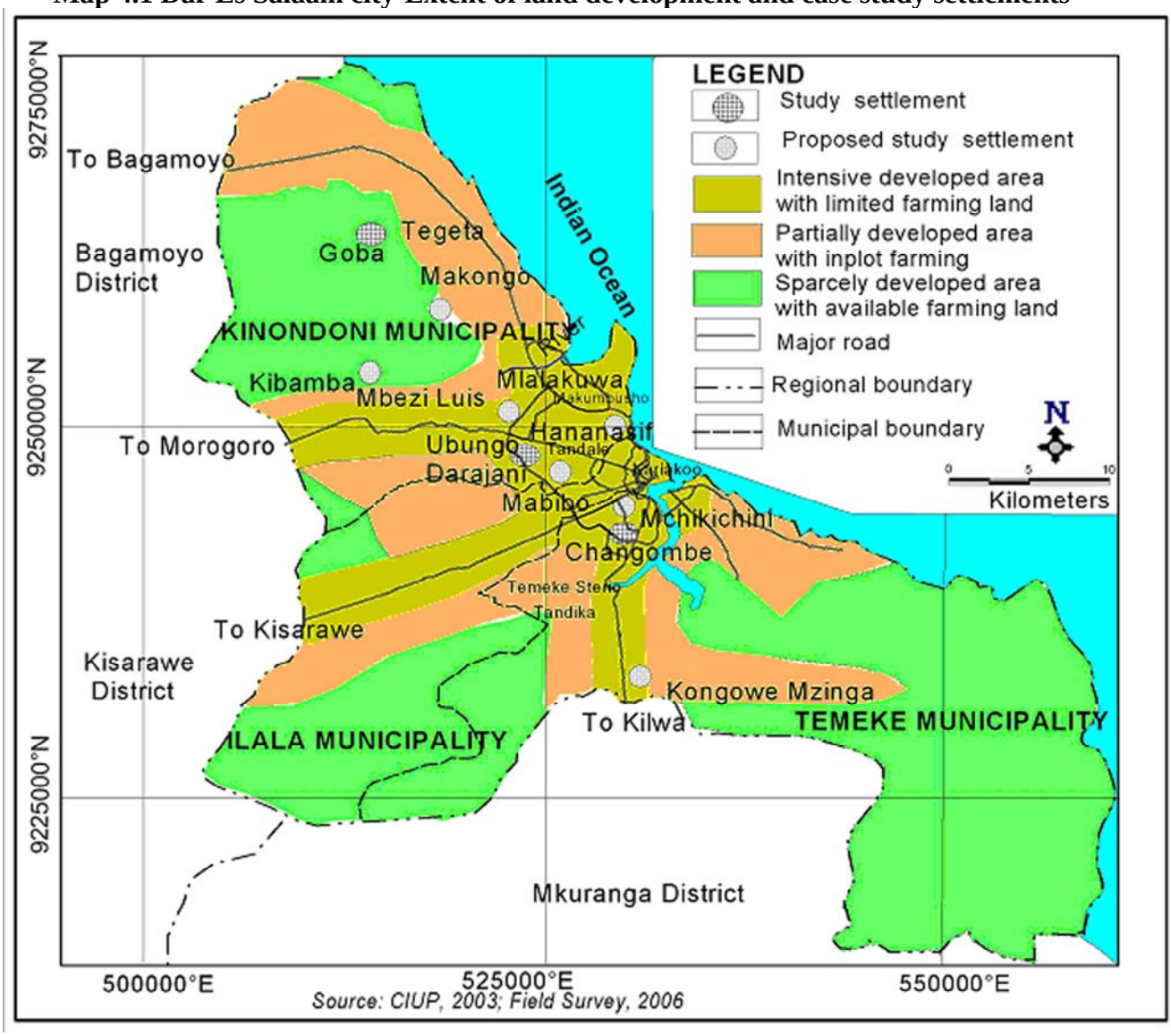
A list of 9 settlements in the city of Dar Es Salaam was proposed as a sampling frame (Map 4.1; Table 4.3). Criteria were set for their selection (Table 4.1; 4.3). These criteria and subsequent case selection were done through a consultative dialogue between the investigator and the Municipal urban planning and agriculture extension officers in the three municipalities of Dar Es Salaam, namely Ilala, Temeke and Kinondoni. After ascertaining the sampling frame, these settlements were then separated from the urban and periurban setting during reconnaissance and subsequent fieldwork survey. Location and institutional setting characteristics were observed during the reconnaissance and study selection.

Table 4.1 Sampling frame and population

Locale	Settlement population	Sub wards within Settlement	Area	Total households	Sampled population (11% of total H/H)	Population interviewed	Location from the city centre
Dar Es Salaam	2,497,940	73 wards	1350 km square	416,324	49,959	0.8 % of the total city H/H	-
Ubungo Darajani	5600	Ubungo Darajan	26 Ha	934	103	103	9 km
Goba	4,720	Mchigani	60 Ha	787	87	87	28 km
Changombe	8,712	Chang'ombe "A"	187.64 Ha	1,452	160	160	14km
Development partners						2	-
Adjacent settlements						10	Within the city
Consumer and marketers						30	Within the city
Governments, Institutions and utility agencies						58	Within the city
Total					350	450	

Source: *Fieldwork survey, (2005, 2007); Aerial Maps, (1992); (URT) Human Population Census Report (2002).*

Map 4.1 Dar Es Salaam city-Extent of land development and case study settlements



The sample frame for interviews comprised but not limited to individual households involved in urban agriculture production, Village leaders (i.e. Sub ward and Ward government officials), and Local authorities i.e. Temeke, Kinondoni, Ilala, City Council (Table 4.2**)**. Others include Government Ministries (i.e. Ministry responsible for Lands, Ministry responsible for health, agriculture, environment and local government). Utility agencies, Institutions such as Tanzania Horticulture Authority and financial institutions were included. Equally, development partners including donor communities, civil society organizations and vegetable vendors in the city of Dar Es Salaam markets were earmarked and interviewed. The financial institutions were important in this context for tracing how far they are involved in promoting urban agriculture and settlement improvement for the urban poor in view to poverty reduction. Similarly, this helps to understand smallholder farmers' access conditions and links to credit facilities, market sellers and consumers.

It should be noted that the total population interviewed represents only 0.8% of the total household population in the city of Dar Es Salaam (Table 4.1). The sampling meant for getting representative

case studies that depicts the current urban reality of land use planning and urban agriculture practise for learning. The result in the three contexts can be replication in areas of the same context and contributing to policy agenda formulation and improvement. Thus, case study protocol and stakeholders voices and perceptions in the selected study areas were considered. The table below shows details of respondents interviewed during this study in the city with gender considerations:

Table 4.2 List of respondents

Target population	Category	Sub Category	Respondents	Category with gender		Remarks
				M	F	
Stallholder farmers	Landholders	Within the settlements	170	72	98	More women involved in farming
		Outside the settlements	30	12	18	More women involved in farming
	Tenants	Within the settlements	70	28	42	More women involved Farming
		Outside the settlements	26	14	12	
Vegetable market sellers and consumers	Whole sellers	In city markets 2 for each market	10	1	9	Kariakoo, Temeke sterio, Kisutu, Makumbusho and Tandale involved
	Retails sellers	In city markets	10	2	8	-do-
	Consumers	In city markets	10	5	5	-do-
Residents non involving in urban farming	Landholders	Within the settlement	40	31	9	For three case study areas
		Outside the settlement	3	2	1	Case study areas adjacent areas
	Tenants	Within the settlement	14	6	8	For three case study areas
		Outside the settlement	3	2	1	Case study areas adjacent areas
Local leaders	Tencel		3	3	-	In Ubungo, Goba and Chang'ombe
	Mtaa chairman		3	3	-	In Ubungo, Goba and Chang'ombe
	Village Executive Officer (VEO)		1	1	-	Chang'ombe
	Ward Executive Officer (VEO)		3	2	1	In Ubungo, Goba and Chang'ombe
Civil Society Organisation	Ubungo Darajani Community Based Organisation		3	2	1	Ubungo Darajani
	Tanzania Horticulture Organisation		1	1	-	Assistant administrative officer
Utility agencies	DAWASA		1	1	-	Operation manager
	TANROADS		1	1	-	Manager
Donor Community	UNDP		1	1		Country Representative
	UNHabitat		1	1		Country Representative
Higher learning institutions	UCLAS		2	2	-	Dr and Professors
	UDSM		4	3	1	Dr and Professors
	SUA		2	1	1	Dr and Professor
TFNC			1	1		Director
Financial	CRDB		2	1	1	Clark and 1 client

Target population	Category	Sub Category	Respondents	Category with gender		Remarks
				M	F	
institutions	NMB		2	1	1	Marketing officer and 1 client
	SACOOS		2	1	1	Financial controlling officer and 1 client
Tanzania investment Cooperation	TIC		1	1	-	Heads of section of foreign investment and marketing
National Housing Corporation	NHC		1	1	-	Documentation officer
Local government	Kinondoni Municipality	Planning, agriculture, health, land and environment departments	5	3	2	5 from each municipality Head of departments
	Ilala	Planning, agriculture, health, land and environment departments	5	4	1	-do-
	Temeke	Planning, agriculture, health, land and environment departments	5	3	2	-do-
Central Government	Ministry for Lands	Land development, policy, strategic planning, surveying and land registration sections	5	3	2	Heads of sections
	Ministry for Local Government		2	1	1	Director and senior town planner
	Ministry for Health		1	1	-	Assistant administrative officer
	Ministry for Livestock and Agriculture		2	1	1	Heads pest management and crop improvement section
	Ministry for Tourism		1	1		
	President Office of environment		1	1		
	Ministry for Planning and privatisation		1	-	1	
	Ministry responsible for Water		1	-	1	
Total			**450**	**220**	**230**	

Table 4.2 shows that women are the majority involved in urban farming activities in the city. This proves the need to empower this group with respect to access to information, land and markets. The study findings also point in this direction.

Sampling

A combination of purposeful and random sampling was deployed to explore the case. Purposeful sampling was deployed during the case study selection and identification of key informants to give information on the criteria set. It helps in study areas selection, a strategy for identifying respondents and following the case study strategy protocol established. Likewise, this help establishing the context and understand the need for land use planning and urban agriculture practice, who are the actors, locations, cost and benefits associated with the practise in the study settlements. In additional, criteria for case study selection identified and considered during case study selection (Table 4.3)

The Random sampling was important during the interviews where the investigator followed the specific farmers in their farming areas. With absence of farmers in their respective areas, follow-up was made in their respective homes. A total of 450 respondents were interviewed (Table 4.2). The 11% of the total households sample size used for selecting the smallholder farmers in their respective settlements (Table 4.1). This helps in collecting data within a reasonable time and size where each population targeted were reached.

4.2.4 Case study areas, selection and characteristics

Ranking and selection

The study has been carried out in the city of Dar Es Salaam. Three cases in Dar Es Salaam city were selected for the investigation within nine proposed settlements (Map 4.1; Table 4.3). The three case study settlements were selected through purposeful sampling as previously explained. Ranking during case study selection was done in collaboration with Municipal Agriculture and Town planners officials of Ilala, Temeke and Kinondoni in Dar Es Salaam. In this context it was difficult to bring all farmers and local leaders of the proposed settlement together due to cost implications. Other factors, which helped making decision of the study settlements selection, include availability of land use maps, cost in terms of transport and time. Likewise, institutional characteristics such as similarities and differences in term of urban and periurban setting were explored.

Table 4.3 Ranking and study selection

Criteria set	Case study settlements proposed							Factor ranking		score
	Mikocheni	Mlalakua	Mabibo	Chang'ombe 'A'	Goba	Mwananyamala	Ubungo Darajani	Oyrsterbay	Masaki	
Presence of households involving in UA production	30	30	30	40	40	20	30	20	10	250
Readily available information on UA	40	10	30	20	20	10	30	20	20	180
Manageable size in terms of area for UA activities and population	20	10	40	40	40	10	30	10	10	210
Agriculture potential setting in relation to urban functions and its possibility to illustrate linkage between urbanisation and urban land governance	10	20	20	30	30	20	40	30	10	240
Lack of lawful titles to most of the small holder farmers	10	10	30	20	30	20	40	10	10	180
Increasing land degradation (erosion) and resource use conflicts (land, water, air)	20	10	20	30	40	20	40	10	10	200
Spatial dynamism of the settlement in terms of increasing housing development	10	10	30	40	40	30	40	10	10	220
Presence of open spaces in the neighborhoods and location	40	10	10	30	40	20	20	40	40	250
Presence of range of urban agriculture including home gardens.	40	30	10	40	40	20	40	30	30	280
Total mark score	220	130	210	290	320	170	300	180	150	
Rank	4	9	5	3	1	7	2	6	8	

Ranking and weighting setting

1=Very strong with 40 score marks 2=Strong with 30 score marks,

3=Weak with 20 score marks 4= Very weak with 10 score marks

Three cases of highest rank score were selected for in-depth study. These neighborhoods selected include Goba, Ubungo Darajani and Chang'ombe 'A' settlements among nine cases proposed (Table 4.3, Map 4.1). Focusing on three cases does not mean that the research overlooks other ongoing urban agriculture activities in other settlements in the city, observation of other ongoing activities were noted and documented.

The study considered amaranths production as one of the Environmental Planning and Management (EPM) development programmes pronounced in 1992 for Dar Es Salaam city. It is in this context where vegetable production identified potential for being managed at city level. How it contributes to food nutrition, income level of the actors involved, environmental and soil conservation, marketing, information and land access observed rational in this study. This explanation contributes to understanding of the production potentials to urban poverty reduction and improved urban land governance. Therefore other forms of UA practice have been considered and documented as the study was conducted. These help contributing to the already established baseline studies on urban agriculture dynamics in the city of Dar Es Salaam (RUAF, 2006) and depict study generalization. The generalization helps thinking on how to handle the sector in urban setting for improved urban land governance in other contexts of south of Sub-Saharan Africa region.

Institutional setting characteristics: Differences and similarities

Through spatial analysis, the investigator zones the city into four areas. This was meant to depict the rationale of Peri-Urban Typology in line with socio-economic, demographic and spatial housing development of the case study settlements. The aim here was establishing characteristics of each zone, which depicts institutional change potential for suggesting forms of urban agriculture to be accommodated or restricted as well as how land use planning could make change for good and improved urban land governance in Dar Es Salaam city. The zones identified and classified include inner city, which includes the city centres, Central Business District (CBD) and its, surroundings. Others include urban transition zones; diffuse periurban and periurban fringe neighborhoods (Map 4.1). The zoning showed presence of both built up and not built up spaces (i.e. private and public open spaces). This depicts the institutional setting and characteristic arrangement in terms of landownership, use and control through observation. The zones characteristics include:

- *Inner city*: The main areas include Msasani, Orysterbay, *Mikocheni* city center area, Upanga and Kariakoo. The zone entails the historic cores, closed single and multistorey blocks, which were constructed by the Arabs, Germans and the Tanzania Government in the 19th and 20th centuries. The area has only two major open spaces for the public including Gymikhana and Mnazi mmoja grounds. The main challenges include overall low cover/ deficits of public open spaces, deficit and low quality of private open spaces. For example, in backyards there were threats to heritage of historical gardens and parks, which need to be preserved, regenerated and managed. However, floriculture and canopy tree planting for shed forms of urban agriculture were dominantly observed (Plate 5.12).
- *Urban transition zone:* The main areas included Kurasini, Keko, Magomeni, Manzese, Kijitonyama, Mabibo, *Ubungo Darajani*, Malalakuwa and Sinza. This zone is a mixture of different land uses and/ or settlement types which are either planned or partly unplanned. The transition zone as the case showed is often the result of quick and uncoordinated city growth. The challenge in this zone is that it is dominated with private open space in plot, restoration of delicate land and encroachment of open spaces in the planned residential neighborhoods. Likewise, in plot farming as well as off plots is common. The off plots farming land includes

that along industries, riverbanks, steep slopes and valleys. In addition, changing of residential buildings into commercial buildings is a common characteristics observed.

- *Diffuse urban fringe*. This is the zone of residential area developed between the industrial zone and the high institutions in which urban agricultural activities including cropping and vegetable production are done. This entails areas such as *Chang'ombe 'A'*, Makuburi, Mlalakua, Tabata, Buguruni, Vingungutu, Tandika and Mbagala. It experiences mixed land uses with increasing infrastructure problems including water shortage.
- *Periurban fringe*: The main areas included *Goba*, Bunju, Mbezi, Kimara, Chamanzi, Kongowe mzinga, which were predominantly influenced by agriculture. Some of the challenges observed included: improving access to the land (agriculture and institutional land), transport problems to and from the city center, inadequate urban development plans, rapid immigration trends. Others include increased land based activities such as housing, retail centers and business parks and recreation facilities and upgrading of farmland (i.e. biodiversity and landscape character). The study observed that the zone accommodates different land users and a large amount of land is unoccupied, a backbone for future city land development and growth potential areas in the city.

4.2.5 Type of data collected

Data collection was based on the key variables identified according to the set objectives on what was needed to know and how to comprehend the objective of the study set (Table 3.2). Five objectives were set to explore the case as discussed:

The first objective aimed at examining spatial land use planning processes and structures adopted by planning institutions in urban and periurban settlements in Dar Es Salaam. Data focusing on policy and legislation in urban development, processes, planning institutions and their roles were collected. Others include extent of informal settlements, policy and decision making process, development conditions and density distribution, tenure modalities and access to resources including water, land and financial mobilization. Likewise, information flows, participation, allocation and land delivery systems were documented. This helps to identify and understand relationships and interactions of different stakeholders within the settlement studied and adjacent neighbours in the city. Similarly, it provides understanding on the factors and the voices of different stakeholders potentials and/or constraining urban agriculture integration in land use planning practise.

The second objective focuses on exploring the forms of urban agriculture based livelihoods in general and in particular (i.e. amaranths production), and its impacts on urban and periurban settlements in Dar Es Salaam. Data on policy and legislation, settlement characteristics, forms, actors, scale, location and extent of urban agriculture were collected. Data was also collected on socio economic and demographic trends, degree of homogeneity, growth patterns, housing development trends, production trends, inputs, actors, benefits and cost. Amaranths production as one of horticulture production in the city of Dar Es Salaam was documented. Besides, issues connected to this including access to land, water resources, services, information, scale of productions and problems including that of production and marketing were documented. This helps understanding forms and suitable sites where urban agriculture can be accommodated or restricted in urban land governance principles. The benefits and cost of urban agriculture among others provided future implication of how land use planning can accommodate the function without detrimental effects to urban environment. This is considered vital in convincing public officials that more should be done to promote urban agriculture for improved urban

land governance. It also looked on use, ownership and control of land, water sources, soil conservation as well as distribution and urban agriculture market channels.

The third objectives dwells on finding out factors influencing the integration of urban agriculture in spatial land use planning practise in Dar Es Salaam. In this regard influencing factors affecting urban agriculture and land use planning integration were documented. Besides, voices of different actors were recorded and transcribed in text as quoatations.

The fourth objective aims at understanding the implications of unguided spatial land use planning processes and urban agriculture livelihoods practise in Dar Es Salaam. In this context implication of urban agriculture and land use planning were documented. These include implications related to social, economic, polictial and technological advancement .

The fifth objective aims at deriving options for integrating urban agriculture based livelihoods with spatial land use planning practise for improved urban land governance in Dar Es Salaam. This basically is the analysis and synthesis part, which shows how best urban agriculture could be integrated in urban land use planning processes and structures (i.e. knowledge on sustainable cities development) to reduce urban poverty and therefore improve urban governance in Dar Es Salaam. In summarized form data has been collected on the micro and macro level. The former provided a basis for understanding urban agriculture production processes, marketing, financing, asset building, institutional operation and interlinkages, as well as policy enforcement. Others include that of socio-economic setting of households involved in urban agriculture; plot sizes, tenure security, and urban agriculture compatibility with other land uses and values. Others include percentage of area where urban agriculture is done, actions taken and outcomes. The latter provided urban planning and urban agriculture processes, structures, policy intervention, constraints or stressors and opportunities for improved urban development. List of respondents in this respect were those represented in Table 4.2 which meet all other objectives in terms of questions set for their response.

4.2.6 Unit of analysis

Higson-Smith *et al*, (1995:64) defines widely a unit of analysis. They show that it is the person or unit from which the social researcher collects data. He adds that, data from such a unit can only describe that unit, but when combined with similar data collected from a group of similar units, provide an accurate picture of the group to which the unit belongs. In this respect smallholder farmers are considered as a unit of analysis. Smallholder farmers were divided into two groups namely landholders and tenants involved in farming. Further subdivision was done to those living in the study settlements and those living outside (Table 4.2). This was found important for three reasons: First as means that is a vehicle of analysis of the study phenomena (i.e. integration of urban agriculture in spatial land use planning). Secondly, as ends which look as an object of analysis of the study phenomena. Thirdly, appeared as potential candidates affected with implementation of land development policy and legislature towards improving urban agriculture based livelihood in the city. The significance of the smallholder farmer in this context enables the investigator to understand the urban land use planning and urban agriculture practices, appropriate structures and links in order to discover what works, how and why. This contributes knowledge on integration modalities of urban agriculture in land use planning for improving lives of the urban poor, their surroundings and therefore strengthening urban land governance in Dar Es Salaam.

4.2.7 Validity, reliability and generalisation

A measurement must have validity and reliability. Validity means relevance or adequacy of the measuring instrument to measure what it is alleged to measure (Lundequist, 1999:42). Reliability, i.e. dependability means that the method of measuring is unaffected by chance.

In order to ensure validity the researcher deployed multiple sources of evidence namely documentation, local community feelings records, interviews, direct observation and triangulation. Yin (1994:42) accentuates that the significance of using multiple sources is to triangulate the converging lines of evidence. According to Patton (1987:4) there are four types of triangulation namely; data sources (data triangulation), among different evaluators (investigation triangulation), of perspective on the same data set (theory triangulation) and of methods (methodological triangulation). Patton continues arguing that with triangulation, the potential problems of construct validity to provide multiple measures of the same phenomena for its replication.

The goal of considering reliability in this research was to help predictions, i.e. to improve our ability to construct, plan and produce, through increasing our knowledge, minimize errors and bias in a study for the future urban land development in respect to food security, urban poverty and urbanization impacts in Dar Es Salaam. Lundequist (1999:13) shows that the criterion imposed on a prediction is reliability. Lack of reliability occurs when one does not have adequate information, has difficulty in reviewing all the factors that cannot be influenced, or when there is poor correspondence between the model employed and what the model is meant to present. Using the case study strategy with multiple sources of evidence for triangulation, information collection in urban agriculture and urban land use planning and management practice were done. Similarly, the case also documented stakeholders involved, problems encountered, policy and regulatory interventions, theories and potentials factors for integration. Thus, the nature of the research is multidisciplinary comprising actors benefiting, affected and with institutional mandate as the case shows.

With regards to generalization, Lerise (1996:224) notes that the purpose of the research is to generate knowledge, which can be a basis for action. When the research findings become a ground for action it is said that it has been generalised. Lerise (*ibid*) further argues that case study merit is based on detail and the possibility that practitioners can relate it to their own situation and improve their judgment. The three selected settlements studied provide reflections on generalization. Besides, documentation of other forms of urban agriculture in the case study and the city in general provide further generalization for replication in other of Sub-Saharan Africa cities.

4.3 Research methods employed

Understanding research methods and methodology is considered important in this study. Simion (1969:3) defines research methodology as the study of procedures in inquiry. Other commentators including Nachimias & Nachimias (1976:42) show that it entails techniques and ways in which different methods and tools in field inquiry are organized towards intentional understanding of the study phenomena. Lundequist (1999:14) observes methodology as a scientific method and tool towards knowledge generation. Both definitions seem to have common elements namely, procedures, methods, tools and techniques which are important in this social study inquiry for knowledge generation.

Polanyi (1958:3) introduces the idea of methodology and how it differs from epistemology and ontology. The authors show that methodology differs with epistemology and ontology by the fact that, epistemology deals with the theory of knowledge, which seeks to inform us how we can know the world. The latter refers to establish the kind of things, which exist, the claim to be the bedrock of all philosophical thinking and all knowledge. The latter also, supported by Kenny (1973:43) who observes that knowledge is only possible about that problem which can be called into question. Von Wright *et al*, (1971:2) contributes that knowledge is connected with understanding in line of intentionalistic dimension, which has come to play a prominent role in more methodological discussion. In this context methodology conceives as a philosophical evaluation of investigative technique within a discipline, a concern with the conceptual, theoretical and research aspects for knowledge generation.

In line with research methods, Lundequist (1999:34) defines it as techniques and strategies employed within a discipline to manipulate data and acquire knowledge. This definition is thought to be important in this context as it underpins techniques and tools for social phenomena inquiry. Lundequist (*ibid*) observes that in a particular study, the method chosen will depend upon a variety of considerations, including the following:

- The nature of the problem addressed (for example might require effective use of questionnaire, records and participant observation).
- The theoretical stance and the preferred methods (e.g. direct observation).
- The time and money available (e.g. postal questionnaire are cheaper than face to face interviews, secondary data analysis cheaper than conducting new surveys).
- The type of research and evidence likely to carry conviction with the sponsors of the research and the audience of the research.

Following the above stated, various research methods were used (Section 4.3.1; Figure 4.1). This shows the contribution of the review to build the social inquiry as used in this context.

4.3.1 Tools and methods

Secondary and primary data collection sources were used in exploring the case towards achieving the study objectives. In view to secondary data, literature review is considered important. Mills (2007:4) accentuates important criteria that the literature review must satisfy:

- To show the current position of the research frontier within the problem area
- To identify areas that can be interesting to research
- To forwards a more precise definition of the problem of the project
- To provide an overview of the central concepts and theories of the area of research

In supporting the above tools and methods used are discussed below:

Document review (i.e. written sources)

Written sources are a means of widening the understanding of the context and scale, and entry into the contemporary experiences or the group under study. Oliver de Sadan (2005:238) shows that this source of data inquiry allows for familiarisation or, better yet, for the elaboration of exploratory hypothesis and personal interrogation. In this context the written source is reviewed throughout which enabling the investigator to understand the subject matter, clear line of departure and make reflection on the study contribution at the end of each chapter. This source was treated as part of secondary data collection method. In this respect, different land use and urban agriculture policies, strategies, legislative and organization structure settings were reviewed. Others include reviewing cases on how

urban agriculture integration in urban planning had been successful and or failed and reason behind the two (Chapter two). This was important to reflect the potential of urban agriculture to be integrated in land use planning, modalities for best accommodation or restriction, tools deployed, methods and potentials available in view to policies, country programmes and land investment strategies explored.

Observation

The study valued observation as one area where land use planning and urban agriculture practice study phenomena information could be collected. The method provides insight into perceptions and voices of smallholder farmers and other stakeholders interested in urban and periurban land development in Dar es Salaam. The practice and actions of the land use planning and urban agriculture in urban planning practise show the social reality of the dynamics of the city spatial growth, the future implication and land management needs. The field researchers therefore used this technique to trace the practice, comics and have outline of the issues of interest as observed and make sense out of it. Through sketching of important events, note taking and comic drawings about observed ongoing land use, economic activities and conflicts of uses were identified. This helps getting general settlement characteristic and issue of interest for subsequent interviews, data analysis and integration modalities needs for improved urban land governance.

Using the techniques of eye observation, which was supplemented with unstructured interviews with smallholder farmers, their needs and problems were identified. Likewise, feedbacks, feelings, existing land use change in the study settlements and the city in general were noted. The voices of different stakes as expressed verbally or non-verbally, which associated with the need and constraints of the integration of the two study phenomena were documented. The unstructured interviews helped to comprehend the observed urban agriculture and land use planning practise in the city. In addition, photographs and note taking about the key features were taken and recorded and contributed to data analysis when transcription was made. Throughout this study, on spot observation helped mapping the ongoing urban agriculture activities, plot use and coverage the study settlements. These facilitates getting an overview regarding the quality, quantity, involvement of actors and their responsibility in urban agriculture, urban planning and urban environmental management practices. Similary, actors practice impact on the social, economy, ecological conservations, food security, urban safety and health as poverty reduction and health dimension were identified and documented.

Mapping

Maps were observed as important tool to determine spatial data and analysis on the extent of land use and urban agriculture magnitude in the study settlements and the city in general. In this respect acquisition of the maps and mapping exercise including updating, zoning of agriculture land and other land uses updating was done (Map 4.1). Distances of the study settlements in respect to the city center and their characteristics were documented. In addition, digitisation and analysis of part of the land use plan in the three settlements and updating to observe the reality of implementation was noted. The identification and selection of the land use-planning scheme to be digitized was based on presence of urban agriculture and where more smallholder farmers exist. This was important to understand their involvement in land use planning, how they do access such land and their perception and voices for improving their productivity and conserve urban environment. The mapping helps also to trace the urban dynamics and reality in spatial perspectives that allow more insight into understanding the historical evolution of institutions, space density and decision making process at different levels of the

community setting. Historical trends about the settlement spatial growth pattern-densification including housing development and population were considered useful in this context (Chapter five). This helps to understand the underlying forces influencing the urban poor livelihoods in urban setting.

Interviews

Both structured and unstructured interviews were deployed in this research. The total respondents are as earlier explained. Structured questionnaires were used to guide the interviews held with respondents discussed previously (See Appendix). In each of the selected study cases random sampling method was employed for picking households respondents during the interviews as categorized (Table 4.2). The categorization was useful in random selection of the households interviewed. Unstructured interviews were used to supplement the structured interviews in which the respondent's feelings and perceptions were noted.

Respondents in adjacent communities were also interviewed to get their feelings and perceptions on the urban agriculture and land use planning practice in the city. The identification of these respondents was through random sampling in which local leaders in the adjacent settlements were given first priority to be interviewed. On the other hand residents involving in urban agriculture including landholders and tenants were approached for interview. The investigations were continued until answers were repeating the same from one respondent to another. This was noted during the brainstorming sessions, which were done daily after fieldwork. Short questionnaires with minimum of a half an hour during interviews were used. The study shows negotiation, team building and consensus skills are important lessons learnt during the interview. The total number of respondents (Table 4.2) and Figure 4.1 summarise the methods used for data collection.

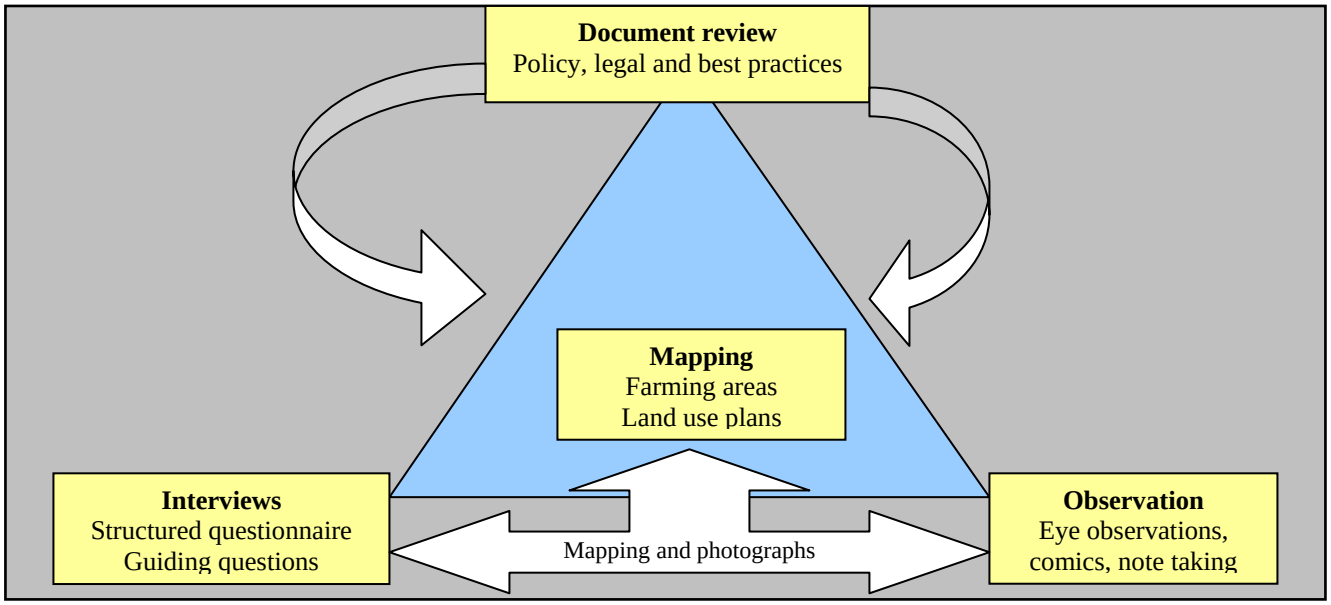


Figure 4.1 Data collection triangle.

4.3.2 Data analysis strategies and presentation

Hendricks (2006:119) observes that analysis of data is an ongoing process that should occur throughout the study rather than at the end of it. Huberman and Miles (1994:3) define the collection and analysis of data during the study as the interim analysis. Interim analysis, explains and allows the researcher make changes to data collection strategies during the study based on problem or questions that arise when analyzing the data. In this context the study analysed the data, as they were collected in phases. During each phase data were discussed and analysed during fieldwork and after, where some areas observed not properly understood by investigators were repeated to get more information on the issue. This helps triangulating the data and gets more factors connected with the study phenomena investigated.

Quantitative data analysis

The quantitative data in this research are based on rating scales, closed-ended self-assessment items and closed-ended survey items. These type of data responses provided numerical responses in which the actual number chosen for each item tallied and number averaged and percentages obtained to describe results. The steps involve reporting, comparing and displaying data in text, tables, numbers and percentage form. The steps adopted were looking at various data sources and determine which can be analysed quantitatively and qualitatively. Following this closed ended items, checklists and tally sheets were adopted. This helped to organise data and report using simple statistical tools and written form as represented in tables, text, percentages and graphs.

Qualitative data Analysis

Berger (1963:239) explains that the interpretation of qualitative forms of data involves analysing *"social action and human activity"*. This shows that in order to understand data based on observations, interviews, or conversations, converting data into text is important. Green (1978:46); Ghosh (1982:104) and Kothari (1984:315) show that building general themes from specific examples in the data-thematic analysis is rational. Ghosh (*Ibid*) remarks:

> *"…what emerges, after much hard work and creative thought in research, is awareness in the mind of researcher that there are patterns of order that seems to cut across various aspects of the data. When these patterns of order that seems to cut across various aspects of the data and when these patterns become organized and when they characterize different segments of data, then we can call them themes".*

The author further suggests guidelines for analysing qualitative forms of data including:

- Data, which are not textual form, must be written so they are recorded as text. Translation word by word and transcription is important
- Textual data are studied for patterns to determine ways to code the data
- Textual data and codes are analysed so that patterns and themes can be developed
- Answers to research questions are offered based on the themes found in the data

This study used coded textual data, which presented in this context. Direct quotes were used to comprehend the discussions.

Software packages used in data analysis

Three computer software packages were used to present, record and retrieve qualitative and quantitative data collected. These include Microsoft Excel and WinWord, which were used to present data in table forms, text and graphs in this context. Likewise, Map Info software was used in this context for analysing and presenting spatial data in map form.

4.3.3 Data triangulation and interpretation

Throughout the analysis, data were differentiated regarding variables discussed. According to Fredricks (2006:148), data are triangulated to help answering research questions set and to reach conclusions on the most effective interventions and innovations that can be implemented. He shows that based on the conclusion you reach ask yourself; was the intervention effective? Why or why not? What would you do differently? Equally, he indicates that a researcher needs to make future plans regarding how to use the results and conclusions of the study to inform his or her practice. In this context a framework for integration implementation, limitations and future policy agenda were put in place. This helps towards actions on the ground to make meaningful results that can help to solve the societal problem in this context.

To support the foregoing, Garbett (1970:214-237) and Velsen (1978:187) observe that triangulation is the underlying principle of any enquiry, where one must combine information. Bierschenk (1988:147) shows that the objective of triangulation is to cross viewpoints whose discrepancy appears to be important as well as understanding the strategic group[18]. Olivier de Sardan (2005:237) supports showing that it is the question of looking at the contrasting discourses, of turning discursive heterogeneity into an object of study, of emphasising variation rather than erasing it or playing it down. In short, it is a matter of building a research strategy based on seeking significant discrepancies. Following the arguments, this study used triangulation methods to cross check the validity and truth of the data collected and linked it with the conclusion as shown in this text. Likewise, it was useful in checking the facts from more than one source to verify the accuracy of some noted statements.

4.4 Reflections

This chapter discussed how the study has been approached, key variables that were explored in respect to set objectives and hypothesis. However, different commentators' discussion on field enquiry, methods, tools, analysis, interpretation and representations contributed in this context. The chapter gives insight in exploring the case in which a number of research variables are analysed. The next chapter discusses the case study findings by describing the case study settlements.

[18] *Refers to an aggregate of individuals who faced with a particular problem, have the same attitude, this being determined on the whole by the similarity of their social relation to the commonly felt problem. Here social relation needs to be taken in the large sense of the term and might define a cultural, symbolic, political or economic relationship particularly the smallholder farmers involving in urban farming.*

PART III: STUDY RESULTS, DISCUSIONS AND SYNTHESIS

CHAPTER FIVE: DESCRIPTIONS OF THE STUDY SETTLEMENTS

5.1 Introduction

The previous chapter discussed the study design and methodology used in this investigation. This chapter discusses the empirical results and premises of the issue examined. It analyses the Dar Es Salaam city case, in which Chang'ombe 'A', Ubungo Darajani and Goba settlements dynamics are described. Settlements spatial land use development trends and its impacts, socio-economic setting, policy and decision making agenda in land use planning practises are discussed. Similarly, the extent of urban agriculture and the space utilisation situation are analysed. It is useful to note that the settlements are described as entities in the city depicting urbanisation processes (Map 4.1). Understanding these study settlements helps the author and other interested partners to think about the future land development projection and resource demands if the city has to expand-and needs to accommodate urban agriculture. Likewise, this gives insight on how land can best be utilised, coordinated and controlled in both urban and periurban environments for meeting voices of different stakeholders including smallholder farmers. The chapter ends by providing reflections on the contribution made to the study phenomenon.

5.2 Dar Es Salaam

5.2.1 Development trends and spatial growth

Dar Es Salaam city was established in 1862 as a port and trading centre to support new caravan routes being opened into the interior of the African continent. It became the national capital in 1891, acquired municipal status in 1949, and was raised to city status in 1961 after independence (Kironde, 1994:12). The city falls under the administrative jurisdiction, which divides it into three municipalities of Ilala, Kinondoni and Temeke (Map 5.1). It has 73 Wards and has an area of 1350 km square as of 2007. The city is a center for industries, education, institutions and culture diversity. It is home to 8% of the National population and generates over 70% of the national Gross Domestic Product (GDP[19]). The city's adjacent hinterland settlements include Bagamoyo, Mkuranga and Kibaha, which have a total population of 150, 000 people. The hinterlands settlements observed with vast land for both agriculture development and other urban land uses, which also provide opportunities for future city expansion and can help accommodating the expanding periurban agriculture based livelihood needs.

Three years after Tanzania independence in 1963, Dar es Salaam was largely developing in accordance to conditions[20] set in urban planning ordinance inherited from the colonial era. The extent of the built up area was confined within a radius of about 6 kilometers (Map 5.1). Five years later, the city and other urban centers in Tanzania became a destination of an influx of rural–urban migrants and there was less adherences to conditions set in urban planning. It was during this period when informal

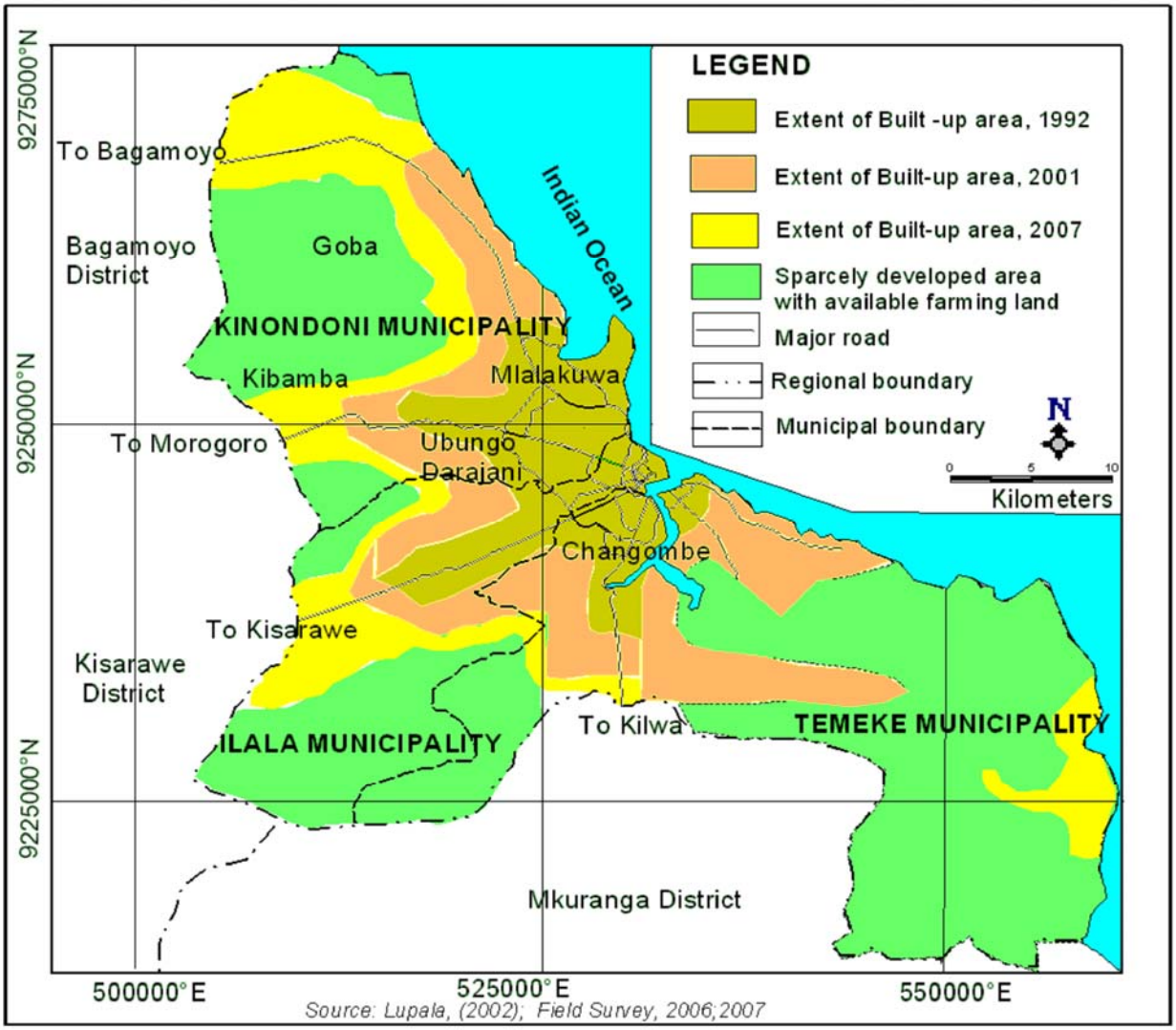
[19] *According to Budget speech by Zakhia Mengji-Financial and economic affairs Minister of Tanzania in June, 2007.*

[20] *Includes adhering to urban planning rules such as zoning and density distribution, which appeared to base on racial segregation as practised by both Germany and British colonies before independence. For example, in Dar Es Salaam some places meant for 'Wazungu' which is Swahili local language meaning European or white colour jobs including Orysterbay and Msasani. Other places were for Indian particularly those business premises including Upanga, while the density areas and outskirts meant for African including Manzense and Chang'ombe.*

housing development took place. Individuals bought land in the peripheral areas and constructed houses without formal permission. The process has lead to a rapid horizontal sprawl of the city mainly along its radial roads of Bagamoyo, Morogoro, Pugu and Kilwa.

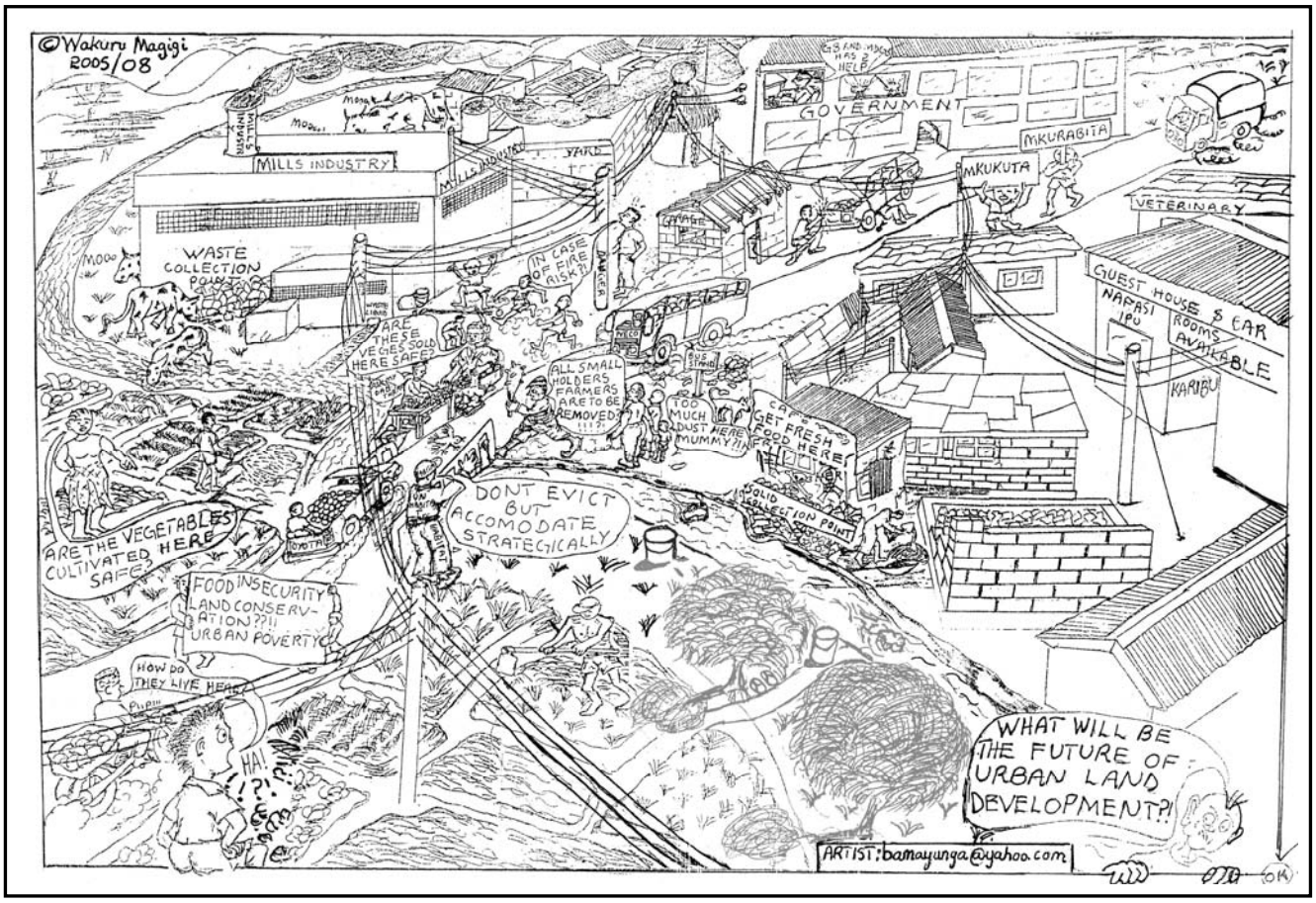
By 1978 the built up area of the city had expanded to more than double of its 1960s spatial size. The 1978 Dar Es Salaam master plan shows that, during this time the city had extended to 14 Kilometres along Pugu road and 12 Kilometres along the Morogoro and Bagamoyo roads. The southern arm of the city towards Kilwa did not extend much largely due to a very poorly maintained road. The growth pattern of the city in the east was constrained by the Indian Ocean. Lupala (2002:35) shows that by 1992 the general radius of the city remained at 12 Kilometres, but up to 16 Kilometres along Bagamoyo road and 10 Kilometres along Kilwa. The government improvement of Kilwa road helped extension of growth along the road line. By the year 2006, consolidation had taken place in the formerly sparsely developed areas between the major roads and further extensions along Kilwa road and other mentioned roads. In 2007 when spatial development analysis was done in this study, the northern arm along Bagamoyo road had reached 40 Kilometres while the western arm reached 30 Kilometres (Map 5.1). Both the south-western part and the southern arm expanded to 25 and 18 kilometers respectively. These extensions show the urban sprawl experienced by the city since independence. One may wonder what implications the urban sprawl imposed to urban agriculture and need for land use planning for improving urban land governance in Dar Es Salaam.

Map 5.1 Spatial growth of Dar Es Salaam city (1992-2007).



The implications of the urban sprawl observed include increasing needs and costs for supplying roads and drains, engulfing of agriculture land, informal settlement, insecurity of land tenure, and poverty**.** Others include distance of smallholder farmers to market premises to sell their agricultural products. The study establishes that if urban sprawl problems are not properly addressed in the city, in the future land use conflicts and settlement degradation in terms of quality will be increased, endangering urban land governance. The failure of urban planning practices including inadequate enforcement of policy and legal instruments observes causing increased urban sprawl problems and disorganized urban agriculture (Figure 5.1).

In addition to the mentioned failures, urban land use planning practises and outcome implementations are lagging behind landholders' needs in formal land delivery and control needs, public service allocation, and housing density distribution. Augmented housing density and control limits road expansions and therefore creates transport and transportation of goods and services problems (Table 8.3; 8.4). In addition to this, presence of unclear and narrow streets below the urban planning standards requirements appeared to be a problem. Land subdivisions increases housing density, which limits urban agriculture practices (Chapter seven and eight). This situation is a strong indication of the need for community involvement in policy and decision making, plan initiation, implementation and evaluation for improving urban land governance in Dar Es Salaam and other Sub-Saharan Africa cities.



Source: *Fieldwork survey-Ubungo Darajani, December, 2005.*

Figure 5.1 Contextual analysis of ongoing activities and potential conflicts.

5.2.2 Land use planning institutions, policy and decision making processes and structures

Land use planning institutions in Dar Es Salaam City

The city has six main land use planning institutions of relevance in this context. These include the City council, which acts as overseer of city land development, and the three mentioned municipalities each with its autonomous power in land use planning process. Others include the Regional secretariat and developers (i.e. landholders, private sector-civil organisations and donor community). Each authority has its roles in city land use planning process and outcome implementation.

The study shows that the main departments potential for coordinating and controlling land use planning and urban agriculture in the three municipal councils include Urban Planning, Land, Agriculture and Livestock Development and Surveying. Similarly, other departments connected with this in its functional roles are health, environment and engineering[21]. Table 5.1 summarises the departmental roles and how they consider urban agriculture in their normal functions. It shows the administrative jungle in which different aspects of urban agriculture fall. The implication for this jungle which shows planning institutions weaknesses are presented (Chapter six and seven).

Table 5.1 Departmental roles allied with land use planning and urban agriculture practise

S/No	Institution/department[22]	Land use planning function	How do they consider urban agriculture
1	Landholders (i.e. smallholder farmers owning land and tenants)	Involves in preparation and implementation	A livelihood and social capital strategy for enhancing their social development Employment alternative and food provider
2	Urban planning department	Initiate, prepare and endorse land use plans	Urban agriculture considered as temporary land use, Expensive in terms of infrastructure consumption (water) and no tax system imposed to actors involving in the sector
3	Land surveying department	Conduct cadastral survey in their respective Municipalities	Have nothing to do with urban farming and only survey/demarcate farms outside the city boundary as farm lots and not in urban areas for urban farming
4	Land valuation department	Land registration following Land Act of 1999 provisions	Has less returns and almost negligible when compared to other urban land uses such as houses, hotels and business premises
		Allocation of lands to landholders in demand	Have not offered land for urban agriculture although some legal provision allows. This is due to the fact that it is not included in land use plans prepared. They were hesitant that they cannot offer land in urban areas without land use plans that demarcate such land for such use.

[21] *Respondents from these departments showed that coordinating and controlling urban agriculture is not their functional role. If this is the case, one could wonder why the building permit and planning consent offering to landholder belong to the engineering department. Likewise, the health department used to put restriction on urban agriculture growing during cholera eruption. Environmental departments claim dealing with solid waste management and such functions do not fit in its routine. This indicates the need for department collaboration and training to ensure sustainable urban land governance in the city.*

[22] *During the field survey, the local government sector reforms were on going and the departments may change and some be amalgamated into one department in the future. No fruitful information on the tentative department structure to be formed in the ongoing reform.*

S/No	Institution/department[22]	Land use planning function	How do they consider urban agriculture
5	Livestock and agriculture extension section	To formulate smallholder farmers cooperatives to access funds Provide extension services to farmers in need	Within the city no farmers have accessed funds for farming rather than doing other business Multiple function of activities to smallholder farmers observed existing including petty business and food vending Farming in urban areas observed as a subsidiary activity and at present more weight and programmes are taken to village farmers who have big plots for farming Inadequate extension services and once available the cost should be provided by smallholder farmer
6	Engineering department	Offer planning consent Offer building permit	Have never had any farmer requesting such land for urban farming and they don't know if there is such provision in country policy and legal documents guiding such offer.
7	Regional secretariat	Prepare, endorse general planning schemes Approve and reject detailed land use plans	Expensive to maintain in terms of infrastructure provision It is a temporary urban land use In future construction industry will make bigger contributions to the city economy than urban agriculture Once declaration made for an area as urban are ripe for development-no farms exist again

Other planning institutions potentially coordinating and controlling land development include the Land Use Commission, the High Court of Tanzania-Land Division and Ministry for Land and Human Settlements Developments as earlier explained. Weak institutional and departmental linkage is the key feature observed that constrains urban agriculture based livelihood implementation in the city (Chapter seven).

Policy making processes

Seven processes appeared to be involved in land use policy making[23]. These include agenda setting by the city stakeholder and preferably Ward Councilor. This stage involves problem identification, for example those smallholder farmers and other residents are facing in their daily operations. It is in this respect that knowing the magnitude of the problem is important. The Councilor must state the problem and present to city stakeholders during the formal municipal meetings including the Urban Planning Committee (UPC). After receiving the agenda as a problem that need urgent attention, the members in the UPC discusses the problem and reach the resolution to be submitted to the Municipal Full Council (MFC) for consideration and may commit further investigation. The analysis of the results and deriving options for redressing the problem are put in place as agreed. The selected Ward Councilor, Municipal Mayor or appointed municipal head of department present the issues to City Full Council. The Municipal allows comments concerning the matter if any to be submitted to the legal section, who can amend before submitting to city council.

The Full City Council (FCC) meeting discusses the matter at hand as presented and endorses it if agreed among members. The FCC may commit further investigation and further findings to be

[23] *Discussion with three Municipal mayors and three councillors in the City at different times provides this process as summarised in this context in December 2006.*

presented in the next agreed meeting if the matter is not clear. If the matter is considered to be affecting city development and need policy framework, it will be submitted to the Ministry responsible for Local Government Authority and Regional Administration for approval. This is after it has been discussed at City Council level where land development partners are invited to contribute to the agenda. The document to be sent to the Minister responsible for local government is accompanied with all minutes of the meetings held at different levels, resolution reached and lawyers comments. It is within this scenario the policy is formulated to deal with the problem at hand in the city and its three Municipalities (Figure 5.2).

In the processes, different stakeholders from Civil Society, development partners, and private sectors are invited through selected representatives. It is within this invitation where such interactive consultation of the members can present smallholder farmers' needs and issues so they can be heard. Accurate and proper information flows are necessary to development partners and government so that decisions that affect local residents can be made rationally. Weak communication between smallholder farmers and the Ministry responsible for local government and knowing the representatives in their full Municipal council are common and therefore it is difficult to fuse their ideas on decision making levels. The study notes that it takes more than one year from policy inception or agenda setting to approval by Ministry for local government. This situation may discourage communities who want to improve policy gaps and subsequently involves in land use planning for improving urban land governance. The situation also appeared limiting farmers in getting legal status or even recognition for urban agriculture livelihoods improvement.

The policy making in the city assumes that Ward Councilors who are resident representatives in decision making and policy making processes presents their needs including the needs of smallholder farmers. This can hardly be achieved by the selected official, as most decisions are politics during the meeting rather than presenting city challenges and solution of the same. Equally, based on the established legal, policy and Municipal bylaws, restriction on welcoming someone who is not entitled in these meetings was observed to be common.

Principally, if you are invited, it is difficult for your ideas and issues to be taken into consideration as you are a passive and not an active participant. The only way in this process where farmers can be integrated in decision making is to inform their Ward Councilor on their needs and to make follow-ups through their representatives. This observation requires proper organization of the farmers who mostly are not organized in the city and therefore it is difficult to inform the politicians of their problems. This suggests the need for organising farmers so they can have one voice to inform decision makers on the ongoing land use planning practise. Similarly, to help accommodating their needs in city land management functions and development programmes.

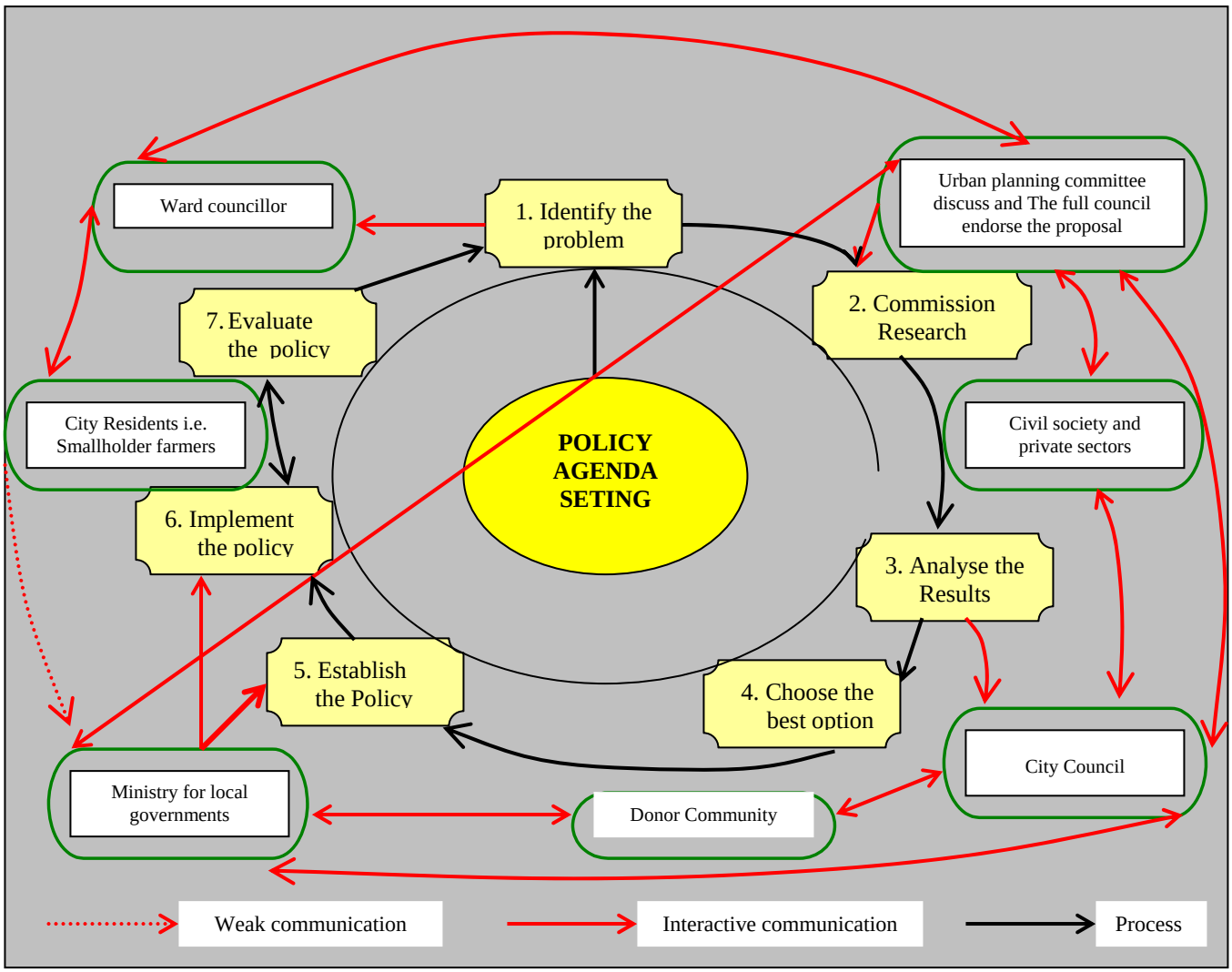
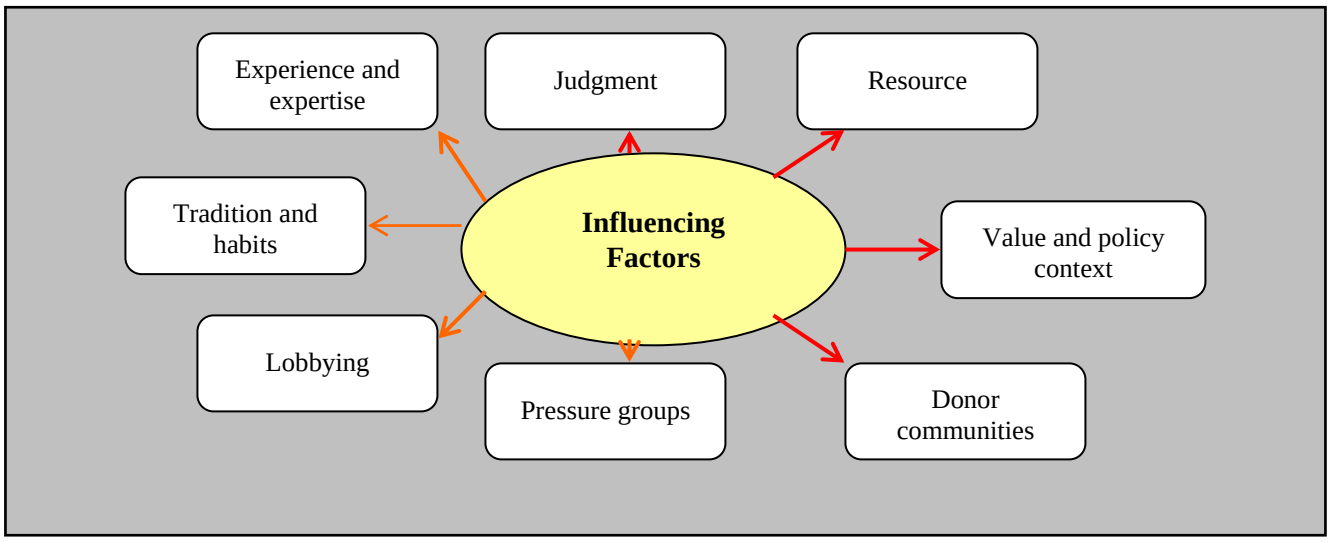


Figure 5.2 Policy making processes.

The study observes that the whole process of policy and land use planning practise decision making is complex and with bias on political interests overriding economic, social and technical aspects in land use planning. The process is influenced by various factors as noted during this study (Figure 5.3). These include experience and expertise, judgment, resource, value and policy context, tradition and habits, lobbying and pressure groups. The organization of smallholder farmers into groups can help form a team for addressing their concern. However, this result confirms also the contribution of Clay & Schaffer (1984:2) and Farvacque *et al*, (1992:2; 1998:40) who show that the whole life of policy is chaos of purpose and accidents in other African cities. It is not all a matter of the rational implementation of the so called decisions through selected strategies as noted in this study. This creates increasing marginalisation of smallholder farmers in managing their land development.



Figures 5.3 Factors influencing policy making processes.

Decision making processes

Land use planning process involves different stages including initiation (setting the agenda), decision making processes, preparation, implementation, evaluation and monitoring (Figure 5.4). Decision making in Tanzania for land use planning is made by using either the top down or bottom up approach. Top down decision making is where the grassroots or low level planning institutions receives instruction and orders to initiate, prepare and implement land use plan activities. It should be noted that Local and Central Government planning authorities as earlier explained have been given mandate and power to be involve in land use planning and decision making processes. Landholders in their respective areas have the right to be involved in preparation and subsequent implementation of the land use plan. This shows that the central government in Tanzania and most Sub-Saharan Africa cities, urban planning power has hardly been decentralized to the lower level (i.e. grassroots). Inadequate decentralising of power to the local level has been affecting the land use planning process and subsequent implementation and monitoring modalities for improving urban land governance in sub-Saharan cities as the study settlements show.

Within the top down spatial land use decision making, stakeholders' interests at local level are commonly excluded. This is caused by the one-way communication that was observed in land use plan initiation, and monitoring and evaluation stages (Figure 5.4-Stage I and V). Sometimes it is also within these stages where passive communication type of participation can be observed. In this respect, the government makes decisions and uses the landholders as vehicles to carryout the project as if they have decided themselves in their settlements. This is common during the decision making stage in land use planning processes. This type of decision, can succeed in land use preparation but experiences implementation difficulties that affect land use project sustainability as the Ubungo Darajani study settlements findings show (Chapter six).

The bottom up land use planning decision making appeared when the local communities initiate their project, use their resource and other stakeholders support to involve in land use planning processes. It is in this respect where consultation and interactive participation is achieved from the first stage of land

use planning to the end. However, a long bureaucratic obstacle in initiation and plan approval is common, which may discourage some of the landholders including smallholder farmers who want to improve their living. Adopting participatory land use planning as a conventional planning approach helps achieving this and therefore ensures land use planning project sustainability. Figure 5.4 sumarises the land use planning processes and levels of participation.

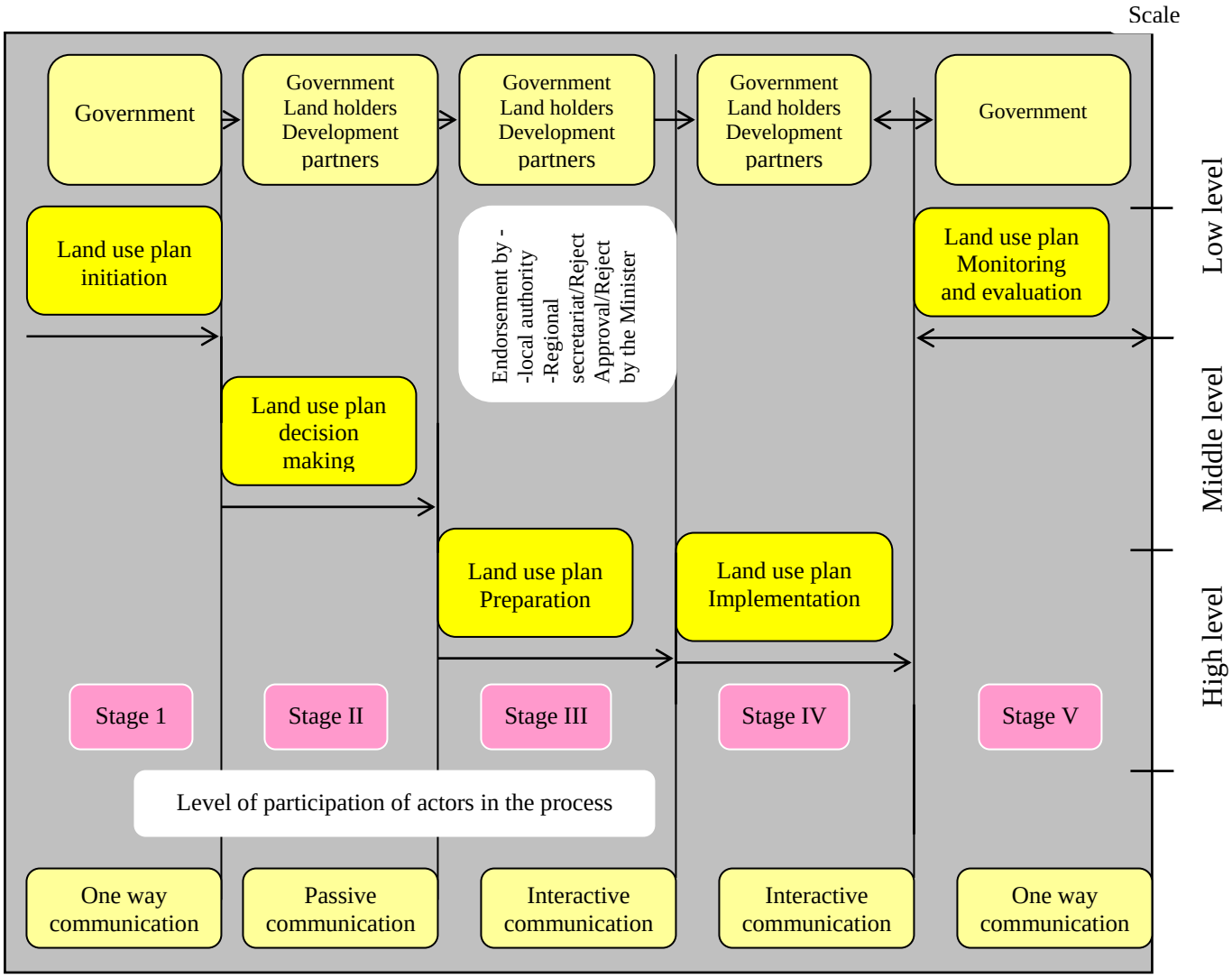


Figure 5.4 Land use planning processes.

Figure 5.4 shows the level of involvement using communication aspects of different stakeholders. This is grouped into three parts according to a scale that includes high, middle and low. High level is when there is interaction communication and information flows among actors (Pretty, 1995:1247) as indicated in figure 5.4. This is achieved particularly in the third and fourth stage where the preparation and implementation of land use plan is needed. The first stage and the fifth is low as it is only the government who decides to initiate land use plans preparation according to the Country legal and policy setting. Landholders act as passive participants in these stages. This shows a top down approach in decision making and implementation. Principally, this situation has affected urban agriculture

livelihood integration in land use planning process. In fact, the local government authorities are responsible for controlling and coordinating city land development in the city.

The second stage experiences passive participation where landholders are not active in land use planning process. This occurs especially, when the government initiates the project with a top down approach. It is also in this stage that landholders and other land developers including private investors engage in preparing their plan (See Land Use Planning Act of 2006: Sec.16).

Forms of participation in land use planning processes as explained above help to determine and to understand at which stage urban agriculture can be integrated. It is through interactive communication from the project outset where such needs can be integrated. One could wonder if landholders including smallholder farmers have limited initiation rights and be passive participants in decision making and monitoring processes, how these needs can be integrated in urban land use planning? This keeps the need for designing strategic land use planning framework that can meet the needs of different stakeholders that take into account formal processes with community needs and intervention (Figure 10.1).

5.2.3 Extent of urban agriculture and characteristics

Urban agriculture is an obvious feature and commonly practised activity in the city (Map 5.1; Figure 5.1). Both urban and periurban settlements practice this activity. The study observed that the forms of practise differ from urban to periurban areas. In the urban context including its transition zones, floriculture, tree planting along the infrastructure lines and gardening in plots and off plots are dominant. Equally, animal husbandry including domestic animals, cattle and pigs can be observed. Similarly, pig husbandry, poultry and cattle rearing using indoor ranging system is common but seem to create air and noise pollution in residential premises in the case study areas. This suggests a need for designation of land for its allocation in urban setting if it is to be accommodated.

In periurban areas both forms of urban agriculture including animal husbandry, crop farming, floriculture, horticulture, and poultry production are common. These activities are practiced in residential plots, house yards and open land where space is available exceeding 0.5 acre (Table 8.2). Gardening is practiced along the river lines and other water bodies. In addition, the study showed that agricultural activities are conducted in fragile environments or hazardous areas of towns resulting in land degradation and water pollution through the use of pesticides. In other cases agricultural activities are carried out in areas that are affected by industrial pollution (Figure 5.1). Due to this, the need to continue regulating the conduct of urban agriculture and ensure it does not disrupt planned urban development is essential to balance its needs and urban environment. This calls for proper coordination and control of the sector in the urban setting in urban planning processes. On the other part deep well and shallow wells were observed also facilitating urban farming in both urban and periurban settlements.

Engulfing of agriculture land into other urban uses is a common feature specifically during urban expansion. Likewise, the study shows that in informal areas including the case study, landholders appeared changing their houses and increasing the size of their building without informing the

local authority[24]. This has resulted in negative impacts such as decreasing land for urban agriculture implementation. In addition, increasing land prices and renting due to increasing population acts also as a catalyst for decreasing land for urban agriculture as the alternative uses are high financially. Other characteristics observed include food inadequacies as some respondents stated to be consuming one meal per day. Nevertheless, a backyard garden is a common characteristic in both the urban and the periurban neighborhoods observed.

The increasing informal land transaction in periurban areas is a common feature. This appeared to be caused by increased urbanisation impacts, which among others engulfs urban agriculture land. This calls the need for designated land for urban farming to implement the policy and legal requirements. It was noted that up to 2007 when the fieldwork survey was finalised, no land within the city was designated formally for urban agriculture practice. This permits urban agriculture to take place in areas designated for other land uses such as residential areas, open spaces and on fragile land as earlier explained.

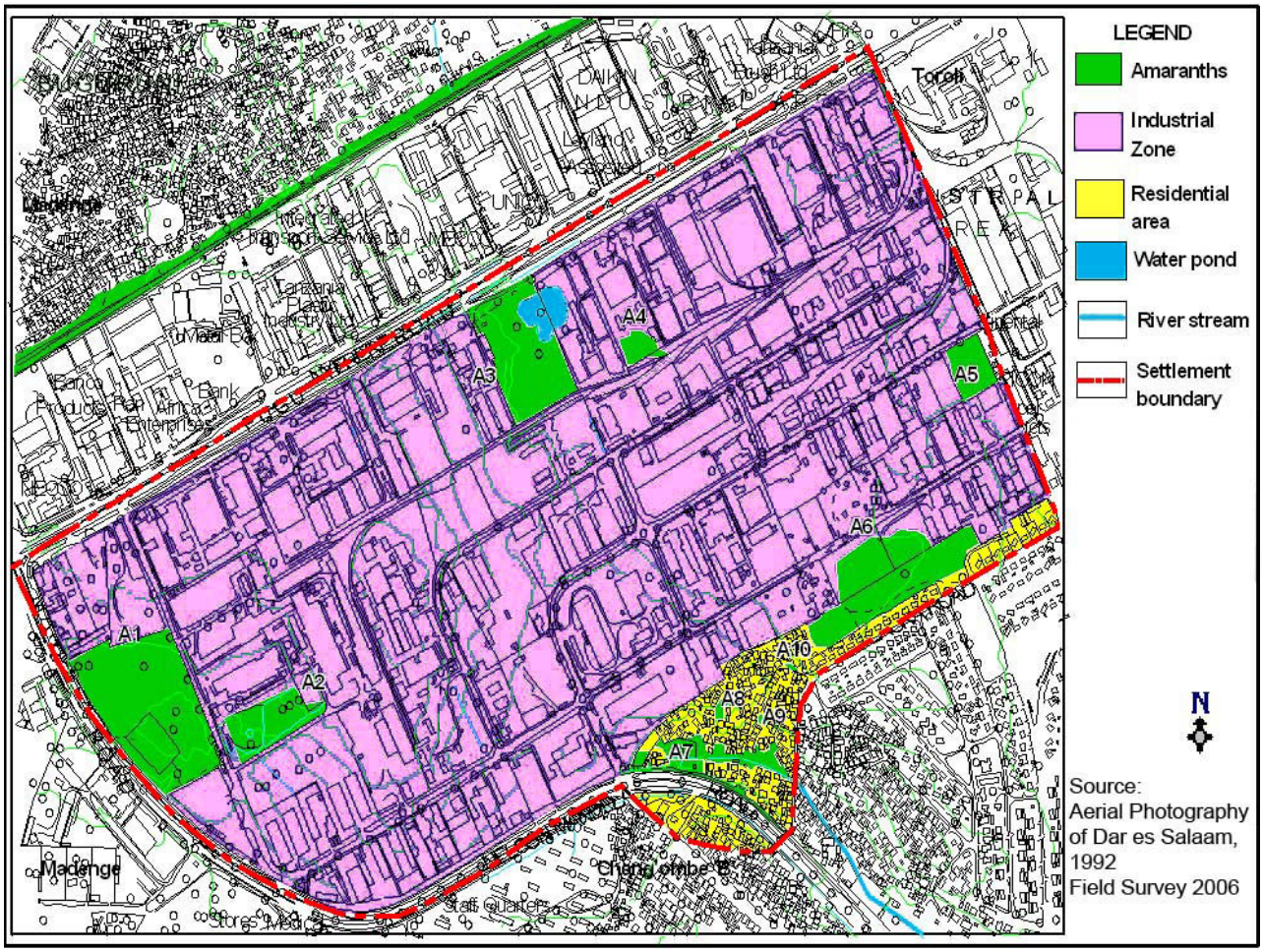
5.3 Chang'ombe 'A'

5.3.1 Location and spatial development

Chang'ombe 'A' settlement is found in Temeke Municipality about 14 km from the city center within Chang'ombe ward. Other settlements within the wards include Toroli, Chang'ombe 'B' and 'C'. Chang'ombe 'A' has an area of 187.64 hectares. Land use occupation in hectares includes 160.1, 10.09 and 17.45 for industry, residential and farming respectively (Map 5.2). Informal land selling and transactions and increasing housing density in this settlement are common to the other settlements explored. The increasing density in the settlement creates difficulties in adopting horizontal housing development due to limited land and subsequently affecting urban agriculture based livelihoods. The limited land suggests more attention on forms of urban agriculture to be accommodated as sanitation system and water infrastructures are potential a problem observed (Figure 6.6).

[24] *One respondent on 24 February in Chang'ombe 'A' remarked that, He has extended his building and even covering the whole plots understanding that these settlements are informal and the government have no right to control. This understanding from the local residents is not true and appears going against the local authority need in which once the area had been declared as a planning area, any kind of development needs to be consulting the local authority. This suggests training needs on policy and legal setting to local residents to minimize plan discontents and degradation.*

Map 5.2 Chang'ombe 'A' Settlement-Extent of spatial and urban agriculture development



Changombe 'A' settlement accommodates 562 houses (Figure 5.5) with a total of 8,712 people, comprising 1,452 households (Ward Census Report, 2007). Among the total population 49% are female and the rest are male. Among the total population, 18% are children and 16% are elders. Likewise, 95% of houses are constructed with permanent materials including blocks and concrete and the rest with temporary materials -i.e. mud and pole called "Swahili type[25]". The housing development trend is increasing year after year which seems to endanger future urban land development (Table 8.4).

[25] *Normally this type of housing is constructed with mud and pole and roofed with grasses or tree leaves.*

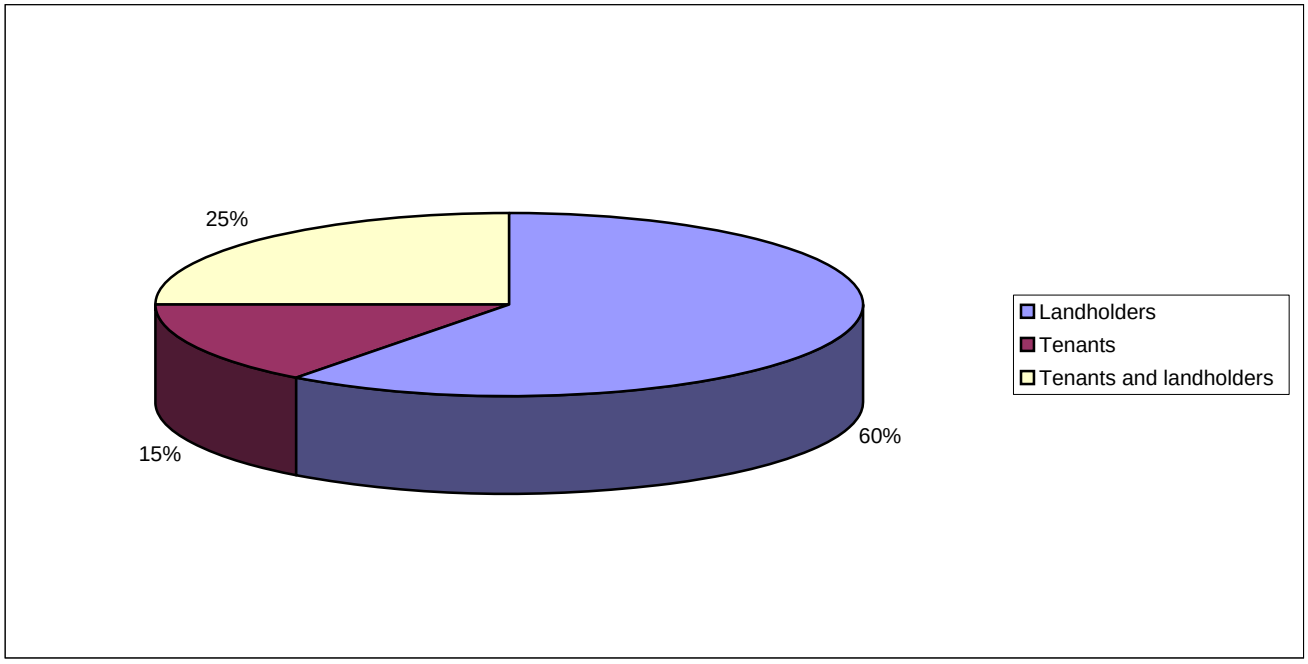


Figure 5.5 Household occupation status the case of Chang'ombe 'A'settlement.

The main sources of water supply are tap water and deep and shallow wells (Plate 5.3). 42% of the total household respondents had on-plot water connection from Mbagala water treatment plant. The deep wells are privately owned and water vending is a common business. The price per 20-litre bucket is TShs. 20/= (0.02 USD). During the dry season, prices for water rises up to TShs. 500/= (i.e. 0.5 USD) per bucket. This price is the same in the other two settlements explored. It is during this period where water conflicts arise (Plate 5.1). Particularly in the use of water for domestic, industry, agriculture and other land use functions. In addition, illegal water connections are common (Plate 5.2), which reduces also availability of tape water in the settlement.

Plate 5. 1: Domestic stress on the use of water in Chang'ombe 'A' settlement: Photo, January 2006.

Plate 5.2: Illegal water connection in Chang'ombe 'A': Photo, February 2007.

The above (Plate 5.1; 5.2) implies a need to think on proper water management systems and cost recovery using water tariffs. One wonders if water tariffs are introduced, will smallholder farmers who depend on tap water continue farming? Absence of auditing income accruing from urban agriculture production for smallholder farmers, imposing tax may be difficult to pay as most farming activities are for home subsistence not for selling in the market. A total of 68% of smallholder farmers in the three settlements confirmed this.

Plate 5.3: Deep and shallow wells in the settlement: Photo, January 2007.

5.3.2 Socio-economic setting

The settlement is administered by a Ward Executive Officer assisted by a Subward and ten cell leaders. The Subwards Secretary, Assistant Secretary and ten cell leaders that are common in Ubungo Darajani support the Subward leader. Four committees with eight members dealing with land and other administrative matters are common in all settlements explored. These committees include; a Subward Development Committee, Health and Environmental Committee, Education Committee, Security Committee and Economy and Development Committee, which are common in all settlements studied. Figure 5.6 presents the major ethnic compositions observed:

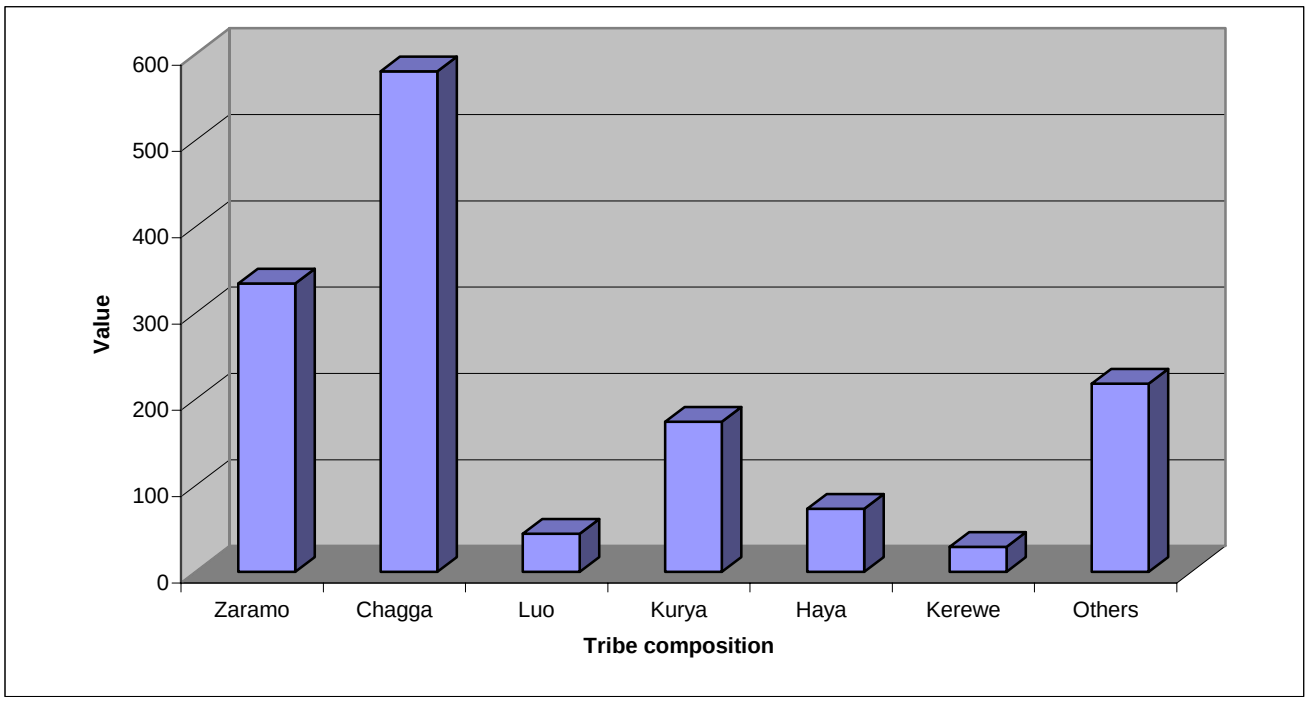


Figure 5.6 Neighborhood tribe composition in Chang'ombe 'A' settlement for 2007.

The Zaramo tribe is a dominant native tribe in the settlement. The mixture of tribe composition signifies the rural urban migration, which have influenced the social, cultural setting and housing development and types. The Zaramo tribe who in principal encroached the land and worked in the industries for the past four decades sold their plots and shifting to periurban zones for farming purposes. Others of the same tribe reported having farms in periurban land and left their houses for the children in urban area. The remaining tribes are residents coming from up country.

Regarding employment pattern, the study found different forms of employment in the settlement. These include Agriculture (18%), Government sector (28%), Non-governmental organizations and Community Based Organizations (12%) and Private sectors including formal and informal business (48%). Urban agriculture based livelihood are observed to be the third employer of the residents living in the settlement. Paradoxically, the absence of formal employment in the formal sector expects enhancing more people to be employed in urban farming in the city, which is common to other Sub-Saharan Africa cities with unsteady economy including Uganda, Kenya and Zimbabwe.

5.3.3 Extent of urban agriculture

The above explanation shows that 18% of the total households involves in urban agriculture. The major types of crops and other forms of farming are as discussed in chapter seven. These production activities are basically meant for local markets selling in streets and for home consumption.

5.4 Ubungo Darajani

5.4.1 Location and spatial development

Ubungo Darajani settlement is found in Kinondoni Municipality within 9 kilometers from the city center (Map 4.1). It is a low land area, experiencing flooding and covers 26 hectares of land. The settlement land use occupation in hectares includes 22.46, 0.25, 2.88 and 0.39 for residential, industry, farming and commercial use respectively (Map 5.3). In addition, limited land and increasing housing densification encourages vertical rather than horizontal type of spatial development in the settlements. Likewise, encroachment of public open spaces including road reserves for urban agriculture is common, which resulted in conflicts of land uses in the area particularly when road expansion occurs (Plate 5.4). This indicates loss of livelihoods of the poor once policy and legislature are not adhered as well as not enforced from the planning stage. Local community involvement at both planning to implementation of the plans to monitoring appeared crucial for reducing the loss.

Plate 5.4 Demolition of structures and urban agriculture lots on road reserves and harassment to smallholder farmers in road strips areas are common: Photos, January 2006 at Ubungo Darajani.

The Ward Population census report in January 2007 showed that the settlement has a total of 934 households with 5600 people. This is an increase from 849 households with 4,245 people in 2002

(URT, 2002). Among the population in 2007, 52% of the total are women and the rest are men. The average household number per family is 7 people showing an increase to the national average (i.e. 6 people per household), which is common in the other two settlements. Landholders, tenants and landholders living with tenants household composition are common (Figure 5.7). It was noted that, the presence of landholders exceeding number of tenants helps the success of the case in implementation of their land use plans (Chapter 6). Particularly for financial resource mobilization, trust building and creating good interaction sphere with experts to facilitate their initiatives. Predominantly, the settlement endowed with river Kibangu, light industries, Tanzania Electricity Supply Company (TANESCO) of which all helps employing settlement residents.

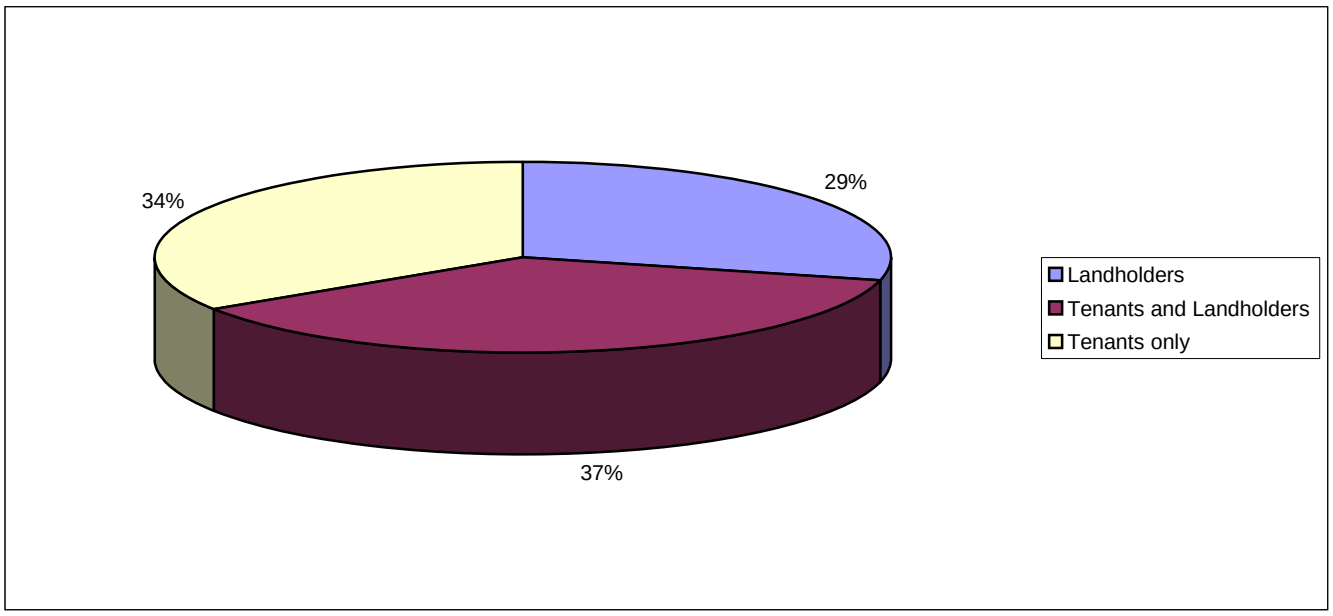
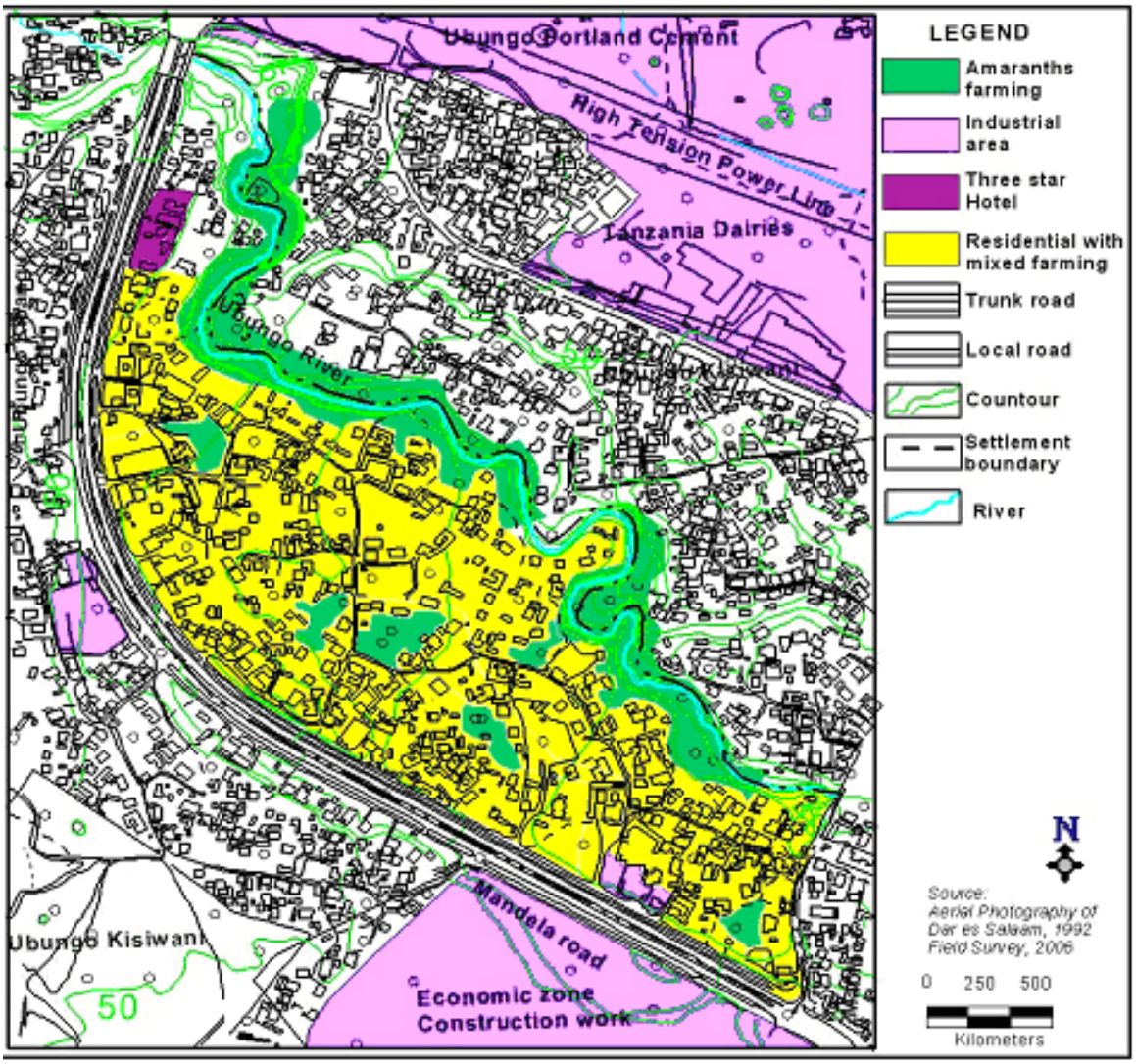


Figure 5.7 Household occupation status the case of Ubungo Darajani.

The sources of water (Plate 5.5), prices and pressure on use appear to be similar to other settlements. In this context, 62% of the total households had on-plot piped water connection. This shows the rest uses the deep and shallow wells for both domestic and urban farming activities. Particular interest voices from the farmer and needs for given title deeds to own these areas under cultivation (Chapter seven). 46% of respondents show the need for the formal granted right of occupancy and the rest were not. In one way this may help these smallholder farmers to access and be granted credit from financial institutions. Similarly, land property tax payment for the local authority can be strengthened and contribute to add value to urban agriculture livelihood. The remaining question is to find out if these smallholder farmers can afford to pay water tariff if imposed on them.

Plate 5.5: Deep and shallow wells in the settlement: Photo, January 2007.

Map 5.3Ubungo Darajani Settlement-Extent of spatial and urban agriculture development



5.4.2 Socio-economic setting

The population of Ubungo Darajani neighbourhood is largely comprised of people from various tribal backgrounds, with diverse social, cultural, economic and ethnic beliefs. These include the *Chagga, Waarusha, Matumbi, Zaramo, Kurya, Nyakyusa, Sukuma and* others coming from other parts of the country (Figure 5.8). The mixed social set-up (i.e. heterogeneity) seems to have created conducive metropolitan environment, which in turn, has helped in land use planning process. The presence of tribe groups, religious groups, women's credit solidarity groups have also constituted important role in plan implementation. This calls for the need to strengthen partnership in land use planning outcome implementation to explore untapped social capital for sustainable use of land.

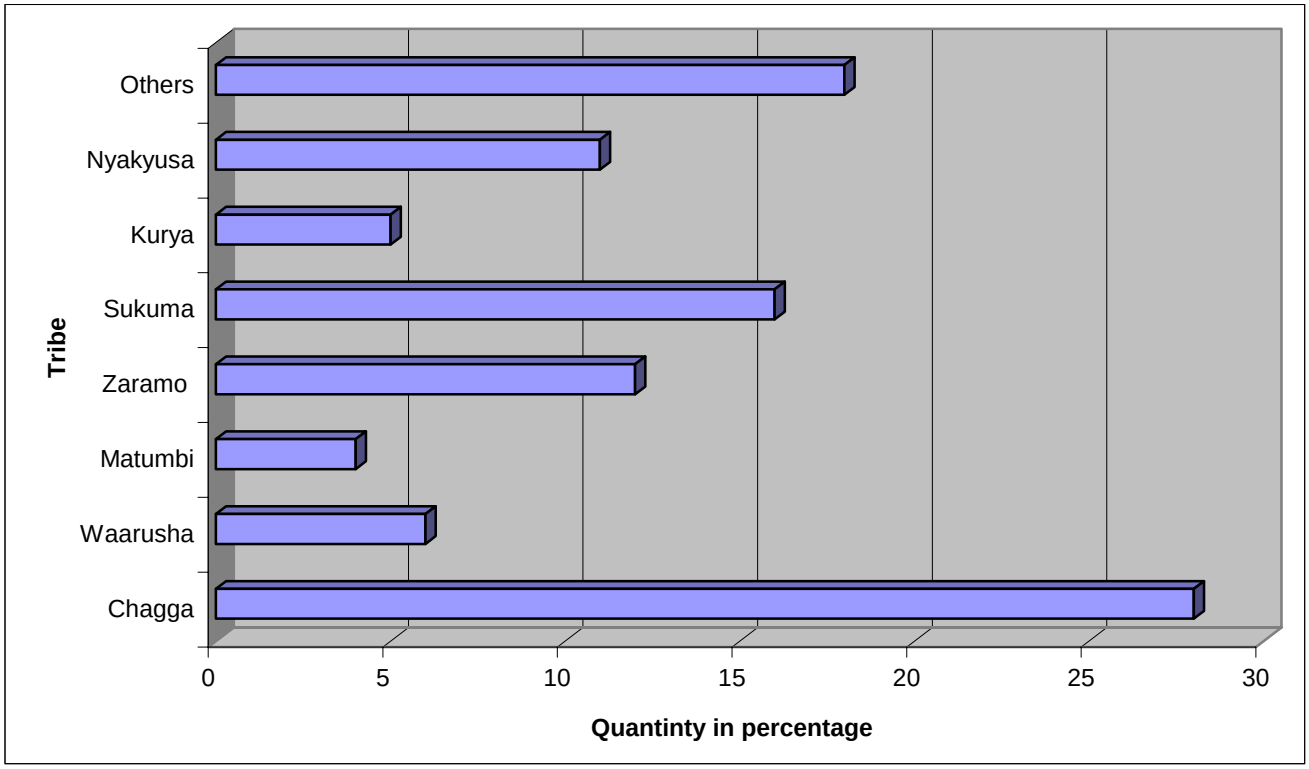


Figure 5.8 Ethic groups and composition.

The Zaramo and Matumbi tribe are the original occupants of the settlement. According to figure 5.8, their presence in the settlement is decreasing as other tribes are coming from up-country. This signifies the changing pattern of social life and cultural change, where the former group depends more on agriculture and have no more land for farming. The only alternative observed is for them to shift to periurban areas to finding more land for farming.

Regarding employment patterns, the study found that Agriculture (36%) is a dominant activity (Map 5.3). Others activities includes Government sector (12%), Non-governmental organizations and Community Based Organizations (7%) and Private and informal sectors (45%). This signifies the importance of urban agriculture for creating employment for a majority of the dwellers in their settlement. Considering the employment rate in the settlement, there is a need to address the challenge presented by the urban agriculture sector in the city.

5.4.3 Extent of urban agriculture

Farming activities are conducted both in plots and off plots (Table 8.2). Ubungo Kibangu river and other sources of water discussed provide water for both domestic and urban farming. Presence of industries (Map 5.3) around the settlement creates fears to residents from consuming farming products resulting in vegetable production along the river. The fear of consumers results from existence of polluted wastewater from industrial activity in river, which is apparently used for urban farming.

92% of the respondents in the settlement prefer inplot gardening products rather than that cultivated along the river. This calls for industrial waste treatment before pouring in the river channel to reduce health risks[26] and fears of the local community in consuming the agriculture products and therefore enhances the income of the smallholder farmers. Likewise, increasing demand for land for housing within the residential plots and absence of land development coordination including housing construction coordination enhances deterioration of agriculture land in the settlement and observed common in other case studies. Besides, it shows that land use plan monitoring is of more relevance in coordinating and controlling planning output.

5.5 Goba

5.5.1 Location and spatial development

Goba settlement is found within Goba Ward in-Kinondoni Municipality. The settlement is located 28 kilometers from the city centre of Dar es Salaam. The Ward has 184.96 ha with a total population of 15,000 people in 2002, of whom 7,603 were male and the rest were female (URT, 2002). The settlement (i.e. the village) had 4,720 populations, with 60 Ha-and accommodating 787 households (Ward census report, 2007). Among the total population, 53% are women and the rest are men. The population distributions were 400 elders beyond 60 years, 4851 were productive labour and 10,972 were children under 18 years.

Land use occupation in hectares for the settlement includes 17.45 for residential and the rest used for farming (Map 5.4). Availability of land in the settlement suggests more attention on forms of urban agriculture to be accommodated in onset of spatial land use planning process. In addition, the study shows that the settlement accommodates a total of 448 houses. The housing status is shown (Figure 5.9). However, the figure shows that more households are occupied by landholders. This observes helping in land use planning process once the landholders as owners of land initiate the process and subsequently contributes themselves to improve their settlement as observed the case of Ubungo Darajani. Only, 66% of the total households had on-plot water connection and the rest were not connected. This shows that the rest of the households were using other sources of water discussed.

[26] *This suggests that may be the water and vegetables can be tested first to see if there really are health threatening pollution levels or if this is just a perception of the people without any basis.*

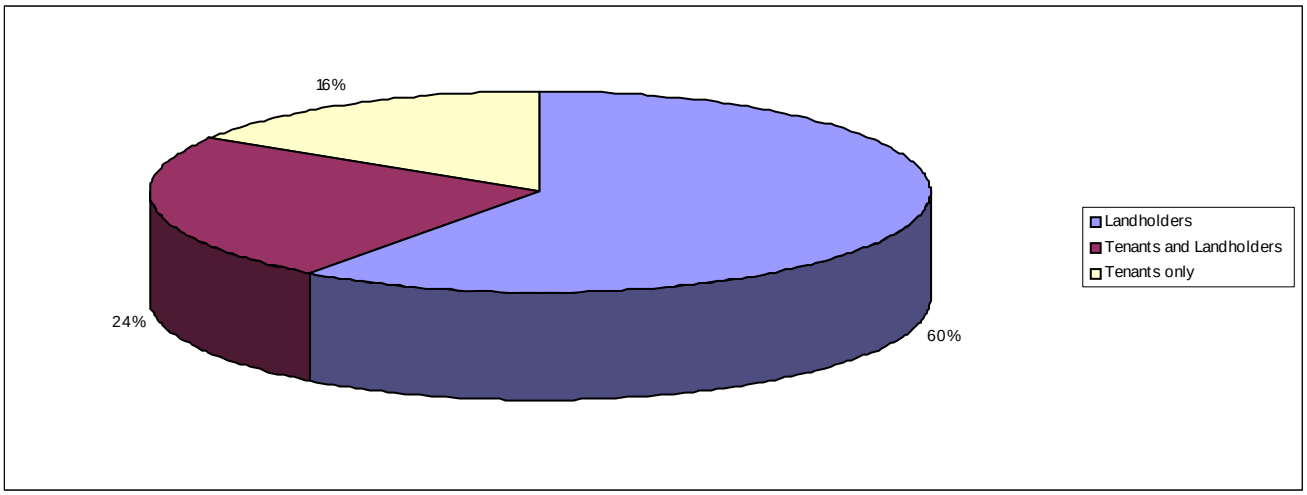


Figure 5.9 Settlement housing occupation status in Goba settlement.

5.5.2 Socio-economic setting

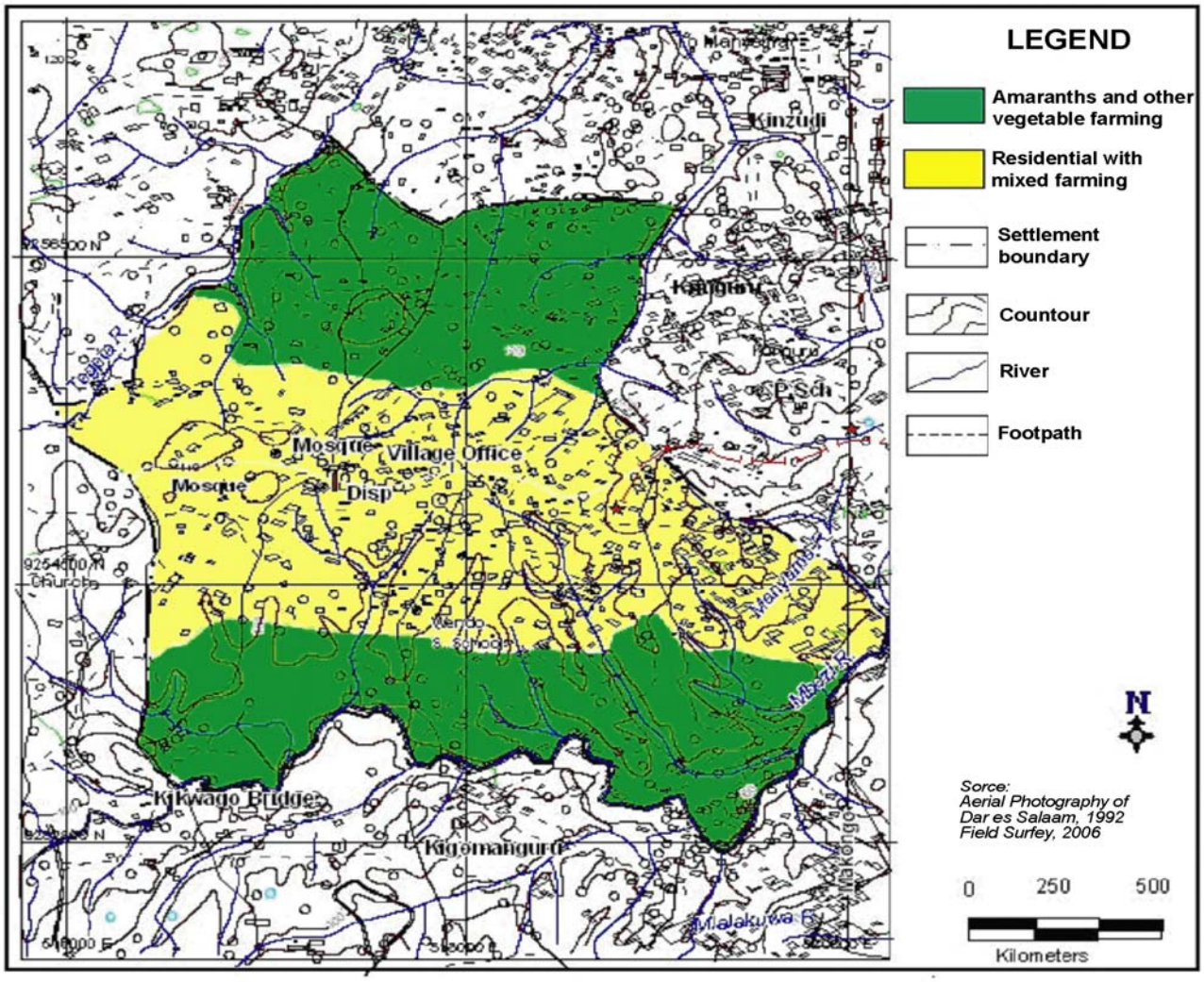
Administratively, the settlement has a Ward Executive Officer (WEO) assisted by three sub-ward Chairpersons and a Village Executive Officer (VEO) at the same time. When Goba ward was established already there was Goba Village, which was fully registered on 25/2/1976. Therefore the settlement is in transitional government leadership structure until the village government will be abolished[27] and form the Sub-ward status meant for urban areas. Main socioeconomic activities and their population occupation include agriculture (55%), local brewing (2%), public employment (12%), petty trade activities (19%) and others (12%) of the total productive labour.

The ethnic groups found in Goba are Wazaramo (32%), Wasukuma (12%), Wanyamwezi (21%) and others (35%). The study notes some investments have so far been invested in Goba and they include multi-million Tanzania Shillings residential housing units (Plate 6), which are coming up. Others include agricultural production, commercial activities and other micro-economic activities. The available investments are however still too few to foster rapid economic development of the area and that being the case, much has to be done to attract investments in the area.

[27] *The Village and Ward authority falls under separate legal setting. The former operates under the Village Land Act of 1999 No. 5 while the later is under Land Act of 1999 No.4 as well as Local Government Authority Act of 1982 revised in 1997. The three laws overlaps each other in the context of conflict in exercising power. These observed common affecting the settlement development. Interview with the local readers in the settlement indicates that an increasing leadership conflict has constrained water and land development projects implementation. The interview held with the Ministry responsible for Lands and Local government officials in May 2006 showed fruitful efforts underway to abolish village government in urban centres declared ripe for urban development.*

Plate 5.6 Housing and periurban agriculture development in Goba settlement: Photo, December 2006.

Map 5.4 Goba settlement-Extent of spatial and urban agriculture development



5.6 Reflections

This chapter shows that Dar Es Salaam city is full of potentials that need to be explored, coordinated and controlled for improving urban land governance and enhancing the social welfare of the urbanities. It indicates that urbanisation process is inevitable for settlement growth. It is evident that the city expansion has taken the would-be agriculture land and green space (Plate 5.7-12) and is utilised land uses including housing development. This goes hand in hand with inadequate housing development coordination, control and therefore agriculture land transformation into different uses is common. Other findings contributed include weak planning institutional collaborations in decision making processes, which make urban agriculture implementation impossible. The next chapter discusses the land use planning processes and structures adopted by planning institutions in the study settlements.

Plate 5.7 Beans cultivation in Goba: Photo, January 2007

Plate 5.8 Sunflower cultivation in Goba: Photo, January. 2007

Plate 5.9 Tomato cultivation in Goba: Photo, January. 2007

Plate 5.10 Pineapple cultivation in Goba: Photo, January 2007

Plate 5.11 Beans cultivation in plots at Ubungo Darajani: Photo, January 2007

Plate 5.12 Trees and flowers growing are common at City center-Samora Avenue: Photo, January 2007

CHAPTER SIX: LAND USE PLANNING PROCESSES AND STRUCTURES ADOPTED BY PLANNING INSTITUTIONS IN THE STUDY SETTLEMENTS

6.1 Introduction

The previous chapter discussed the study areas and issues connected with improving urban land governance in line with land use planning and urban agriculture practises in Dar Es Salaam. This chapter describes and analyses attempts made by different stakeholders including landholders and government in land use planning. Processes involved in land use planning, inherent structures and factors for the success or failure of the case are documented. Similarly, the role of actors, challenges, impacts of land use planning processes to urban agriculture and the missing link for integration are analysed. The study ends by providing reflections on the contributions made in this chapter towards improving urban land governance in Dar Es Salaam city.

6.2 Process and structures in Goba, Ubungo Darajani and Chang'ombe 'A'

Governing[28] land development in rapidly urbanising cities in Sub-Saharan Africa needs proper coordination and control of land use planning practises. The practise requires meeting the demand of various planning institutions, sharing responsibilities, commitments and resources at different levels (Figure 8.1) in a participatory manner to redress urban poverty and urbanisation impacts. In this session, land use planning process and structures are analysed in terms of understanding the context, evidence and links of urban planning institutions in initiation, preparation, implementations and monitoring structure. The context among others reflects the use of the master plans, which claimed to be rigid and inflexible to urban changes i.e. unconventional planning approaches (Chapter two). The conventional urban planning approaches insist community[29] involvement in land use planning practises including that of strategic and land regularisation[30] plan preparations. Evidences are derived from the three cases in which land use planning output were prepared and implemented. However, the link, interaction and resource mobilisation created by the local communities and other preparatory authorities in land use planning were documented. This signifies the role of the social capital in spatial land use planning processes.

Initiation

The Ministry responsible for Lands and Human Settlements Development is the overall coordinator and controller of land use development matters in Tanzania. It is within this power the land policy and legal instruments mandate the Minister to declare Goba, Ubungo Darajani and Chang'ombe 'A' as planning areas. The declaration was made on 13th/08/1993 through Government Notice (GN) No. 231.

Before the declaration of the mentioned settlements as planning areas, they were zoned for different land uses according to the 1978 Dar Es Salaam master plan. Chang'ombe 'A' settlement was zoned as an industrial area (Map 5.2). Ubungo Darajani was zoned as hazardous land, which experiences flooding. It was observed not suitable for residential development and therefore was placed for

[28] *In this context refers to a process of involving different community interested in urban land development under established norms to initiate, plan, implement and monitor land use planning outcome.*

[29] *This includes landholders and tenants who involve in farming and non-farming activities in their settlements. Others include private sector, civil organisation, donor community, central and local government authorities.*

[30] *Refers to processes entailing land use plan preparation, cadastral survey, infrastructure provision and land registration towards enabling landholder to acquire formal granted right of occupancy in informal settlements. This is provided in Tanzania Land Act of 1999 No.4 Sec. 62.*

future industrial area development (Map 5.3). Goba was zoned as agriculture land for future city development (Map 5.4). The increasing demand of land for housing and city investment necessitates among others, the need for city expansion to accommodate the increasing population. It is better to note that, once areas have been declared as planning areas ripe for urban development, the land use preparatory authorities have to prepare land use (layout) plans. This is a compulsory pre-requisite for guiding settlements development in theory but in practise hardly adhered by the city authority as the cases shows. The non-adherence to policy i.e. theory to practise in land use planning and management seems common in most Sub-Saharan African cities including Lagos and Nairobi (Arimah, 1999 and Kreibich *et al*, 2002:112). It appears that unstable country economy, incapacity of local authorities in terms of human resources and funds for implementing their development plans priorities and disjointed policy and legal framework are the causes. In addition, the power of land use planning initiation in Tanzania is central government centered. This looks to have detrimental effect (Refer 6.5 and 6.6) in terms of integrating local values, norms and output implementation in land use planning processes.

Following the need for preparing the land use plans, the initiation to engage in land use plan preparation was made in the three cases after declaration. The motivation and priorities of the government through the Ministry responsible for land to engage in land use planning for these settlement, depends on the purpose, priority setting and funds available. The government seems to forget the untapped social capital at local community level, which can be mobilised and used to facilitate the land use planning. The non-consideration of the untapped capitals for decades, creates many land use planning outputs not implemented. This was due to the use of master plans, which put planners in offices when preparing plans without visiting the sites. This situation put farmers far from using land for increasing their production for the past four decades in the country, which are common in other Sub-Saharan Africa cities. This resulted in aggravating urban agriculture expansion and increased informal settlements in the region.

In supporting the foregoing, the initiation for Goba settlement was made by the MLHSD as a planning authority. The motivation for the Ministry to initiate this process was through need to decongest the city, where satellite towns like Goba could be formed and developed. Other targeted reason observed include helping improving urban service such as reducing traffic congestion and long traveling distance of more than 10 kilometers faced by landholders searching for goods and services. Besides, opening up the periurban areas such as Goba is a strategy for discouraging the linear settlement growth of the city (Map 5.1). The mentioned appears to be critical areas for the government to initiate land use planning process in the settlement. Considering urban agriculture for food security and poverty reduction by that time was not a priority and this seemed to encourage unorganized farming.

Until March 2007 when the field survey was carried out, no huge investment from the government side has been invested in the area. Informal housing and unorganised agriculture development are common features in settlements engulfed by urban expansion without change of its status during declaration. The village authority in land legislative is mandated offering land to individuals. 72% of respondents in the study settlements show that deregistration of the village once the declaration is made in important in periurban land. Similarly, acquiring land from residents, reallocating it to the needy people including smallholder farmers can make sustainable use of land if properly organised. These were good strategies to be adopted, but the government partially achieves this potential obligation for future settlement development as the practise showed. The acquiring of this land can help reduce land use conflicts, housing demands and enhance land use investment allocation in the city. However, it requires financial resources for covering compensation for those affected. This calls for partnership in land use planning, which requires increased funds in implementation of the outputs.

In the case of Ubungo Darajani, the initiation was done by a Community Based Organisation (CBO) called Ubungo Darajani Settlement Development Association (UDASEDA) in 1997. The organization members who were landholders were motivated after the government declaration in 1990 on its intention to acquire their land. This followed the purpose proposed in the 1978 Dar Es Salaam Master Plan previously explained. 35% of the landholders were motivated by the fact that they had started surveying their plots before the initiatives, but failed due to prohibitive costs. Similarly, some had been swindled money by unregistered surveyors. The three factors created solidarity among the settlement because they had faced common problems.

Following the Dar Es Salaam Master Plan, the zoning was done despite extensive mushrooming of private housing development that already existed since 1960's in the settlement. It should be noted that the Master Plan was also prepared without taking into account landholders' views, preferences and inputs. Likewise, the plan proposal was not implemented at the time. The interviews with the Subward leader revealed that the majority of landholders were not even aware of the existence of such a plan. Many continued to subdivide their land for sale without regards to the 1979 plan proposal. The subdivision affects urban agriculture implementation as land is getting smaller and smaller (i.e. incremental farming). This observation of land subdivision appears to be common in others study settlements explored in this context.

The land use planning initiation in Ubungo Darajani took a duration of two years while the other cases took only six months. The initiation entails writing orders and directives to planning authorities and local leaders. The case of Ubungo Darajani involves establishing contacts with local authority and consultations with various planning institutions[31] for support. Presence of a community championship who was selected during the first community general meeting helps in the success of the case. He was a retired civil servant, a landholder and a Subward leader. This builds trust and he was able to make follow-ups and calls for meetings by inviting politicians during land use planning processes (see also section 6.3).

The case of Chang'ombe 'A' settlement in Temeke Municipal Council as planning authority initiated the land use planning processes after the declaration by the Minister responsible for Lands. Like Goba settlement, the Municipal authority as a planning authority[32] did not involve local communities in the processes in this stage. This created difficulties for integrating local community needs including smallholder farmers' needs and interest in land use plans preparation and subsequent implementations. The interview with Ward and Subward officials in the settlement reported that these land use plans were prepared in the local authorities office. The respondents showed that usually the local authorities do land use planning in their offices assuming the land is vacant. This implies that this is wrongly perceived to the way the settlement is developing and later becomes even difficult to evict them when much is invested by a landholder in their plot. Site[33] analysis before land use planning is an important strategy to redress the gaps of the urban land use planning theory to practise on the ground. This helps strengthening urban land governance in Sub-Saharan Africa cities including Dar Es Salaam-Tanzania.

---

[31] *Eight consultations with University College of Lands and Architectural Studies (UCLAS) today namely Ardhi University and four with the Ministry responsible for Land and Settlement Development were made before embarking in the processes in 1997-2004.*

[32] *This refers to authority responsible for land use planning preparation, endorsement and approval. In case of Tanzania are local authorities, Joint area Planning Committee, Regional secretariat and Ministry responsible for Lands and Human Settlements Developments (urban Planning Act of 2006; Land Use Planning Act of 2006).*

[33] *This involves site inventory where existing uses, soil conditions, climate, physical features, adjacent settlement and facilities, potentials for settlement development and impacts of the plan making including compensation schedules and other unexhausted improvements documented for helping decision making.*

Decision making processes

The top down approach in decision-making for land use planning is common in both Goba and Chang'ombe 'A' settlements, which was used by the Local Authorities. The Authorities made the decision to engage in the process after receiving orders from the central government. In the case of Ubungo Darajani, the decision was a bottom–up approach where consultation with the Ministry responsible for land was made and verbal explanations for going ahead with land regularisation process reached. The verbal expression given by the Director of Human settlements Development at the Ministry responsible for Land and Human Settlements Development helped the community make the final decision to engage in land use planning process.

The landholders including smallholder farmers in Ubungo Darajani were active participants in the planning processes. They had interaction as well as two-way communication (Figure 5.4) with other planning institutions before a decision was made. This was an important step and opportunity for integrating urban agriculture in their plans, but hardly achieved. Respondents in Ubungo Darajani argued that the process of regularization was too bureaucratic, therefore they sought UCLAS for help. In other study settlements, local government authority and central government through the MLHSD made all decisions. In fact, in both study settlements, demarcation for agriculture land in land use plans prepared was not a priority, which shows that more need to be sensitized to understand their rights according to legal and policy stands on implementing their livelihood strategies in formal ways.

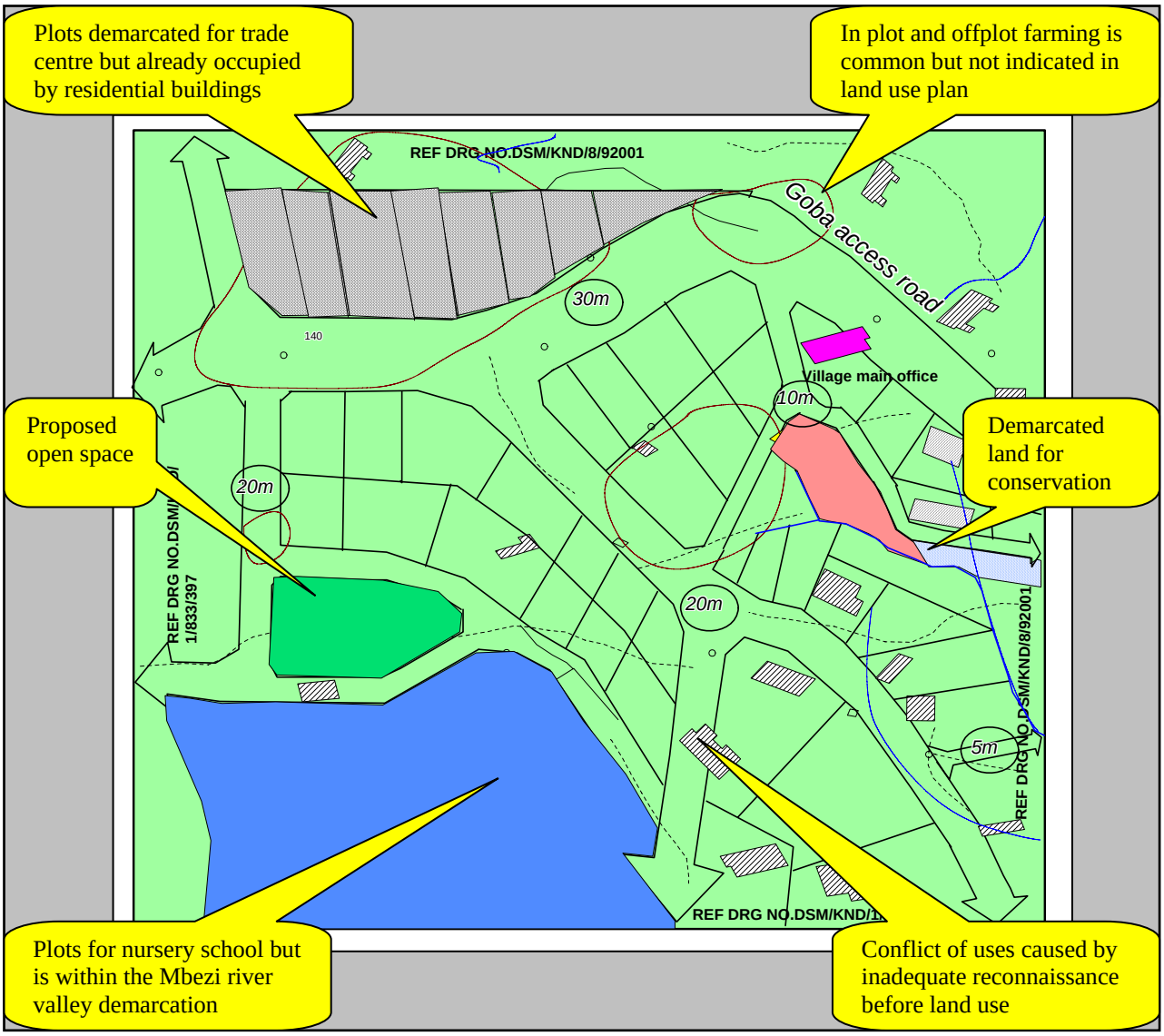
Based on the Land Act of 1999, sect. 56-62, some issues were not considered when decision making was taking place for allowing land regularization in Ubungo Darajani. These include the compensation schedule of landholders who had been owning land in the area. The Director of human Settlement in the Ministry responsible for Lands was hesitant to allow them a written explanation understanding that compensation was important to be made before a decision is reached in land use planning processes. In this case no compensation was given to any landholder, instead volunteering to offer their land for public use is common. This helped building solidarity among actors as all had the same felt problem. The volunteering and attending meetings during decision making built solidarity of the group and subsequently enabled them to implement their spatial land use plan. This habit provides lessons to urban planners and managers on how to mobilise and tape this social capital at local level potential for urban land use planning implementation. Social interactions and meetings appear to be important to achieve community involvement in land use planning and subsequent urban agriculture implementation.

Preparation

The formal processes (Chapter two) were followed in the preparation of Goba and Chang'ombe 'A' settlements land use plans. The case of Goba a total of eight[34] land use plans prepared from 1994-2006 (Figure 6.1 extract). Similarly, the land use plans for Chang'ombe 'A' presented in Figure 6.3.

[34] *These includes Kunguru residential layout plan drawing No. 1/802/1295, approved on 23/7/1997, Goba residential layout scheme II drawing No. 1/818/896 approved on 23/7/1997, Kunguru residential layout plan I drawing No. 1/808/196 approved on 23/7/1997, Kunguru residential layout plan drawing No. 1/804/196 accepted by the UPC on 23/7/1997, Kunguru residential layout plan drawing No. 1/809/196 accepted by the UPC on 23/7/1997, Goba settlement scheme III drawing No. 833/397 approved on 5/11/1999 and Kunguru residential layout plan IV drawing No. 1/13/122000 approved on 15/3/02.*

As per CAP 378, the detailed land use plan could not be prepared in the absence of the general planning scheme. The law allows the preparatory authority to prepare a detailed planning scheme redefining different land uses. It requires the preparatory authority to serve a four months notice to enable residents to comment and at the same time prepare alternative land use plan and submit to the preparatory authority (Cap 378). The preparatory authority did not give this opportunity to the landholder as required by law and observed as one source of land use conflict raised during plans implementation in Goba and Chang'ombe 'A' (Figure 6.1).



Source: *Adopted from TPD No. 1/736/1193, approved on 2/12/1994 for Goba-Mchangani neighborhood.*

Figure 6.1 Extraction of Goba land use plan.

Moreover, land use plans prepared by the preparatory authority hardly consider existing types of development and assume land is bare which is not true[35]. Presence of many land use plans unimplemented signifies loss of resources used for many African Countries including Tanzania as the case shows. This indicates that land use planning needs to be regarded as a socialization

[35] *Up 2002, when the last land use plan was prepared and approved, Already a total of 1800 households were living in the settlement with population merit to 15,000 people in Goba (See URT, 2002 Census Report).*

processes where landholders and other planning institutions are taking part in their preparation and subsequent implementation and monitoring processes.

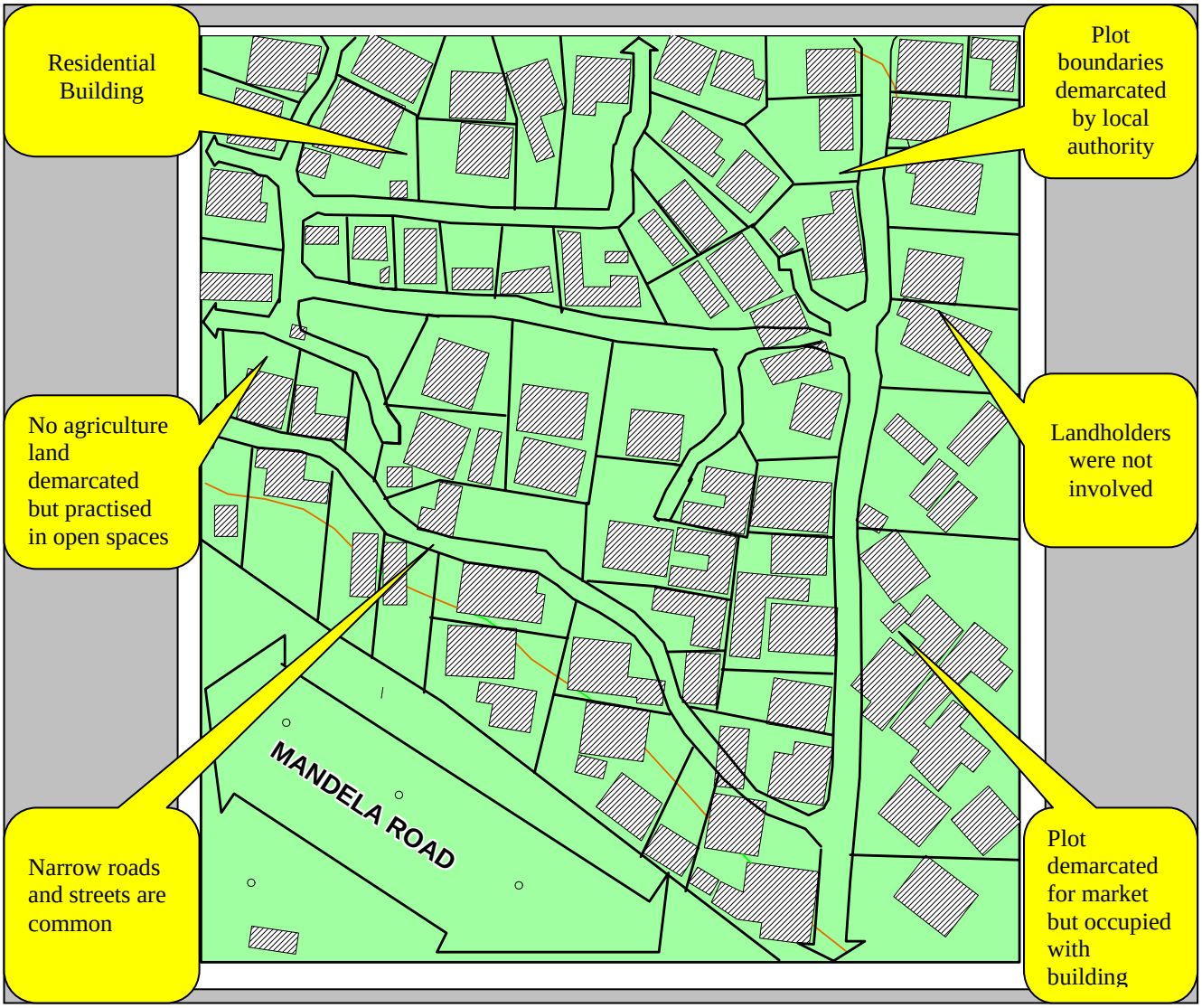
The case of Chang'ombe 'A', this plan was prepared without residents' awareness, as people understand that they should be consulted in plan preparation. Only the Local leaders were consulted including Councilors and Ward Executive officers. Others include subward leaders and tencell leaders. These leaders gave information on some specific sites on land property ownership status. These imply that the majority of neighborhood households involved in urban agriculture and others were not aware of what was happening. One respondent remarked:

> *"…during the process of land use demarcation, I asked the local leader who was showing my plot boundaries to the town planners, "why are you showing my plot to a person who I don't know?". The leader replied that they were Town planners who were demarcating some of our plots to improve our settlements through proper planning. Because we understand the function of urban planners, most of us kept quiet and the process went well. I came to realise two years later that my plot was demarcated as a trade center and this is the practise of planners in the city".*

The statement implies that most of the landholders in the settlement were not aware of, or even understanding their rights to get involved in the process and subsequently accept or reject the Local authorities land use plans prepared. This calls for capacity building, empowerment and awareness creation. The question here is, how can community involvement be effective and powerful?

It had been noted also that immediately after the plans were prepared, and they not properly disseminated[36] to them or to the local leaders' office. This could have been useful in helping them in coordinating and controlling land development. The non-dissemination of the land use plans is caused by the legal requirements in the country. This has deteriorated community efforts to coordinate and control land development in the case study. This shows the importance of community involvement and information accessibility in land use planning.

[36] *The government circular No 5 of 1999 issued instruction directing that plans prepared should comply with intentions of the Master Plan or the land use scheme in terms of density, broad zoning, major roads, approved planning standards etc. The instruction required that a copy of the approved layout plan be distributed to Regional Land Development Officer, District/ Municipal Land Development Officer, Regional Surveyor, District Development Director (DDD), Valuers, Utility Agencies (Water, TANESCO etc) and Regional/District Engineers. Local leaders including Ten cell, Subward and Ward leaders were not mentioned in this order. The Land use Planning Act and Urban Planning Act of 2006, provided the same limitations.*



Source: *Adopted from TPD No. TP/DSM/MISC/92/499 of Chang'ombe Unubini neighborhood upgrading.*

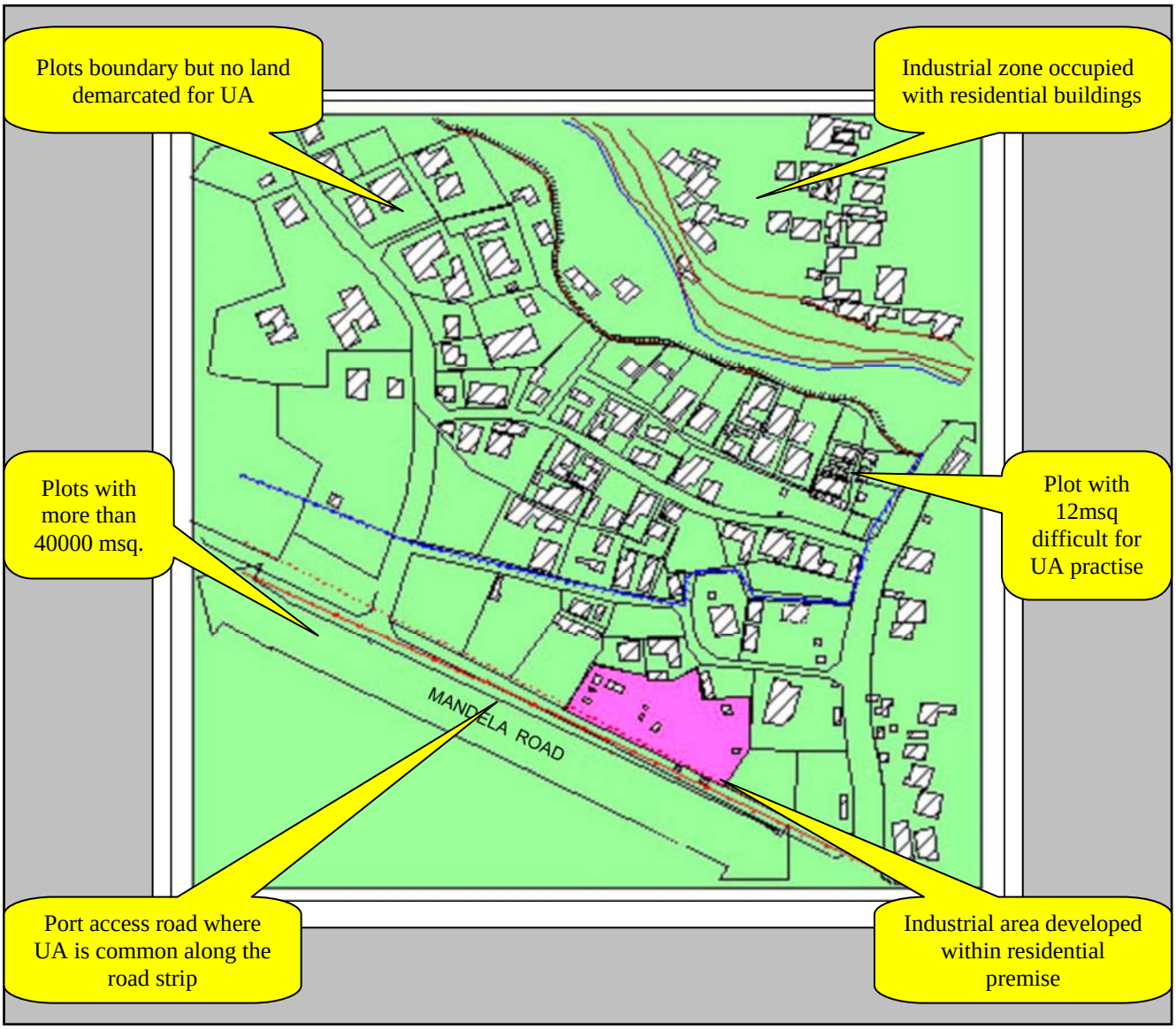
Figure 6.2 Extraction of Chang'ombe 'A' land use plan.

Ubungo Darajani-a community initiated land use planning process also follows the formal processes, but differs with the former one explained as it was more participatory towards securing their land tenure discussed below:

In late 1998 the Ubungo Darajani Community Organization (UDASEDA) approached the UCLAS with a view to seek their support in preparing a regularization plan. Before contacting UCLAS, the community organization had consulted local authority (i.e. Kinondoni municipality) seeking its support in preparing a land use plan, a cadastral survey and land registration. The local authority directed the landholders to consult the Ministry responsible for Lands and Human Settlements Development (MLHSD). From the interviews with local authority officials, it was revealed that the local authority was hesitant to give the community a go ahead because there were unclear issues regarding regularization policy and approach. This includes declaration protocols, appropriate planning standards, budget, and compensations matters. With this respect, the local authority referred the community to the MLHSD in order to comply with Land Act of 1999 section 58(1) requirements, which states;

> *"…the Minister may, of his own motion or at the request of urban authority or a village council within an urban or peri-urban area, either direct the Commissioner to consider, or appoint an inquiry under section 18 to consider the question of whether any area to which section 60 to 64 declared to be an area of regularization".*

When the MLHSD received the proposal, it asked the community to follow-up a reply after some weeks. After a month the Ministry endorsed the community request, but verbally advising them to contact UCLAS. However, promised its support to meet the community's endeavor. In a way, the MLHSD endorsed the community request informally i.e. verbally and not in writing because it was hesitant to commit itself (in writing) as it was not sure whether the community would be able to mobilize resource for carrying out the regularization plan–i.e. plan preparation and its subsequent implementation including paying compensation in accordance with the Land Act of 1999. The community thus contacted UCLAS and a contract to engage was drawn. Among other things, the contract required the consultant to produce a regularisation plan (detailed land use-layout plan) as one of the outcomes[37]. Other phases, which were considered but not included in the agreement, were cadastral survey and land registration.



Source: *Adopted from TPD No.DSM/KND/27/102002 for Ubungo Darajani neighborhood.*

Figure 6.3 Extraction of Ubungo Darajani land use plan.

In land use planning, UCLAS undertook the following activities: Field reconnaissance, conducted a general assembly (meeting) where the regularisation process was explained and clarified to the community members. Also, preparation of base maps, forms for negotiation and property

[37] *The cost of its preparation amounted to TShs. 1,260,000/= equivalent to 1,167 USD in the respective year.*

registration were prepared together with identification of areas for community facilities such as major roads and other public services. Other activities include plot demarcation through negotiations and layout planning. Submission of the layout plan to the local authority scrutinisation, endorsement and presentation to the Ministry for Lands approval was also done by UCLAS. UCLAS was also involved in making follow-ups in collaboration with the community organization leaders in which, a total of 64 trips were made. The preparation and approval of the detailed layout plan in the second stage took duration of 3.5 years. One wonders why land use planning took such a long period years despite presence of institutions and experts available within the same area of jurisdiction. This is common practice in most of African countries with the fact that urban planning is more centralised.

Financial social capital mobilization during land use planning preparation

Landholders and tenants living within and outside Ubungo Darajani settlement were involved and contributed both in cash[38] and in kind. In preparation for the detailed layout plan only 162 (60%) landholders contributed out of 269. 40% of landholders did not contribute because of various reasons including misconception and distrust of local leadership and poverty. Among the 60% landholders who contributed in cash, 27% contributed in installment in which 28 were women and 74 were men. It was also noted that 15% of landholders paid the full amount, among them 10 were women and 50 were men. Not only that but also 58 % was contributed by high-income people to compensate those who could not raise sufficient funds. This implies that high-income people make the project fruitful (Table 6.1).

Table 6.1 Landholders contribution in cash during land use planning phase

Landholders	Installment payment (TShs.2000/=)	Full Payment (TShs.6000/=)	High-income Volunteer-20 @ (TShs.36, 000/=)	Contribution (%)	Landholders Not contributed	Total landholders
Women	28	10	-	23	42	80
Men	74	50	20	77	65	189
Total No.	102	60 including high income			107	269
Total amount	204,000/=	360,000/=	760,000/=			
Percentage	15%	27%	58%	100	40%	100%

20 landholders were absentees noted. Among 20 absentee landholders, 12 were noted living in other settlements within the city and 8 were living outside Dar Es Salaam city. It was reported that 4 out of 12 landlords within Dar Es Salaam responded and participated in regularisation in cash while the two living outside Dar Es Salaam responded also by contributing in cash.

A credit institution named *FINCA* provided financial support to local settlers. Credit from FINCA to community members was granted on the agreement that the beneficiary pays an interest rate of 15% of the amount borrowed meriting from 90 to 270 USD for six months. Interviews with credit facility officials revealed that the institution intention was to help landholders to implement land regularisation process so as to enable them to obtain title deeds. However, a women's group association provided financial support to its members through their credit facility (*Upatu*[39]). 40 women who were given the credit used it for land regularisation process and for improving their farm lots through buying seeds and fertilizers for farming.

[38] *Efforts to get the total cost used for the preparation in March, 2007, to the Ministry responsible for Land and Human Settlements Development was difficult to be obtained during the field survey as more procedure to request the Ministry expenditure seems to be a confidential aspect for the government operations. But one wonders why? And no fruitful answers were given during the study follow-up.*

[39] *This is"Swahili acronym" means of form of cooperative where people collaborate in contributing money for each member in a specified period agreed among members.*

Implementation

Land use planning implementation is important towards improving urban land governance. But, what is involved in land use planning implementation? This entails the whole process of linking theoretical framework of land use planning output from policy and legal requirements of the state priorities to the local realities urban development presents (for example urban agriculture) on the ground. The wrong starting phase of the planning processes results in implementation difficulties. The opposite turn into successes as the case indicates on conflicts emerging during initiation, decision making and preparation phases. Particularly, these happen when the local level realities of the urban poor fighting for survival are neglected. For example, neglecting urban agriculture, harassments from the city council and inadequate awareness creation on policy and legislature guidance in development of urban land among actors are apparent features appeared.

In supporting the foregoing in *Goba* settlement, in 1998 the Ministry responsible for land intentioned to use the land use plans prepared for cadastral survey in the settlement. Landholders[40] were neither aware nor understood the existence of the land use plan already prepared by the government. The plan was prepared in offices assuming the land is bare and only some residents were informed during the preparation-particularly local leaders including, the ten cell[41] leader. Some landholders noticed that the government violated the law requirement. With this violation of the law, the preparatory authority embarked on implementing the land use plan through cadastral survey. This was the time when landholders resisted and made the implementation impossible. Until June 2006, Kinondoni municipal council in collaboration with the Ministry for Lands was struggling to implement these plans but still the struggle was in vain. This is caused with existing disputes among landholders who reacted on the validity of the plan. It was observed that although the conflicts existed, some individual landholders had surveyed already 600 plots. This clearly indicates the fundamental need for more local stakeholders participation in land use planning.

Due to inadequate landholder involvement, the allocation of land to people who demanded land in this particular settlement was hardly achieved by the Local Authorities in the city. This shows the need for community involvement in planning processes. However, up to March 2007, when this study fieldwork was carried out, individual developers including smallholder farmers through their own initiatives have been going to the Municipality to request for their pieces of land to be surveyed. In most cases the developer uses their personal car to transport the surveyors to the site. In such a situation of adhoc surveying, there is room for corruption. It was noted also that the surveyor has the chance to negotiate with the client (developer) at the expense of the layout plans. Given the fact that the client has a chance to negotiate terms of the survey, with the surveyor the possibility of violating standards of the layout plans is high. This seems to be a common problem in planning for peri-urban areas not only in Africa.

The land use planning process took not less than six months from the date of application as the Ubungo Darajani case shows. This discouraged people who were to implement their land use and avoiding their money from being swindled. This shows disjointed urban planning practise in the city. Principally this indicates the need for working in partnership towards implementing land use

---

[40] *Interview with one respondent in Goba, who is also a ten cell leader on April, 2006 remarks that, landholders were not informed on the existing plans and its subsequent implementation in the Village. They used to resist the surveyors to implement the plans by sending them back in the settlement for survey. They used to find a lawyer to explain to them on the procedures required and therefore until to date (June, 2006) no further land surveying have been going on in the settlement.*

[41] *In Tanzania refers to a lower level unit of the organisation set-up, which consists of 10 households as a leader. It is a political leader, which have no any wage and mainly are the one who sells and enhance land subdivision and therefore enhancing informal settling.*

planning output. Similarly, the community involves in infrastructure improvement including drainage construction to prevent flooding.

Drainage construction

In the case of Ubungo Darajani, after preparing the land use plan, they went further by involving in infrastructure improvement and cadastral survey, which are part of the land use planning output implementation. The infrastructure improvement including drainage construction and water provision were done. After the plan was prepared, the community used the plan to construct a 900-metre drain. The drainage construction helped to prevent floods especially during the rainy season and therefore improved their living environment and other health consequences. Landholders and tenants within the settlements contributed 785 USD for the construction of the 3 drainage and 2 culverts facilities. Local labour residing in the neighborhood that did not pay in cash in land use planning helped with drains constructions. People with vehicles contributed in terms of bringing sand and cement for the construction. This helped to improve the situation as well shows importance of tapping social capital for settlement improvement.

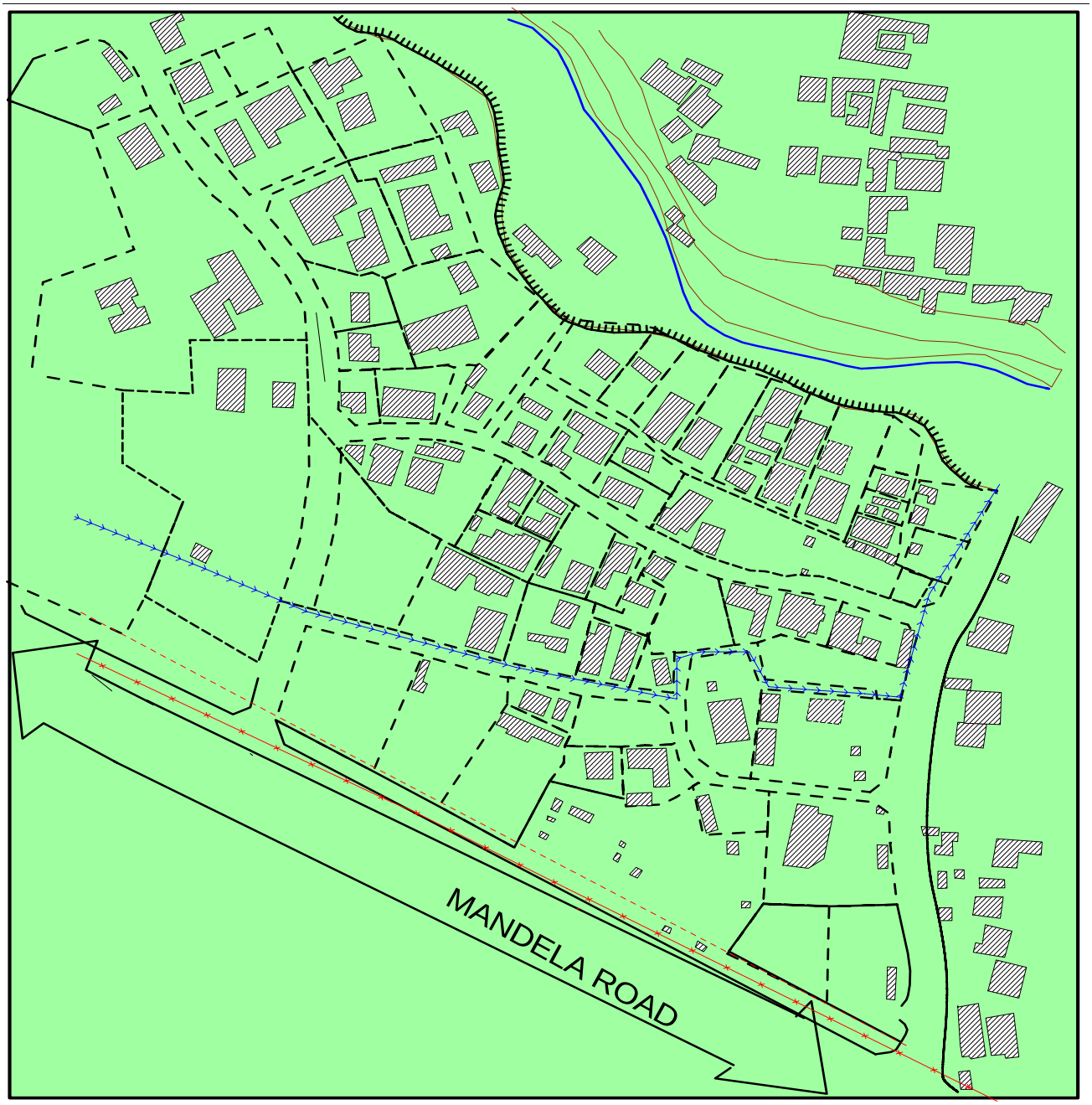
Cadastre Surveying

After the layout plan was approved by the MLHSD in November 2002, local leaders convened a general assembly involving all landholders to inform them about the approval of the detailed layout plan and commencement of the second phase, which comprise cadastral survey. The meeting endorsed the progress and directed the community spokesman to identify a surveyor who could help to survey their area. In order to strengthen the community organization, new committee members were elected to assist the old committee namely Community Land Development Committee (CLDC). The CLDC in collaboration with UDASEDA leaders were given overall charge of the process of carrying out the cadastral survey and title preparation. In an attempt to start the surveying work, UDASEDA and local leaders consulted Kinondoni municipality, who directed them to contact UCLAS. The surveying department at UCLAS submitted an estimate showing that the cadastral survey of 26 hectares would cost TShs. 21 million equivalent to 19,500 USD. Another surveyor in Morogoro (a city in Tanzania) quoted TShs. 28 million equivalent to 26,000 USD.

The CLDC leaders informed the community about the cost quoted by the surveyors in a general assembly. The general assembly resolved that the committee should approach the MLHSD for help. On learning about this, the MLHSD referred them to Survey Consults, a private firm that agreed to undertake the work, at a much cheaper charge. After visiting the site, the consultant (Survey Consults) asked the community organization leaders to submit to them an approved layout plan for costing purposes. The cost for the cadastral survey by the firm was 3,800 USD for 237 plots. This excludes the 32 plots already surveyed. In order to be in position to start the work the firm (Survey Consults) asked the community to seek survey instructions from the local authority. The community representatives to this effect wrote the letter. The processing of the survey instruction by the local authority took nine months, i.e. from February to October 2003. Following the issuance of the survey instruction, from November 2003 to February 2004, the community mobilised and collected funds for implementation. At this stage the Councilor and the Member of Parliament stepped in to sensitise the community to contribute cash in order to implement plans (Figure 6.4).

In short, the process involves: Sending a written request for community or individual intention to survey the area with a purpose to the Local authority. The Local authority writes to the Ministry of Lands and Human Settlements Development informing of its intentions. Once the Ministry accepts it instructs the Local authority to write to the applicant the survey instructions and be the overall supervisor of such land development implementation. In this case Kinondoni and Temeke

Municipal Councils were the local authorities consulted. The developer is then given estimates for surveying his plot.



Source: *Extract adopted from Ubungo Darajani Survey Layout Plan of 2003.*

Figure 6.4 Part of Cadastral survey for Ubungo Darajani settlement.

UDASEDA chairperson signed a contract with the Survey consultant to survey the area at a cost mentioned previously. Out of the 269 landholders (Table 6.2), 182 contributed in full payment (59%) while others in installment (16%). The amount contributed summed up to 75% of the total cost of the cadastral survey. This shows that 25% of the amount requested was not paid. This implies that only 68% of landholders contributed while 32% landholders did not contribute though it was noted that the latter were joining the community in the cadastral survey implementation process. In this phase a bank account of 2780 USD was opened and residents were depositing their contributions.

Table 6.2 Landholders contribution in cash during cadastral survey phase

Landholders	Installment payment (TShs.12, 000-18,000/=)	Full Payment (TShs.30, 000/=)	Contribution (%)	Landholders Not contributed	Total landholders
Women	38	12	28	30	80
Men	64	68	72	57	189
Total No.	102	80		87	269
Total amount	667,500/=	2,400,000/=			
Percentage	16%	59%	75% contributed	32%	100%

Adopting flexible payment for land regularisation was the most important factor, which enabled the community to raise funds. People who joined then were accommodated after those people who have to pay for them. This was noted to be a sign of prestige of some landholders who contributed.

The ccontribution of women was seen to be important, 17 % of women landholders contributed in instalment while 6% contributed fully making a total of 23% of women that were contributing to the process. During the cadastral survey, it was observed that 22% contributed in installment while 6% contributed in ful making a 28% contribution in the process. The womens contribution in cash amounted to 19 % i.e.915 USD of the 4750 USD amount contributed in land use planning and cadastral survey phases. This shows an increase of 5% of women contribution from land use planning to the cadastral survey. This signifies the importance of integrating women in land development activities.

The case of Chang'ombe 'A', the implementation of land use plans was on an individual basis. Respondents within the settlement showed that for the cadastral survey, the contribution ranged from 300 USD to 800 USD for surveying a low and medium density plot. This amount observes to be too high for a landholder-smallholder farmer who wants to secure granted right of occupancy in the settlement as the case shows. However, there are variations in survey plans as compared to layout plans. The department of urban planning and environment who deals with surveying should be blamed for such an un-procedural and un-systematic surveying cost which leads to ad-hoc land development in the study settlements and the city as in total.

Monitoring and evaluation

This stage is very important in spatial land use planning and helps us understanding why it is necessary to plan cities. If the state is able to monitor and evaluate the effectiveness of land use planning on a regular basis it is possible to understand the rationale of land use planning for coordination and control of settlement development and therefore achieve the objective of urban land governance. Key areas to be addressed in monitoring and evaluation of land use planning include setting specific standards or expectations for making meaningful monitoring and evaluation possible. The Town and Country Planning Act of 1956, Land use Planning Act of 2006 and Urban Planning Act of 2006, identify issues that must be addressed in detailed land use planning schemes[42], general land use planning scheme[43] and intervals for review[44]. It does not set specific

[42] *As per Urban planning Act of 2006 sect. 16 (3) states shall consist of a survey in respect of the area to which the scheme relates and carried out and maps and descriptions as may be necessary to indicate the manner in which the land in the area may be used.*

[43] *As per Urban planning Act of 2006 sect. 9 (2) include a technical report on the conditions and resources and facilities in the area, a statement of policies and proposals with regard to the allocation of resources and the locations for development within the area. Others include description and analysis of the conditions of development in the area, relevant studies, data and reports concerning physical development of the area, and maps and plans showing present and future land uses and development in the area.*

standards or expectations for monitoring and evaluations based on the sensitivity of the resource decisions and flexibility of the local realities presented for making meaningful evaluation. For many decades it has been difficult in the city and the country as a whole and limits understanding extent and limits of land use planning implementation success in the city.

As planners, we need to ask ourselves, what are we trying to promote, or to prevent? The three cases show that we need to be explicit about our values driving the land use planning process. The link between quality of life, economic development and land use planning as a way to sustain the economy and the environment become meaningful when landholders including smallholder farmers participate constructively in the spatial land use planning process. Equally, recognising that land use planning is an ongoing process, not a product to be produced and placed on a shelf. It is important to link the present to the future using visualization and alternative futures techniques. Build monitoring and evaluation strategies into plan implementation may help integrating urban agriculture livelihoods in city land development processes and capital mobilisation. Thus, monitoring and evaluation becomes necessary in urban land use planning processes.

Monitoring

Land use plan monitoring is the process that entails tracking the implementation of land use planning decisions (implementation monitoring) and collecting data/information necessary to evaluate the effectiveness of land use planning decisions (effectiveness monitoring). It is therefore a process of following up on land use planning management actions and documenting progress toward full implementation of the land use plan and the achievement of desired outcomes.

Implementation monitoring is the process of tracking and documenting the implementation (or the progress toward implementation) of land use plan decisions. This needs to be done at least annually and should be documented in the form of a tracking record or report. The report must be available for public review[45]. The report can also describe management actions proposed or undertaken to implement land use plan decisions and can form the basis for annual budget documents. In subsequent years, reports need to document management actions that were completed and what further actions are needed to continue implementing land use plan decisions. In the three case studies process have not been initiated nor completed. For example, the land use plan for Ubungo was prepared and approved in the year 2003. No assessment has been made by the local authority to show the achievements of this plan or how it can be reviewed after five years according to the Land Use Planning Act of 2006 to show sustainable impacts. Likewise, it has been hard for the land use planners and the government to replicate the practice elsewhere. This enhances the missing links between theory and practise as previously explained in considering urban agriculture.

Effectiveness of monitoring in this context refers to the process of collecting data and information in order to determine whether or not desired outcomes are being met as management actions are being implemented. A monitoring strategy must be developed as part of the land use plan. This will involve identifying indicators of change, acceptable thresholds, methodologies, protocols, and timeframes that will be used to evaluate and determine whether or not desired land use planning outcomes are being achieved. The three cases studied have not achieved this and therefore the planning institutions responsible for land use planning are important in influencing this.

---

[44] *The planning authority shall review every detailed planning scheme, within five years or at an extended time as the Director may determine.*

[45] *One way to accomplish this is an annual planning update, which can be sent to those who participated in the planning process or have expressed an interest in receiving the report.*

Evaluation

Evaluation in this context refers to a process of reviewing the land use plan and the periodic plan monitoring reports to determine whether the land use plan decisions are still valid and whether the plan is being implemented successfully or needs change. Land use plans are evaluated to determine five main aspects as the three cases show. These include determining if decisions remain relevant to current issues and are effective in achieving desired outcomes. Likewise, determining if any decisions need to be revised, need to be dropped from further consideration, or any areas requiring new decisions. The conflicts that arose in land allocation and surveying during plan implementation in Goba settlement show the need for the government to adapt to realities and to be flexible with the existing law and possibly update it. In making these determinations, the evaluation may consider whether mitigation measures are satisfactory, whether there are changes in the related plans of other entities, and whether there is new significance to the plan.

6.3 Factors influencing land use planning and role of actors

The success and failure of land use planning in the study settlements is influenced by different factors: These include:

High proportion of landholder settlers and support from other stakeholders: This revealed important factors as the ratio of occupations among landholders and tenants explained the case of Ubungo Darajani. Existence of higher landholders ration than tenants made it possible to donate land for infrastructure service provision as well as contributions ideas in general meetings where decisions were made. Similarly, it helped facilitate the local authority and consultant in giving proper information for effective land use planning processes.

Tenants disseminated information dissemination to those landholders living outside the settlement, and also provided labor for infrastructure provision such as digging water trenches. Donor community provided funds for project execution. UCLAS as a consulting institution facilitated in the preparation and implementation of land use plans. Tribal and religious groups helped in resolving conflicts in areas where conflicts were predominating. The media helped in disseminating the information in writing ad therefore create awareness among residents particularly during conflict occurrence in Goba and Ubungo Darajani.

Role of the community land development committee: In both cases Community Land Development Committees (CLDC) persist. These play a great role in mobilising and sensitising residents, funds, initiating meetings and giving feedback to landholders. Likewise it helps resolving boundary land use conflicts in both cases during the preparation and subsequent plan implementation. These roles observed were important for success of Ubungo Darajani while in other cases for information giving and collaborating with government officials i.e networking.

Political support: In both cases politicians and local government officials were involved. The Ward Councillors and Members of Parliament were invited to chair meetings in Ubungo Darajani. The other two Ward Councillors used the case to facilitate approval of their land use plans. Using these government decision bodies, trust was built among landholders in Ubungo Darajani to engage in land use planning process. However, it was noted that urban agriculture was not a key agenda in their meeting and therefore had no attention in both cases documented.

Deployment of grassroots leaders- (ten cell) and social groups: In case of Ubungo Darajani, the community organization operating in the settlement used ten cell leaders to assist in information

dissemination and resource mobilisation. Ten cell leaders were for instance active in information dissemination, sensitisation and mobilization of the tenants and landholders living within their cells. This enhanced the role and position of the CBO in land development. Other factors of prime importance include educational background of local leaders and commitments to solve commonly felt problems. Similarly, information flow, communication and availability of technical knowledge and acceptance of the community responsibility in both cases were catalysts for the case success.

Existence of community organisations with committed leadership: With this respect presence of self-motivated leaders in Ubungo Darajani was important in community mobilisation, making follow-ups and other roles earlier discussed. This enhanced local communities success in preparation, consensus building and implementing of the agreed planning standards (See 6.5.5).

Existence of (locally enforced) norms: In the case of Ubungo Darajani community, immediately after land use preparation, UCLAS left a copy of the land use plan, which was used to guide development. However, local leaders in collaboration with community organisation leaders were able to put in place unwritten norms to prohibit further subdivision and public space areas encroachment as agreed. In the other two cases land use plans were not left to guide and control ongoing land development activities. The action of leaving land use planning output to local communities caused more questions in interventions. For example, what could happen if the community prepared plan was not endorsed and approved by the responsible planning authorities? On the other hand one could wonder also why in Ubungo Darajani a land use plan and used to guide ongoing development while in the other case it was not? This question poses the need for effective urban land management through stakeholders' involvement at different levels.

Contribution by high-income settlers: In the Ubungo Darajani case, local landholders mobilize funds for the land regularization process implementation. In the other two cases, the government financed the land use-planning project through its budget. Each landholder was required to contribute 19.5 USD (equivalent to Tshs. 20,000/=) by the year 2004. The low-income earners were subsidised by those who '*have*' to recover their cost. This shows the important of tapping local social capital for managing urban land development through involving in spatial land use planning practise.

Existence of a committed community spokesman (championship): In case of Ubungo Darajani, the community spokesman made several follow-ups and provided feedback. He also collected contributions (funds) from the landholders and deposited the same in the project account. However, the spokesman was the leading actor in follow-ups both within and outside the settlement. His role was critical in the achievements recorded.

Low Compensation rates: The rates used to compensate the landholder is less than TSh.30, 000/= per coconut tree while the landholders in the Goba neighbourhood want compensation at the rate of TShs. 70,000/= per single coconut tree. Inadequate funds for compensating the affected landholders for land zoned for public purposes, road reserves, open spaces, cemeteries and other community uses caused this. Throughout the whole process of preparing the layout plans, there has been a lack of coordination between Kinondoni Municipal council and the Ministry responsible for lands, which resulted to non-participation of the landholder in the whole process right from the start. The problems of funds to compensate the landholders should have been sorted before the project began.

6.4 Allied challenges for land use planning and urban agriculture integration

Land use planning processes discussed faced different challenges, which shows the possibilities and limitations for integrating urban agriculture in land use planning practise:

6.4.1 Land tenure

Within the settlements, land tenure systems consist of a wide range of statutory, customary and non-formal categories. The statutory category refers to when title deeds are granted to the landholder through a formal procedure. The customary category refers to the ownership that belongs to customary land ownership (i.e. inheritance) while the non-formal categories include getting land through informal land transaction as through buying and encroachment of public lands. Figure 6.5 shows the tenure ownership status.

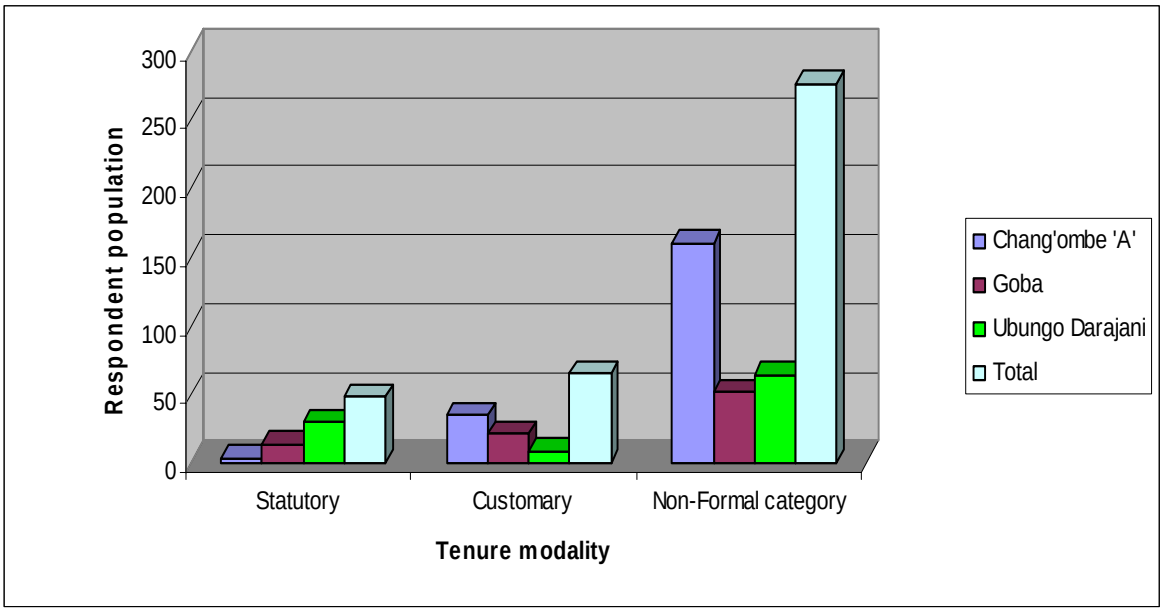


Figure 6.5 Tenure modalities in the case study settlements.

Figure 6.5 shows that Ubungo Darajani has more people owning land through the statutory mode. This appeared after people getting their offer after involving in land regularization. The process of non-formal category is dominant in both settlements as people sell their land without formal acknowledgement from local authorities. This kind of informal land transaction is common in the case study and in the city.

The tenure systems occur for a number of reasons and processes during the periurban transformation in the band of city influence. In both cases, the original settlements were developed under traditional or customary tenure systems on land, which was at the time outside urban administrative boundaries. The land was later absorbed within them as the urban areas expanded. At such times, various statutory tenure categories, such as formal granted rights of occupancy had been introduced, to which later housing development had to conform as was the case of Goba and Chang'ombe 'A'. Early developments also appeared have changed their tenure status as regularisation programmes introduced at Ubungo Darajani. This enabled previously unauthorised settlements to become legal as the study settlements show. Such variations occur on the same residential plot. In both the study settlements, for example, it has been noted to be common for registered landholders to allocate plots to their children and sometimes sell to others, who then sublet rooms without official permission. Security of tenure in this context appeared to be a critical factor in households' decisions regarding effective land use planning and subsequently integrating urban agriculture. Where people feel secure, they are likely to invest what they can afford in improving and extending their homes and environments as well as smallholder farmers' lots in their compounds.

It should be noted that once the urban land is declared, the inheritance system of land ownership is forfeited and therefore becomes informal unless they formalise through established norms of land registration. This shows informal land access is dominant in the study settlements, which was also noted to create fear of eviction of smallholder farmers from their land.

6.4.2 Access to land use planning information

78% of the respondents interviewed in the three cases were not aware of official requirements of land use planning processes or of the procedure for getting land for urban agriculture. This is because they have little contact with government agencies in any positive way that can facilitate their spatial land use planning initiatives. For others, a major constraint on their ability to conform to official requirements is the simple problem of understanding what is required from them. For example, planning regulations, standards and administrative procedures are published in English while the majority of landholders and tenants in Tanzania hardly speak the language. Landholders including smallholder farmers who can read and speak English are few. In fact many cannot even read their local mother tongue. For the majority, translation of the legal documents to a Swahili version is preferred. This may help increasing awareness of the legal setting and land use planning process including how to register land to be granted right of occupancy and minimisation of informal land subdivisions and transactions (Figure 7.3).

6.4.3 Land use planning without implementation focus

Many plans prepared in settlement neighbourhoods appeared are not implemented. Their implementation is fragmented due to formal planning standards, inadequate community involvement and bureaucratic administrative procedures as the study settlements indicate. This has raised the costs of conformity to levels that the majority of the landholders cannot afford as well, shifting to periurban areas for some smallholder farmers observed to be common practise. Land use planning has failed to respond to the needs of expanding urban areas and creates difficulties in expanding periurban agriculture livelihood in Dar Es Salaam city.

6.4.4 Presence of mixed land uses

Mixed land use development in the settlement has been desirable in different ways. It reduces the potential for local informal investments, which can strengthen the whole urban economy and maximise existing linkages between the informal and formal sectors of the city economy. The study demonstrated that the concentration of mixed land uses can stimulate dramatic increases in both formal and informal economic activity[46]. Urban agriculture was observed to stimulate other livelihood strategies including providing fresh products in bars, hotels and restaurants. In some cases, even indigenous technology of food preservation is being used in small stalls within low-income areas. The government action in this direction is relatively ineffective in creating conditions that can facilitate consolidation of these benefits accruing from urban agriculture in the city.

6.4.5 Adaptation of planning standards and building regulation

Formal land use planning standards and regulations (Table 6.3), for example those being used in new formal settlement development, would generally not be appropriate for upgrading many informal settlements. These will impose severe payment burdens on residents, and the building of a particular type of housing is difficult to afford by smallholder farmers. Smallholder farmers that

[46] *This was confirmed when different smallholder farmers (72% of the total respondents) observed using their capital derived from other economic activities for farming in their farm lots including buying seeds, paying labour and enhancing fresh food for their family which shows the linkages in both cases.*

depend on small plot farming find difficulties in remaining in a settlement upgraded according to conventional regulations. Besides, smallholder farmers fear the urban life situation, that they cannot keep up with payments and do not have the means to begin building an approved permanent house because of their unsustainable income levels. This affects their living standards in the urban areas and shifting to periurban land is common. The main planning standards plans adopted during land use planning processes are summarised (Table 6.3):

Table 6.3 Summary of planning standards

S/No.	Infrastructure facility	National planning standards	Community agreed standards approved by the MLHSD		
			Ubungo Darajani	Goba	Chang'ombe 'A'
1	**Standard for residential premises**				
	High density plots	400-800 sq.m	12-800 Sq.m	400-800 sq.m	20-800 sq.m
	Medium density plots	801-1600 Sq.m	900-1600 Sq.m	801-1600 Sq.m	801-1600 Sq.m
	Low density plots	1600-4000 Sq.m	1601-4000 sq .m	1600-4000 Sq.m	1600-4000 Sq.m
2	**Road right of way**				
	Access path (Footpath)	3-6m	2-3 m	3-6m	3-6m
	Access road (Residential area)	10-20 m	8-10 m	10-20 m	10-20 m
	Local Distributor (Residential area)	10-20 m	12 m	10-20 m	10-20 m
	District road	20-30 m	20-30 m (exist)	20-30 m	20-30 m
	Primary road	20-30 m	20-30 m (exist)	20-30 m	20-30 m
	Trunk road	60-70 m	60-70 m (exist)	60-70 m	60-70 m

Table 6.4 shows that the minimum plot standard area for Ubungo Darajani and Chang'ombe 'A' is 12 and 20 metres square respectively. This plot makes it difficult to consolidate urban agriculture due to minimal plot coverage ration, which goes with the Building standards (Table 6.4):

Table 6.4 Minimum plot coverage

Size	Plot size	National standards used	Community agreed standards	Plot coverage in Ubungo Darajani		Plot coverage Goba and Chang'ombe 'A'	
				Ranges	No. of plots	Ranges	No. of plots
High density plots	400-800 sq.m	40%	12-800 Sq.m	50-120%	234	50-120%	458
Medium density plots	801-1600 Sq.m	25%	900-1600 Sq.m	30-38%	35	30-38%	114
Low density plots	1600-4000 Sq.m	15%	1601-4000 sq .m	10-15%	-	10-15%	67

Tables 6.3 and 6.4 indicate that in promoting urban agriculture in an urban setting, availability of space and density distribution need to be considered (Figure 6.6). For example, Table 6 shows the minimal plot for Goba, a periurban settlement, is 400 square metres yet the plots goes beyond 4000 metres square. Similarly, the availability of unoccupied land within the periurban settlement becomes one of the criteria for the need to consolidate the sector in such urban areas in the city.

The study settlement shows the potential of periurban land consolidation to accommodate urban agriculture in the city setting in a situation where mixed urban uses and density distribution is high.

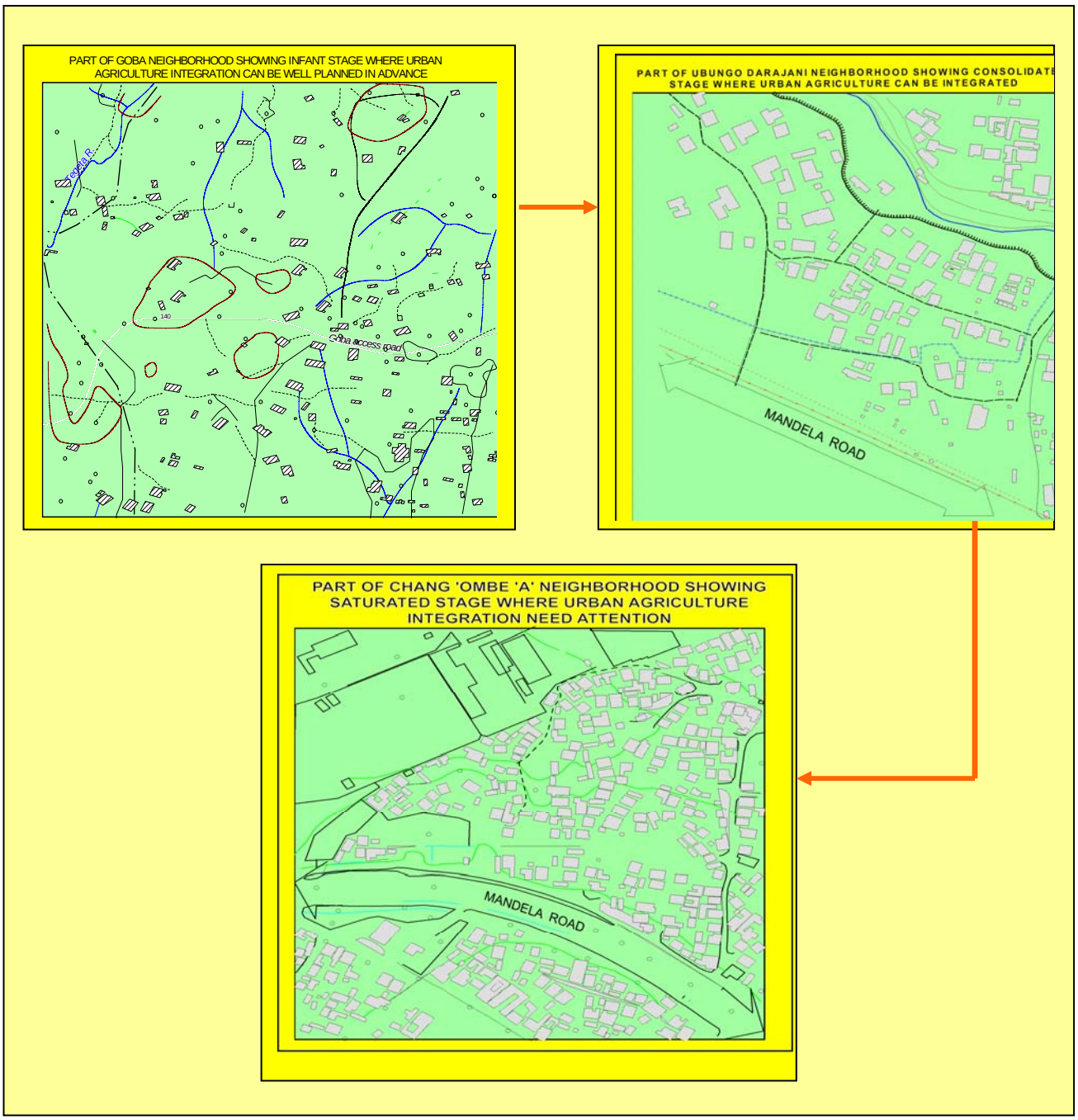


Figure 6.6 Settlement growth processes and possibility of integrating urban agriculture based livelihood; Map-2006

6.4.6 Financial aspects

The annual budgets of the urban local authorities are approved by central government. These funds are inadequate to implement the land use development programmes in the country and in our local authorities. Interviews with Municipal planners in the three Municipalities of Dar Es Salaam show that land use planning and the whole concept of settlement development has not been given priority in the government budgeting processes. This has deteriorated the implementation of the plans in the city and the case study areas. For example, increased cost of infrastructure provision and maintenance require heavy investment from responsible Ministries, which is hardly obtained at once. Sources of revenue to the Municipalities are heavily dependent on the property tax system

leaving other land such as that of agriculture uncollected. In addition, it was noted that financial strategies that entail community financial mobilisation policy are lacking, which can facilitate financial outsourcing from local actors, avoid swindling of money and build trust among actors for plan implementation. This in a holistic way increases marginalisation and exclusion of smallholder farmers in spatial planning processes.

6.4.7 Land use conflicts

In both cases, the major conflict observed results from boundary conflicts and under-representation in decision-making processes. For example, in the case of Goba settlement the conflicts were raised when the Municipal surveyors intentioned to survey plot boundaries of farmers who were demarcating their land without their prior notice. The Municipal surveyors and Ministry responsible for Lands attempted to conduct the cadastral survey. This appeared to rose interest by landholders in understanding what is happening to their land. The Surveyors managed to show landholders the demarcation of their plots according to the land use plans prepared. Some landholders noticed that their land had been subdivided into more than one plot and therefore some of them started selling their plots to the interested developers and others resisted the implementation. This shows that informal land transaction is ongoing in periurban settlements, and needs to be checked and monitored once the land use plans are prepared to avoid land use conflicts and environmental degradation.

6.4.8 Low priority of urban agriculture in municipal, city and national programmes

Under-representation in decision-making processes in the country is common feature in the study settlements. The Local government reforms Act of 1997 requires frequent meetings to decide on the ward development programmes and initiatives to be supported by local authorities for a particular financial year. Four meetings need to be held quarterly to discuss subward issues. The meetings hardly achieved in both settlements, which degrades settlement development and therefore good urban land governance. This enhances exclusion of landholders' interests in high level decisions levels discussions and therefore is considered an issue at the grassroots level (Table 6.5).

Table 6.5 Trends and frequency of meetings for effective land governance

Year	Case study Settlements		
	Mabibo	**Goba**	**Changombe**
2000	2	1	2
2001	1	0	2
2002	3	2	2
2003	2	1	3
2004	1	1	2
2005	1	3	2
2006	1	2	3

6.5 Impacts of land use planning processes on urban agriculture

The impact of land use planning process can be observed in different ways as documented. The formal decision-making processes, bureaucratic and under representation of the community needs in decision-making forums excludes inclusion of smallholder farmers' interest in National and Municipal development programmes. Similarly, adopting official standards on plot size in the settlement is often based on arbitrary assumptions regarding individual family needs, rather than the costs or impact on density levels and '*Urban land market*' involved. This has shown to transform the land use to orient to more profitable land uses including construction of houses for

renting. Likewise, the long time use of master plans without changing to local circumstances has affected the urban agriculture implementation as the case shows.

Formal land use planning process needs statutory land tenure negotiation among landholders and the government. This has influenced existence of customary land tenure, which mostly was used for agriculture development. And this goes with city expansion from the urbanisation process, which needs earlier planning before such impacts to agriculture land occurs. Likewise, mobilising cost for surveying once the land use plan is approved was high compare with the land use plan preparation as observed in the study settlements. For smallholder farmers, it was observed difficult to raise such cost until when *'have people'* contributed more to cover the gap. This also keeps one thinking if tenure security can help the smallholder farmer who fails to raise money to survey their plot.

6.6 The missing link for land use planning practise to integrate with urban agriculture

Land use planning processes

Urban land use planning processes discussed are influenced by many factors. Power for engagement and implementation is centralised to local and central government as the land policies and legislation support show. This has created difficulties over many years for landholders who want to unite and formalize their land and therefore be able to integrate urban agriculture into land use planning. Likewise, inadequate policy awareness, enforcement, monitoring and evaluation were observed as constraints. These constraints in the case study and in the city enhance marginalisation of urban agriculture in Dar Es Salaam as the cases show (Chapter seven).

Absence of development conditions that can facilitate urban agriculture in different zones i.e. high, medium, low and mixed plot density stated in legal documents are hardly adhered in the study settlements. This shows increasing difficulties to implement the land use and subsequent urban agriculture inclusion in city land governance system. Setting agriculture land development conditions may help to coordinate and enforce laws once urban agriculture is mainstreamed in land use planning practise.

Exclusion of smallholder farmer's in policy making

An inadequate linkage between smallholder farmers in the whole process of policy making (Figure 5.2) is continuing to marginalise smallholder farmers' interest to be integrated in Municipal land development programmes. This is caused by poor representation in Ward and Municipal land development committees and political vested interest as discussed in this context. In addition, weak departmental and Ministry level functional roles for coordinating and controlling urban agriculture land use in the city was common (Figure 7.4). This may lead to future rioting, when smallholder farmers and other stakeholders recognize their right in policy and legal documents. This causes an urgent need for effective and sustainable development in the sector.

Absence of urban agriculture land development committee

Several committees were observed to be operating in the case study settlements in the city (Chapter five). However, a committee dealing with urban agriculture is lacking. The establishment of this committee can help organise the smallholder farmers to have one voice, outsource funds for their activity as well as to pay tax to contribute to local authorities revenue. The establishment of a such committee was not accepted when local authorities were asked. The reason provided was that, it would add more running and administrative cost in the Municipality therefore it is not important. The situation is also accompanied with inadequate human resources in coordinating and controlling

urban agriculture including inadequate extension services. In Kinondoni, Temeke and Ilala municipalities have 2, 2 and 4 agriculture extension officers respectively to serve the whole city. One can be astonished how these officials within the city, which habits more than 3 million people can be served by 8 personnel. In addition, there is a changing of the name from agricultural and livestock development to be Cooperative and credit schemes and most of the extension officers in the city are shifting to rural areas. This shows a continued marginalizing of urban agriculture in the city. Equally, these are constraints observed towards promoting agriculture land development in a proper way and manageable size in the city.

Urban planning approaches

The land use planning initiation in the three cases show a presence of both top down and bottom up planning approaches. The case of Ubungo Darajani, which seems to be a community-initiated project, took two years for initiation. This was caused by many consultations and a need for awareness creation among the landholders before the onset of the project. This is good to achieve participation, financial mobilization, actor commitment and transparency in the land use planning process. However, it shows the negotiation power and interactions among actors, which signify the role of social capital in land use planning processes, which in other two cases were missing. In holistic thinking, the priority setting of both local communities and the government excluded urban farming. In Local communities in Ubungo Darajani it was appeared that urban agriculture is not a priority. In the other two settlements they were hardly involved in discussing and implementing the spatial land use plans. This shows a gap in theory and practise where the use of master planning tools excludes the landholder in planning. This calls for improving community involvement in land use planning for improved urban land governance.

Bureaucratic and priority setting procedure in land use planning practise

The top down approach initiation was central government centered. All the preliminary planning work including initiation, the local authority in collaboration with the central government made the decisions. It took almost six months from initiation to preparation in Goba and Chang'ombe 'A', which differs from Ubungo Darajani case. The interviews with the District Town planner in each of the three Municipalities showed that it was easy as the budget was already established and implementation was the focus. Equally, inadequate access to information, communication and top down planning initiation and decision making attributed to deficiencies in the government circulars of dissemination of approved spatial land use plans at local levels as discussed. Thus, exclusion of urban agriculture from the beginning of the plan making is one of the missing links for integration. This makes it difficult for urban agriculture to receive more attention in urban planning and management system.

In the three cases, it is obvious that urban agriculture was not given attention by landholders and therefore in subsequent processes was excluded in land use plan preparation (See 6.2.3). 78% of the total respondents in the study settlements said that this was due to their awareness that urban agriculture is not a legal land use activity in the city. With this perception, it was difficult for them to consider and institutionalise it in their mind during spatial land use plan initiation and subsequent processes. They showed that the sector is increasingly employing many of their residents, providing fresh food and income but it looks to be leisure and not an economic activity to pay much attention. They would like to include it in their plans once upgrading schemes are initiated for proper organization and actor identification. One respondent in Goba settlement remarked:

> *"…I think you walked all around the city and in our settlement here. What you notice is presence of gardening, crop farms, poultry and animal husbandry. This looks to be important for all resident in the city and therefore the government may design ways to organise the sector, which currently is haphazardly*

practised, and make some restrictions in some areas". He adds that "we don't know even who is responsible for coordinating and controlling the farming practise in our area, when consulting the available Municipal extension officer, the reply is we don't allow such activity in the city now days".

The statement implies that urban agriculture needs to be organised in the sense that responsible people can be identified. This helps the government to offer services including extension, training and enabling access to financial credits for improving social well-being. Likewise, the need to identify the overall coordinator of agriculture is important. This goes hand in hand with the city structure where there are Ministries, Local governments and residents. The government may opt to put in place an institution to coordinate urban agriculture for improved urban land governance.

Absence of land use planning review

Land use plans as outcomes of land use planning processes should be periodically evaluated (at a minimum of every 5 years) as per the Urban Planning Act of 2006. It requires also that the plan evaluations to be completed prior to any plan revisions and for major plan amendments. Special or unscheduled evaluations may also be required to review unexpected management actions or significant changes in the related plans. Paradoxically, identifying resource needs and means for correcting deficiencies and addressing issues through plan maintenance, amendments, or preparing new ones is observed to be deal. This gap should be filled because it is important in land use planning and therefore can enable integration of urban agriculture in spatial land use planning. This helps to identify new resources, new innovations in planning practices that improve effectiveness and efficiency that other cases in the same situation, like Dar Es Salaam, may adopt. These processes appeared to be inadequately adhered in country land use planning and management and therefore urban agriculture contribution continues to be marginalised.

Language gaps

Tanzania land development policy and legal documents are written in English. This appeared creating difficulties for landholders including smallholder farmers who mostly have primary school education and few have secondary or university educations to read and follow the information provided in legal document as discussed in this context. The language element in the mentioned documents needs to be looked at as it enhances marginalisation of agriculture awareness of smallholder farmers and therefore limits its promotion.

Low government priorities to mainstream urban farming in national programmes

The interview with Ministry officials (Chapter four) shows that urban agriculture receives low acceptance in the urban land use and in the development programme settings for poverty reduction. Its value and potential are in greening the city i.e. environmental concerns and less for food poverty reduction. The food poverty looks to be more a social and not an economic orientation for urban agriculture consideration in the city setting as the official administrators interviews show. This fact causes its exclusion in the National Strategy for Growth and Poverty Reduction (NSGPR). The government feels the future urban land development will ignore urban agriculture and concentrate in construction industry. This enhances its exclusion in budgeting and in outsourcing financing resources for its development. One official respondent summary remarked:

> *"…no need for urban agriculture in the city since its management would increase cost of administration on the side of the city council".*

> *"…experience shows that Dar Es Salaam can solely depend on food from the mainland; it provides an important market for food".*

"…if not well managed, urban agriculture would lead to environmental degradation".

These facts provided by officials are important and are the voices of local and central government. In a holistic view, all the problems facing urban agriculture can be solved once the central and local government and other development partners work together and form a synergy of one voice in term of fostering land use planning and inclusion of the sector in policy and political platform. Otherwise, the sector will continue to be marginalised and in future increased difficulties in terms of health, environmental degradation and loss of urban poor livelihoods expected (Plate 5.4).

6.7 Reflections

This chapter dwells on documenting various land use planning attempts done in local communities by local and central government. The chapter advocated that the land use planning processes be adopted; the role of actors, and potential factors for success and limitation encountered. Also, impacts, missing links and opportunities for integration were contributed. The discussion shows that urban agriculture integration is a matter of priority of developers as the three cases involved in land use planning, urban agriculture was not included in land use plans. This influenced by the conventional approached of top down decision making in land use planning processes. Other findings include that inadequate involvement of landholders and tenants in land use planning processes leads to land use conflicts. There is potential for local community assets mobilisation to enhance implementation of the land use plans, build trust among the actors and therefore ensure project sustainability. Apart from that, inaccessibility of information and communication channels to the urban poor concerning land development policies and legal requirements in settlement development hinders initiation and subsequently implementation of the land use planning outputs. Other potential features observed include that a flexible payment schedule in land use planning processes helps to involve the poor in land use planning processes and output implementation. However, prohibitive cost involved in land use plan preparation, a cadastral survey and land registration enhances the potential for landholders to opting for customary land ownership rather than formal granted right of occupancy. The next chapter analyses urban agriculture implementation and its impacts in case study areas.

CHAPTER SEVEN: URBAN AGRICULTURE LIVELIHOOD AND ITS IMPACTS IN THE STUDY SETTLEMENTS

7.1 Introduction

The previous chapter discussed the spatial land use planning processes and structures in the study settlements and allied challenges. This chapter analyses the urban agriculture practise in the three study settlements of Goba, Chang'ombe 'A' and Ubungo Darajani. It discusses, influencing factors and implications in urban and periurban settlements. Amaranth production as one form of vegetable production in the urban agriculture sphere is analysed with special emphasis on understanding the questions of food security, urban poverty, environmental conservation and urbanization consequences in urban development processes. The chapter finishes by providing some reflections on the contributions in this chapter to the study premises.

7.2 Forms of urban agriculture in Goba, Chang'ombe 'A' and Ubungo Darajani

Different forms of urban agriculture exist in urban and periurban settlements in the city of Dar Es Salaam (Chapter five). These forms provide income, nutrition and often a safety-net function to the poorest sectors of society. As such, urban agriculture is an important vehicle for poverty reduction in Dar Es Salaam and other cities in Sub-Saharan Africa as discussed:

7.2.1 Crop farming

In Ubungo Darajani, Chang'ombe 'A' and Goba smallholder producers grow a wide range of crops (Figure 7.1). According to figure 7.1, amaranth production is prevalent. It is followed by tomatoes, beans, sweet potatoes and others as indicated. Goba settlement shows smallholder farmers are involved in all types of crop farming including pineapple, maize, beans, tomatoes and watermelon as the case shows.

According to figure 7.1, amaranth farming dominates in the urban zones when compared with Goba, which belongs to the periurban settlement within the city. Amaranth vegetable crop is perishable and requires good packaging and close proximity to the market place. The hot climate in the city appeared affecting amaranths and other vegetable products. Poor handling and exposure to sunlight during selling is common (Plate 7.9). In the cases of Ubungo Darajani and Chang'ombe 'A' maize is not highly cultivated compared with other crops due to limited land.

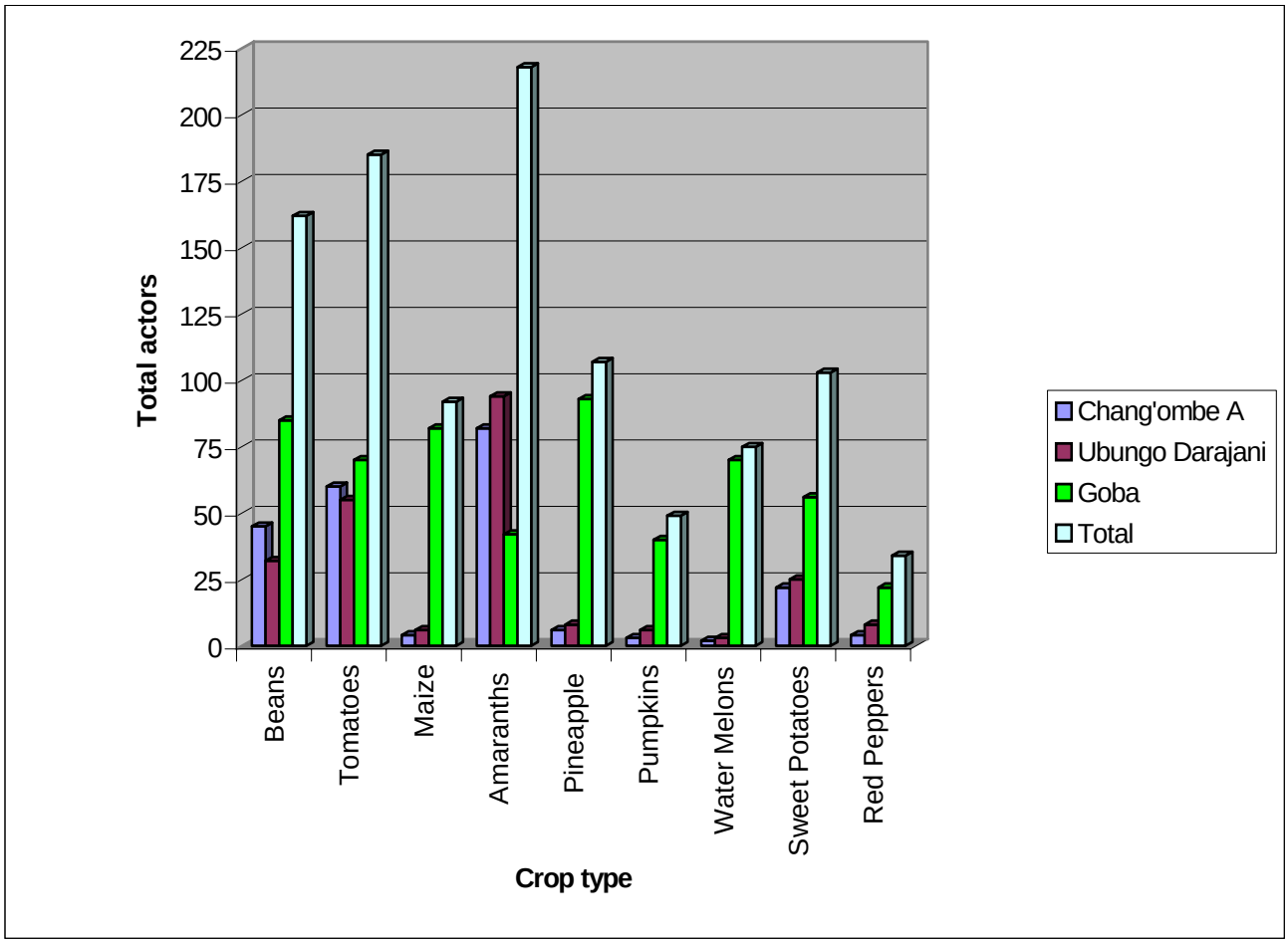


Figure 7.1 Crops grown in the case study areas.

Smallholder farmers are aware that they should not plant crops exceeding one metre length in urban residential plots[47]. A part from that, crops such as pineapple, pumpkin and water melon require available land and plenty of water, and such infrastructure utilities are inadequately available in urban centers. The presence of deep and shallow wells is supplementing tap water in Goba and therefore favours farming. This form of cropping plays a key role for commercial and home consumption purposes as the study settlements show.

65% of the farmers in both settlements reported using their farm product for subsistence while the rest used it for income earning and for giving to their relatives and friends. The selling takes place in the producer's home, and city markets including Kariakoo, Tandale, Temeke sterio, Makumbusho and others (Table 8.3). The distance to market areas limits access of smallholder farmers to selling their perishable vegetable products to the retailers. These retailers buy from smallholder farming premises and sell both in the streets and in the big markets within the city. The long distance traveled by these retailers fetching vegetables from the farming premises to the market in the city is one of the voices of smallholder farmers. This reduces their profits, as they have to balance the cost of buying and selling. There is a need for improving the transport facilities in periurban areas to ensure the accessibility to

[47] *This is according to urban farming regulation of 1992 where one smallholder farmers in Ubungo Darajani settlement during the field survey on February, 2007 confirmed.*

consumers including to market places. Likewise, opening new markets in periurban settlements may help in reducing traveling distance and also in reducing congestion in the city during daytime when vehicle traffic jams to the city center are common.

7.2.2 Animal husbandry

Within Goba, Chang'ombe 'A' and Ubungo Darajani domestic, meat and dairy types of animal farming are a common practice. These take place on landholders' plots, whether built up or not. This implies existence of indoor and outdoor farming systems. Animal husbandry serves as food security for a majority of smallholder farmers and other urbanites. For example, milk and meat help provide protein to smallholder farmers, their families and to other urbanites. Likewise, milk and the by-products produced by smallholder farmers in periurban and rural areas of the city are mainly consumed in urban areas (Sumberg, 1999). This signifies the urban rural symbiotic relations existing for sharing food resource produced within the city and its hinterlands. The numbers of animals were also recorded (Figure 7.2).

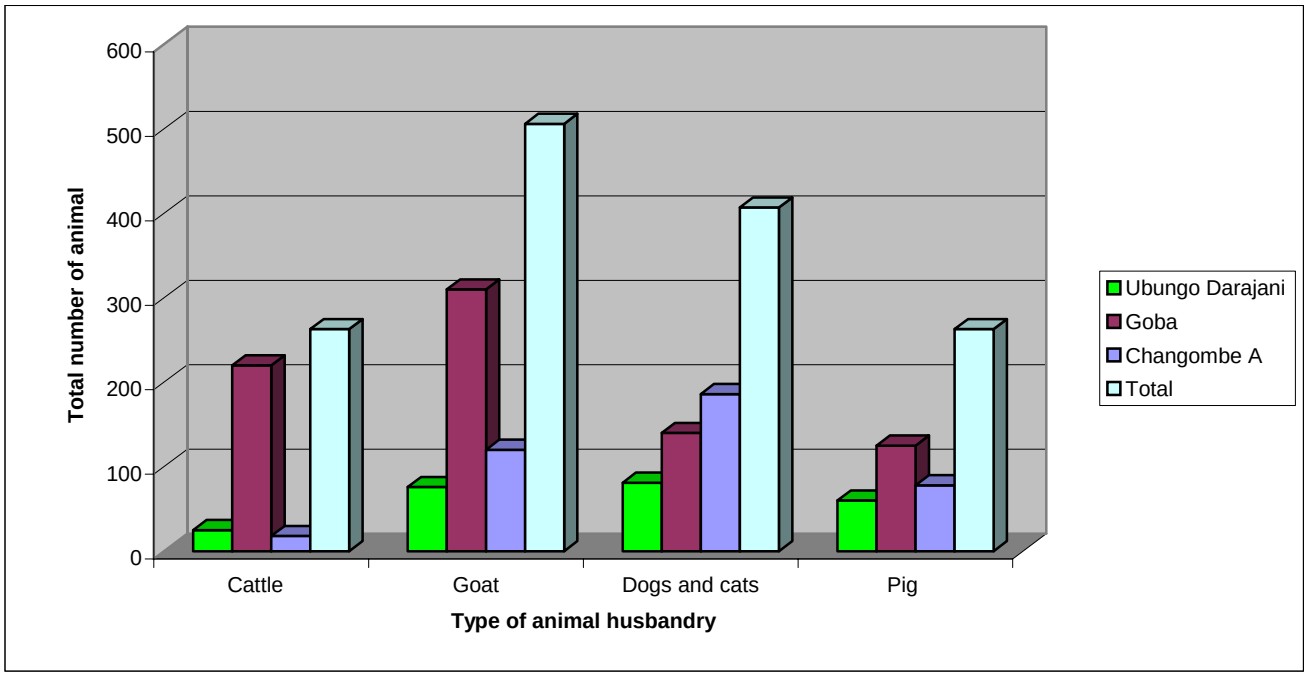


Figure 7.2 Extent of animal farming in the study settlements.

Animal by-products including dung add soil nutrients during gardening and in other types of crop farming. The smallholder farmers keeping animals provide this organic fertilizer to others involved in gardening free of charge. 84% of smallholder farmer respondents interviewed preferred organic fertilizer compared to the inorganic manure. The reasons noted include less cost compared with inorganic. The inorganic fertilizers cost 25 USD per one sack of 50 Kg. This cost is difficult for smallholder farmers living under 1 USD per day to afford and therefore organic fertilizer is used in the cases explored. Besides, labour and time spent for collecting the organic fertilizer is among the cost, which to smallholder farmer disregards them.

Plate 7.1 Zero grazing type of livestock farming at Ubungo Darajani: Photo, March 2007.

Pig husbandry is also highly practised in Goba compared with the other two settlements (Figure 7.2). The pigs were kept indoors. This type of farming provides fresh pork, which is used in hotels and other entertainment premises. The market areas for pigs are the urban residents who are involved in bar and cafeteria areas and other business areas mentioned. Pig husbandry requires care, as pigs are not environmental friendly in terms of hygiene and noise. They are costly in terms of food requirement and therefore require high capital investment. For example, cost of labour for collecting food remains is rational. Air and noise pollution resulting from this type of farming appeared disturbing the majority of residents living in these premises and the adjacent (Plate 7.2). This calls for a need to designate suitable sites to accommodate pig husbandry rather than in urban residential premises. Apart from that, there is potential for periurban agriculture for reducing land use conflict and ensuring land compatibility through land use allocations in suitable sites.

Goat rearing is common in the case study settlements. Both indoor and outdoor systems are observed. The outdoor system uses the free range system, which creates noise and air pollution to people living in the near surroundings. The goats destroy some human properties and are therefore a challenge to people living in the study settlements. This kind of free range system requires being restricted to balance both the environmental quality as well as social aspects of the local community. Similarly, the local authorities have already put restrictions on such kinds of farming particularly in mixed residential areas and in high density areas including Ubungo Darajani and Chang'ombe 'A'.

Plate 7.2 Pig husbandry at Ubungo Darajani: Photo, February 2007.

In all study settlements, medium and high income people involve in animal husbandry. 56% of respondents were motivated to engage due to the high protein obtained from animal products. 44% of respondents show that expenses associated with this type of farming require intensive capital compared with gardening activities. The expenses reported involve animal treatment, feeding and care (i.e. labour requirement). These once again are so high that the poor cannot always afford them. It was approximated that more than 200 USD is required per month in meeting these expenses for servicing four to eight pigs, goat or cattle, which is an expensive cost for smallholder farmers to afford.

7.2.3 Poultry farming

Chicken farming is common in the study settlements (Plate 7.3). In plot farming, both free and indoor farming systems are practised. Both indigenous and exotic breeds are kept. This form of farming requires a small plot as it is not necessary to have a large area for keeping the chickens and guinea pigs. The cost involved includes construction of a stall for keeping, and treatment. It is approximated that for 100 chickens egg selling alone merit 600 USD profit per month excluding other expenses. This is suitable in residential areas but such an amount of chicken creates noise pollution as the case shows (Plate 7.3). We can learn that it is easy to make recommendations, but how to implement without harassing people from their livelihoods? The practise needs different management practices including limited number if is to be allowed within residential plots. In ensuring this management practise, to restrict the number in practise requires community participation in decision making as various interest and willingness may be integrated in a holistic approach for sustainable benefits of the community.

Plate 7.3 Poultry and Guinea pigs in Changombe'A' are common: Photo, February 2007.

7.2.4 Horticulture production

Vegetables grown in and around the case study settlements include Amaranths ssp. (i.e. known as African Spinach (*"Mchicha"*[48]), sweet potato leaves (Ipomea Batatus "*Matembere*") and pumpkin leaves (Curcubita moschata-*"Majani ya maboga*[49]"). Others include Pea leaves *"Majani ya kunde"*, Cauliflower, Cabbage, Carrot, Spinach, Mustard (leaves), Okra and Tomato. In addition, a range of culinary herbs such as fenugreek and coriander are cultivated. The proximity to the markets favors increasing this type of crops as most are perishable goods, which require to be produced where there is easy access to domestic and local markets for immediate transportation for selling after harvest.

7.3 Amaranths spp production (African Spinach)

7.3.1 Production system and trends

Cultivation takes place on parcels of land at different intervals, meaning that while on one parcel of land planting is taking place on the other side harvest is taking place too. Planting and harvesting do not take place at once in all parcels of land instead there is a kind of rotation in terms of type of vegetable and time for planting and harvesting (Plate 7.4). The parcels of land on which they cultivate are not in separate places rather each farmer occupies a given portion which is divided into several terraces and all form a large parcel of land with vegetable terraces. Smallholder farmer respondents show that it takes 28 days from the planting of amaranths to harvesting. Since they harvest at different intervals the parcels of land produce amaranths vegetables throughout the year. During the summer

[48] *This is Swahili word meaning the same in Tanzania.*
[49] *This is Swahili word meaning pumpkin leaves.*

season the harvest is not much and the demand is high. The demand for amaranths during this period influences a price increase. The price for a bundle of amaranth vegetable produced (Plate 7.9) raises from 0.01 to 0.2 USD and the same applies to other vegetable crops mentioned in the market areas in the city.

Plate 7.4 Vegetables cultivated at different intervals in Ubungo Darajani: Photo, January 2007.

Farmers also tend to rest their small plots i.e. ridges by rotating in the same land (Plate 7.4). For one ridge of amaranth farms, each bridge harvest TShs. 3,000/= to 10,000/= (i.e. 3-10 USD) per ridge within a period ranging from three to four weeks after germination. This shows the gaining of TSh.60, 000/= to 100,000/= (60-100 USD) income per month for a plot with 8-20 ridges of amaranths. This clearly shows the contribution of urban agriculture to poverty reduction and social well-being of the society.

The crop rotation and mixed farming adopted by smallholder farmers in the three study settlements help increase their productivity and at the same time conserve land (Plate 7.4). In case of Goba settlements, it has been noted that local leaders already established socially regulated norms of not clearing bushes along the river sources to conserve the soil. The leaders argue that vegetable and other annual crop farming exposes the soil after bush clearing. Thus, the enhanced deforestation resulted in soil and climate changes. One landholder in Goba settlement remarked:

> *"…in the 1990's we experienced cold and pleasing air in our settlement throughout the year, today weather has changed and it is too hot almost throughout the year. I think this is caused by bush clearing for residential and urban farming land use in our settlement".*

The statement shows bush clearing for farming has resulted in changes of the micro-climate. This reinforces the need for environmental conservation when urban agriculture strategies are to be accommodated in the city setting. Equally, it is the author's view that such a statement may only show a subjective perception or respondent. In addition, in both the study settlements, crop rotation of

amaranth farming is popular. The practise involves land preparation, planting, weeding and harvesting processes. The majority of respondents reported to produce vegetables crops, which suffer from fewer diseases (Goba 90%; Mabibo-72% and Chang'ombe 'A'-68%) as earlier discussed.

In both settlements environmental and health risks appeared associated with poor management of inorganic wastes, the use of wastewater and the use of pesticides(Plate 7.5; 7.6). The use of wastewater by some smallholder farmers and retailers before selling causes consumers to fear the health aspects associated with urban farming. How hygienically safe can this be? These sellers of green vegetables (mchicha) are washing their wares in the heavily polluted waters of the Mabibo River-Kibangu in Dar es Salaam. The water from these rivers is used in different sections of vegetable growing. Particularly, observed during germination and in three weeks before harvesting. 87% of smallholder farmers show that even though are using this water, they used to leave using the water to one week before harvesting. One can wonder if the water in these rivers is polluted and to what extent? And if polluted, the time the smallholder farmers left without using the water as a preparation for harvest, does it have any health impacts? This shows keeps the need of more training for the smallholder farmers involved in farming for retailers (Plate 7.6) selling these vegetable crops, as well more intervention on the raised question which will help to clear fears already voiced by consumers.

The production trend of amaranths and other vegetables grown within the study settlements keeps decreasing year after year. Respondents in Ubungo Darajani (68%), Goba (75%), and Chang'ombe 'A' (82%) claim this. They showed that in the past two decades, vegetable production occupied a very large area within the settlements and along the steep valley and riverbanks. The trend keeps decreasing as the land that was formally used for vegetable gardening is transformed to other land uses. These include commercial, residential and industry without any restriction. One wonders why such transformation occurs at expense of urban agriculture space. In addition, fears of health aspects increase marginalisation of the sector in the study settlements (Plate 7.6). This shows a need for policy enforcement particularly during implementation and monitoring and evaluation stages of land use planning where urban agriculture can be included in the urban setting.

Plate 7.5 Smallholder farmer with his working gears in Mbezi River in Goba valleys: Photo, February 2007.

Source: *ThisDay of 04 /10/2007 accessed on 05/10/2007.*

Plate 7.6 Smallholder farmer washing his amaranths ready to sell in streets of Ubungo Darajani-Mabibo.

7.3.2 Social characteristics of actors, location, and migration trends

The results of the survey show that the majority of the respondents are young people between the ages of 18-40 (66.3%), 19.4% being single, 23.4% married and 13.5% widowed. The respondents comprised of 78% male headed and 22% female headed households. Up to 84.4% of the respondents in the three settlements originated from upcountry regions. These figures confirm the migratory patterns in these settlements (Table 7.1). These respondents showed that they had been practicing gardening in their home place (i.e. rural areas) before they moved into the city.

Table 7.1 Social characteristics and migration trends of case study areas

		N=350			Headed family		Originality	
Age	**Single (%)**	**Married (%)**	**Widow (%)**	**Total (%)**	**Fe (%)**	**Male (%)**	**Upcountry (%)**	**Within the region (%)**
18-40	19.4	23.4	13.5	66.3	8	35	26	6
40-60	8	12.7	6	26.7	12	27	48	7.6
60+	2	3	1	7	2	16	10.4	2

Location

Smallholder farmers were involved in farming both in and off plots. Off plot farming includes but is not limited to locations of prone areas experiencing seasonal flooding and in idle land designated for conservation. This includes areas such as riverbanks, valleys, hills and steep slopes, which are named

as fragile and hazardous land in land development policy[50]. Others include public open spaces, land reserves along the roads and power lines and institutional premises (Plate 7.7; 7.8). These areas are idle lands and if they are earmarked, planned and allocated to smallholder farmers in whatever lease arrangement given, can effectively maintain and conserve land at the same time as contributing revenue to Municipal authority. Mapping urban agriculture land and using Geographical Information System (GIS) tools can be important for effective urban agriculture integration and monitoring tool in urban planning for an improved urban land governance system in this context.

Plate 7.7 Amaranth cultivation along industrial premises in Chang'ombe 'A': Photo, January 2006.

According to land development policy, the fragile and hazardous land needs to be zoned for conservation. This includes being conserved by planting trees to prevent erosion and land degradation. The reality observed is that these areas have been encroached upon by smallholder farmers and people developing their settlements. Inadequate policy and legal enforcement to guide these hazardous lands as well as controlling housing development in these areas seems to be a major problem for smallholder farmers. Particularly, problems are resulting from continuous land subdivision for construction purposes, which limits urban agriculture practise. Smallholder farmer respondents (72% in Goba, 78% in Ubungo Darajani and 84% in Chang'ombe 'A') show that they were not aware of the use of such land and restriction behind it. Likewise, no land use plans showing the use of that land are put in place at local level. Apart from that neither local leaders nor local authority staff informed them on such use if any. This indicates inadequate communication and information flows in coordinating and controlling land development in the city.

[50] *According to the land Act of 1999 Sect. 7 (1), refers to land of which its development is likely to pose a danger to life or to lead to environmental destruction. It includes lands along river banks, steep slopes and valleys meant for conservation and for urban farming.*

7.3.3 Asset (input) building and use

The main assets used for farming in the case study settlements include seed, labour, family, hoe, spades, irrigation water, pesticides, fertilizers and capital[51]. These assets are common to all case study settlements as inputs for farming. 64%, 61%, and 72% of the gardeners in Goba, Ubungo Darajani and Chang'ombe 'A' get their seeds from relatives, friends and from shops. 72% of amaranth growers in the settlements perceive that seeds are cheap and readily available, and sometimes dry seeds themselves for the next season.

The tools that farmers own in Goba, Ubungo Darajani and Chang'ombe 'A' include pickaxes (65,45%, 67%) spades (62%, 67%, 58%), hand hoes (75%, 85%, 81%) and rakes (61%, 59%, 81%) respectively. In addition, 88% of smallholder farmer respondents own land in different farms as previously explained and the rest are farm tenants from people who do not farm, but have underutilized land. Tenants pay an average monthly fee of 5-10 USD to the landlord. However, the contact between them is verbal. In addition, the majority of the smallholder farmers own their tools as discussed. The result also indicates that usually farmers do prefer to work on their own without demanding a hand of help from the casual laborers. In some cases farmers hire these labours only per day to work in the garden particularly watering the amaranths spp.

Farmers are handling the manure and composite on their farms without awareness of the health risks associated with faecal contaminations. Using manure and composite wastes can affect human health through contaminations, and therefore increases residents' vulnerability to diseases. This is caused by the handling of manure on their farm lots as the study shows.

7.3.4 Access to land

Both formal and informal modes of access to land exist in the study settlements. The formal mode involves getting the land by applying to the government and following the procedure required. The informal land access was aggravated by informal land transactions, which are done between buyers and sellers in the area without government notice. Interviews with Ward leaders in the case study settlements revealed that the mode of land transactions include drawing of land selling or transfer agreements. In this case the ten cell and Subward leaders play more active roles in the process. They liaise with neighbours of a would be land seller and authenticate confirmation of ownership and witness payment and handing over (Figure 7.3).

[51] *The smallholder farmer respondents in both Goba, Ubungo Darajani and Chang'ombe 'A' show that their main source of capital includes their relatives (46%), children (26%), friends (18%) and the rest use some of their salaries from their formal employment to strengthen their farming activity.*

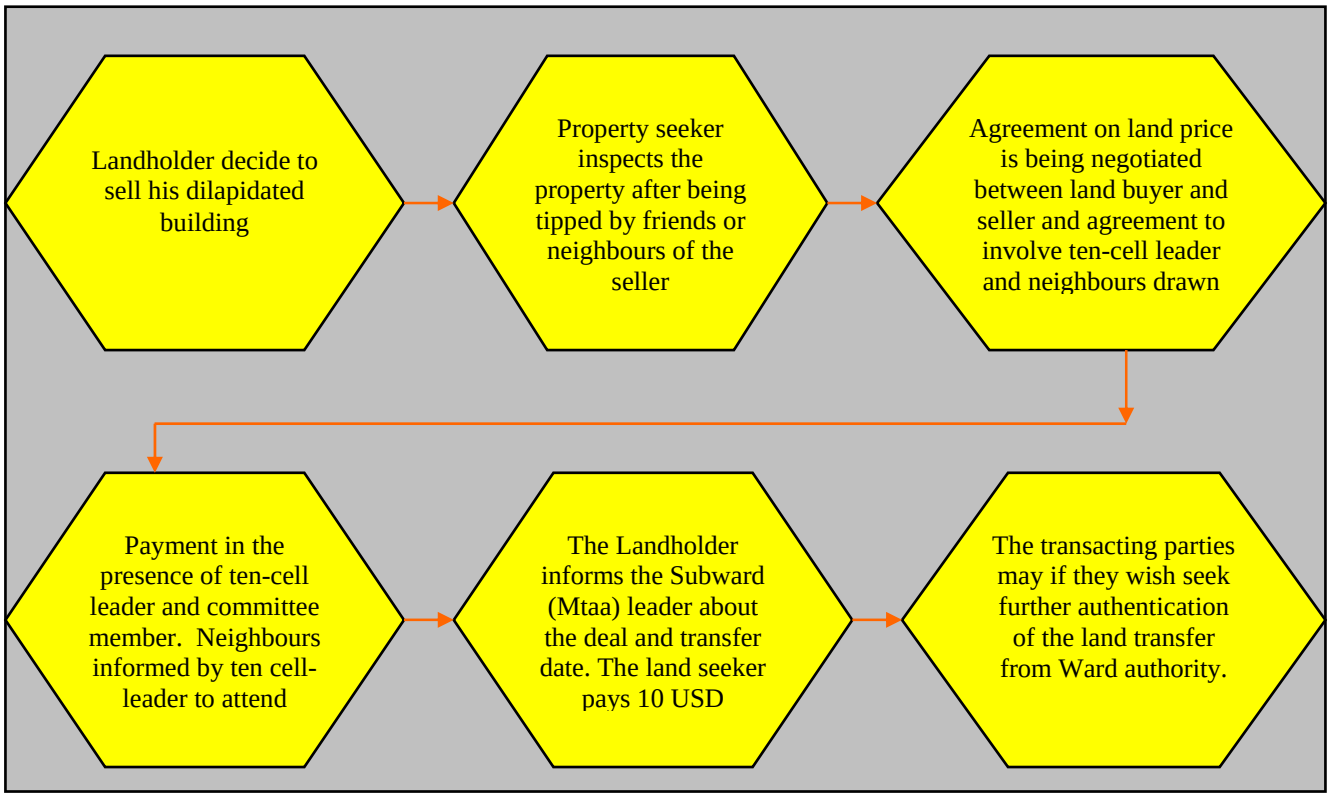


Figure 7.3 Informal land transfer and parcelling in the case study settlements.

The modes of land access practiced raises more questions about the procedures for land acquisition that are adopted by the government to enforce urban planning process in the already declared land for development. One could wonder what is happening to all such informal land transaction within the declared land ripe for development and coordinated by the government rules? This is due to a lack of monitoring systems once the land is declared ripe for development. Likewise, poor awareness of landholders in these areas and fear of eviction after the declaration were observed to increase informal land transaction and therefore affects land availability for urban agriculture. The urban planning land use practise in the city, more often than not, land allocation for urban food producers is often excluded from land use plans and hardly allocation done once a landholder wants for such purpose.

7.3.5 Markets and marketing

Land market and marketing of the urban agriculture by product appeared to be an important ingredient in determining how urban as an economic space may integrate urban farming for the benefit of the urban poor. Location from the city center, level of housing investment in the locality, income of the landholder in the neighborhood and distance to infrastructure lines such as roads and water influence land market in the study settlements appears to affect urban agriculture in the case study areas and the city in total. Table 7.2 summarise the land markets price variation.

Table 7.2 Land prices in the case study settlements

Settlement	Plot size	Location	Price range (TShs)	Remarks
Chang'ombe 'A'	100-400 m²	Along the infrastructure premises	10,000,000-20,000,000	Hard to get this
	500-800 m²	Inner zone of the neighborhood	8,000,000-14,000,000	Involves demolition
	800-1600 m²	Outskirt and far from infrastructure premises	10,000,000-15,000,000	Difficult to find this plot
Ubungo Darajani	100-400 m²	Along the infrastructure premises	6,000,000-15,000,000	Hard to get this
	500-800 m²	Inner zone of the neighborhood	4,000,000-9,000,000	Involves demolition
	800-1600 m²	Outskirt and far from infrastructure premises	7,000,000-14,000,000	Difficult to find this plot
Goba	100-400 m²	Along the infrastructure premises	3,000,000-6,000,000	Available
	500-800 m²	Inner zone of the neighborhood	1,500,000-3,000,000	Available
	800-1600 m²	Outskirt and far from infrastructure premises	2,000,000-5,000,000	Many such plots are available

Note: I USD is equivalent to 1250 TShs by March 2007.

Table 7.2 shows that for plots near road and water infrastructure premise prices are higher compared to others within the inner and outskirts of the same neighborhood where the services are inadequate. Likewise, the price of land and its availability differs from the location as shown in the table. Some housing properties in the inner plots and near the roads require demolition once someone buys. The periurban settlement of Goba still provides potential for accommodating urban agriculture rather than other study settlements.

Amaranth and other vegetable farmers sell their vegetables to retailers who come and buy vegetables from their gardens as previously explained. These retailers buy vegetables by being allowed to harvest on a given portion of land (Plate 7.8). After buying, buyers in Ubungo Darajani (60%), Goba (25%) and Chang'ombe 'A' (52%) walk around different areas and sell vegetables to the households at a price of 50 Tsh per bunch. The remaining in Ubungo Darajani (30%), Goba (60%) and Chang'ombe 'A' (40%) transport using bicycles and vehicles to market areas mentioned for selling. Others for Ubungo Darajani were (10%), Goba (15%) and Chang'ombe 'A' (8%) sell to retailers who sell along high concentration pathways and streets (Plate 7.9).

Plate 7.8 Amaraths harvesting at Ubungo Darajani. Photo, March 2006.

Plate 7.9 Women selling vegetables along street at Ubungo Darajani: Photo, March 2006.

Packaging and vegetable preservation for two to three days is a problem for smallholder farmers and petty traders in market areas. This is affecting their earning and therefore decreasing their income. According to local authorities, the street market selling does not contribute to local government revenue. On the contrary, respondents selling vegetables including amaranths in the street contributed 0.1 USD to Subward fee collectors every day. These respondents (85%) were wondering where the funds are going if not to the local councils as their contributions to city economy. This surprise from respondents shows need for improving local institutions in revenue collection and recognising the potentials of urban farming to city economy. Documentation of how much money is collected and to what product, types of farming crops is rational for record keeping, which confirmed missing even to market areas. The interview with the market manager shows that high percentage of vegetables including amaranths are coming from outside the city. Records and number of vehicles providing these vegetables are provided (Table 7.3).

Table 7.3 Market managers response on the quantity of vegetable per day in the city

Market areas Visited	Number of vehicle bringing the vegetables including amaranths from upcountry	Range of Tons of vegetables flowing per day	Production of vegetables within the city
Kariakoo	15-25	7 tones and above	No records but understanding the contributions of vegetables from Bagamoyo, Kibaha and Mkuranga (Map 4.1)
Tandale	8-15	7 tones and above	-do-
Makumbusho	5-10	7 tones and above	-do-
Tegeta	4-8	1.5 tons and above	Receives some from the case study areas particularly from Goba and the surroundings
Temeke sterio	12-20	3 tons and above	No Records
Buguruni	8-12	7 tones and above	No Records
Tandika	4-8	1.5 tons and above	No Records

Although the quantity of food produced by city farming does not match up to that outside the city (Table 7.3), its impact is quite considerable when looking at its social aspects. Particularly, it appears in terms of its employment, nutritional values and food security for the families. It is the authors' view that although the national and municipal policy makers and urban managers do not acknowledge this important role; we need to consider it in modern urban planning and design decisions. This can help to minimises several challenges posed to urban farming including understanding if urban land is either not available or not accessible; and when available, it is suitable or not suitable for farming in designated sites. The market managers show that one aspect among others that the urban planners and other stakeholders doubt is the existence of vegetable wastes in market areas and in residential premises. They confirm that the agriculture wastes are beneficial. The wastes are easily decomposed and are used in existing farms and therefore employ people and at the same add nutrients to soils used for farming within the city.

7.3.6 Problems affecting amaranth production

Amaranth production is subject to a wide range of constraints in its production sphere. These include pest attacks, adverse weather conditions and timely access to inputs such as seeds and pesticides. Others include use of the suggested polluted river water for irrigation and land subdivision for residential premises. These are causing decline in the quantity, quality and safety of vegetables expected by consumers. Apart from that limited extension services to smallholder farmers to educate them on sustainable urban farming are hardly provided and therefore increases disease vulnerability. Respondents from Goba-64%, Ubungo Darajani-70% and Chang'ombe 'A'-67% confess inadequate of extension services in their areas. Extension services provision to smallholder farmers, ensure information flows, marketing and dissemination of new innovation are factors appeared that could enhance their productivity in the city.

Besides, fear of eviction of the respondents by the government is common and in one way affects crop cultivation in periurban areas such as Goba, which was declared as ripe for urban development[52].

[52] *Formal interview with Ilala Municipal Planner on December 2006 argues that once the declaration is made there is no chance for farms in urban areas. He continues remarking that Dar Es Salaam is the market for upcountry farm products and if we consolidate here we will kill the market from the other regions and will add cost to city administration. This was his opinion, forgetting the benefits the sector provides to sustain the city management in terms of urban poverty, food insecurity and encounter urbanisation challenges in development processes.*

Problems of insecure to access land as an input plagues urban smallholder farmers almost everywhere in the city where different forms of urban agriculture practice discussed are conducted. Specific land problems arise because By-laws and regulations prohibit food production of certain types especially livestock rearing, but sometimes crops. Smallholder farmers are often pushed out of their land and it is taken for residential and commercial purposes. This affects the smallholder farmers who want to engage in improving their farm lots for social and economic benefits but lacks funds for improving their plots in urban areas as the study settlements shows.

7.4 Impacts: Benefits, costs and risks

7.4.1 Urban agriculture benefits

Benefits

Food security

Amaranth vegetable farming in the three settlements provides cheap, fresh and healthy food to majority of the urban poor and other consumers in the city. The food produced contributes to meeting the annual and seasonal demand in these settlements. Likewise, there are large variations among different crops contributions discussed. For instance, the availability of such locally produced fruits and vegetables contribute to solving highly prevalent urban nutritional problems stemming from insufficient intake of vitamins and minerals (Plate 5.10). Women have multiple roles in families that count significantly in assessing the welfare of the families. The engagement of women in the amaranth farming helps sustain provision of nutritional food to their family and therefore improves family nutritional status.

Even though women are engaging in farming practice in the three settlements, men dominate in controlling the products and funds after sale. Men as head of households are the ones observed responsible for fund allocation for any use after sale. For example, in Chang'ombe 'A' settlement men control most of the cash (62%), compared to women (38%). In Goba it is 56% for men compared to 44% for women while in Ubungo Darajani were 58% for men compared to 42% of women. This indicates women control and access to urban agriculture produce is low and therefore limits their effort to widen their scope in development activities. This is common in Sub-Saharan Africa cities where men dominate women in controlling resources even in the rural context of Tanzania.

Besides food security advantages, over 70% of all respondents in the three settlements spent less than Tshs.300, 000/=per month on basic needs (i.e. food, clothes and health). The average expenditure per month points out the high level of poverty among the smallholder farmers respondents spending less than 1 U$ (DAC, 2002). This is also, indicated by the fact that (68%) of smallholder farmer respondents in both cases are without any savings in the bank. The high expenditure patterns of smallholder farmers' households and the absence of savings limits them from accessing financial credit and loans from financial institutions for improving their social welfare.

Employment provision

Employment pattern indicates the importance of the urban agriculture industry in urban context towards poverty reduction (Chapter five). Thus, obtaining the benefits of urban life resulting from urban agriculture demands creative strategies and cooperation from different stakes including urban

managers, planners, decision makers, researchers, learning institutions and other development partners (Chapter 8 and 9).

Cash providing activity

The interviews conducted with the farmers revealed that income obtained from amaranths and other vegetable production is not received on a regular basis. The amount produced differs from one season to another depending on the climatic condition and water availability. Income obtained also depends on the rate of consumption of vegetables i.e. demand in that season in both three study settlements. This shows that if the demand is high, the farmers sell more of their vegetables and therefore earn more income. The other factors include amount of land and number of terraces smallholder farmer posses for gardening. The income a person with five terraces is higher compared to the one with less. But also this depends on the labour and care used during germination through to plant maturity. The variations of income are summarised in table 7.4 per month.

Table 7.4 Earning from smallholder farmers in the case study settlements per month

Amount of money per month (TShs.)	No of farmers	Percentage of respondents (%)
0-10,000	88	24
10,000-50,000	67	18
50,000- 100,000	73	20
More than 100,000	132	38
Total	360	100

Environmental conservation, leisure and recreation

Exposing urban agriculture to the public the knowledge, risks and way for sustaining the activity in relation to resource management observed to be enhanced. Respondents who were involving in floriculture and tree seedling contribute much to city environmental conservation and recreation. For example, floriculture and other canopy trees provide areas for resting (Plate 5.12). But the actors have no designated areas for floriculture and seedlings in the city, which calls for more intervention in planning and design for land development. The use of road strip for cultivation is common and is expanding smallholder farmers' vulnerability to risks of eviction by the city council (Plate 5.4). In addition it was noted that the further the smallholder farmers proximity is the city centre the more vulnerable they become compared to the periurban farmers. The former, accompanied with city harassment and fear of eviction looks to destruct the urban environment and create a nuisance.

7.4.2 Costs and risks associated with urban agriculture

Cost

It was difficult for smallholder farmer respondents in the three cases to give a proper answer on how much sucks or harvests they get in quantity per month. This was due to a lack of record keeping that could enable them to understand how much he or she harvested per day, month or per year. The knowledge observed from smallholder farmers are calculations done through number of ridges they have and the cost of seeds purchased during germination period. 52% of smallholder farmers even forget how many lots or terraces they have harvested per season. The rest seem to remember number of lots in their heads with no record keeping. Similarly the question of labour and time spent in farming are not counted as they do not regard the activity to be a permanent employment and livelihood

strategy. This shows that more training is needed in record keeping and costing inputs used in farming for the betterment of farmers.

Risks

Health

The use of wastewater for vegetable farming in the study settlements is a common practise. Both domestic and industrial wastes are flowing in river channels, which are in turn used for urban agriculture irrigation including amaranths vegetable production. According to WHO (2006:23), in countries where poor sanitation and hygiene conditions exist and untreated waste water and excreta are widely used in agriculture, intestinal worms pose the most frequently encountered health risk. Table 7.5 summarises the health implication associated with use of untreated wastewater:

Table 7.5 Summary of health risks associated with the use of wastewater for irrigation

Group exposed	Health threats		
	Helminths	**Bacteria/viruses**	**Protozoa**
Consumers	Significant risks of helminth infection for both adults and children with untreated waste water	Cholera, typhoid and shigellosis outbreaks reported from use of untreated wastewater; seropositive responses for Helicobacter pylori (untreated); increase in non-specific diarrhoea when water quality exceed 10 exponent 4 thermotolerant coliforms per 100ml	Evidence of parastic protozoa found on wastewater-irrigated vegetable surfaces, but no direct evidence of disease transmission

Source:*WHO,2006:23*

Decision makers including planners have negative altitudes toward urban agriculture practise. Particularly, based on health aspects where waste water that appears to be polluted used for farming and washing agricultural products (Plate 7.6). Scientifically, it appears for crops to be cooked has less effect, but those to be eaten in raw form may have effect to health. Sources of waste water need to be controlled and restricted especially where industrial water opted to be used for farming, where minerals such as lead and zinc may be difficult to be removed even if the product is cooked. Likewise, urban agriculture has been blamed for increasing malaria cases in cities, which according to recent studies is questionable[53]. Wastewater treatment is important[54], but may be difficult since even domestic wastes water and sanitation systems in the settlements are directed to these rivers (Plate 7.10), which increases more health risks of consumers as the table 7.5 indicates. Thus, upgrading of these settlements and training of smallholder farmers can be important for improving their livelihood in the urban setting.

Seasonality

Climate changes, water availability and perishable nature of amaranth vegetable products causes it to be seasonal activity in the city. This affects the sells and income level and adds pressure on water use during the dry season. The organisation of the sector in a proper land area becomes important where infrastructure facilities can be provided, and monitored and profits to the majority ensured. It is

[53] *Study conducted by Dongus, S (2007) in the city of Dar es Salaam shows that high numbers of Malaria parasites cases are not associated with urban agriculture, instead poor drainage and sanitation systems are the cause.*
[54] *See also Inocencio et al, (2003).*

through land use planning that this can be achieved and land can be properly allocated to add value to agricultural land.

Absence of direct official acceptance in practise

According to CAP 378, urban agriculture is classified in Use class P which according to this Act requires special treatment in its sitting. Using the same Ordinance, section 78 empowers the Minister responsible for planning and for putting in place regulation to protect land development. This shows that the CAP 378 and use class P have been redefined to enable their integration in policy implementation. However, though this shows recognition of urban agriculture in policies that implement legislative framework (Table 8.1), it does not provide prominence that would allow useful implementation. For example, it has been difficult to know which land type is suitable and how it can be integrated in other land uses including residential areas in both urban and periurban settlements. Due to the importance and contribution of urban agriculture as seen in this context, location, type and scale determinants are preferred for proper coordination and control. Similarly, use of local leaders including deployment of Subward and Ten cell leaders in coordinating and controlling such development are vital to ensure sustainable use of land.

In total, urban agriculture makes productive use of undeveloped land and therefore decreases poverty in cities' urbanization processes. These advantages and cost accruing from urban agriculture practiced in the city necessitates urban planners, managers and decision makers to think about how urban agriculture can be integrated in city spatial land use planning for improved land governance and become a vehicle for poverty alleviation.

7.5 Allied challenges influencing urban agriculture setting and production

7.5.1 Security of land tenure

The systems of land ownership in the three settlements have been previously explained (Figure 6.5 and Section 7.3.4). The granted right of occupancy has built confidence in the smallholder farmers involving in plot farming in the study settlements. These farmers understand that they are secure in terms of not being evicted by the local authority, or must receive high compensation value in case of eviction or compulsory land acquisition for public interests. These farmers are aware of the by-laws guiding urban agriculture particularly on restricting high raised crop farming such as maize in their plots in Ubungo Darajani and Chang'ombe 'A'. This has increased vegetable, mushroom and floriculture farming for improved income and social well-being.

7.5.2 Access to information, communication, credit facilities, and informal land acquisition

Access to information, communication and credit facilities are resources that are important for improving smallholder farmer welfare. The study indicates that smallholder farmers are experiencing inadequate access to land, information, delivery systems and rights to get involved in land use planning. This limits the improvement and understanding of their rights available opportunities, and interaction with planning institutions. This results in difficulties in decisions undertaken at different levels, which affect urban agriculture livelihoods.

The availability of credit for urban farming including amaranth farming activities is one factor that can pull the respondents out of poverty and improve urban land governance. 93.8% of respondents in the study settlements had no access to credit. Only 2.2% of respondents in Goba reported having received credit of up to 400 USD. In Chang'ombe 'A' and Ubungo Darajani settlements the figure is only 4%. This indicted the need for putting in place and strengthening credit scheme access that can help to improve the lives of smallholder farmers. Likely, insecurity of land tenure as collateral enhances this.
In Goba settlement, private individuals still buy land in large quantities up to 30 hectares for crop cultivation, housing and for livestock keeping. The authors' attempts in making a follow-up on such a big land investment to one settler bought such a large amount of land[55] in an urban area were not fruitful. The settler showed non-conformity and poor awareness of legislation. He remarks that Goba sells its land as a village, and has a given mandate[56] to do so. This remains a question for policy enforcement and deregistration processes once the settlement is declared as a planning area ripe for urban development. The deregistration of villages[57] once the settlements declared ripe for development in Dar es Salaam mostly is not adhered as presumes that once declared urban no farms allowed to exist. This character seems common in other African cities including Nairobi and Uganda as reported by Kreibich *et al*, (2002:34).

7.5.3 Absence of smallholder farmer organisations

In the three settlements examined, smallholder farmers were not well organised. The smallholder farmers understand the potential of their farming activity for improving their social well-being, but they have not united to form an organization. This is also augmented by different tenure status, reasons for farming and plot size. For example, some farmers depend on only farming for their household subsistence while other for petty business. Some farmers observed are secured in terms of land ownership while others are not. Similarly, other smallholder farmers use inplot farming while others are offplot including a fragile land. Forming an organization can enhance their rights to use the land in whatever tenure to be granted and to negotiate on land user rights for increasing their productivity. Correspondingly, this will help to present their feelings and perceptions in improving the sector to politicians including Ward Councilors who are the policy makers and representative in their area. The link of smallholder farmers with this political leadership (Chapter five) is minimal, which enhances marginalisation of smallholder farmers. The organization of smallholder farmers would help fight for better prices for their by-products and other matters in the production sphere, and would improve urban land governance for city development.

---

[55] *Such kind of land selling is restricted by Urban Authorities Act No.7 and 8 of 1982 revised in 1997.*

[56] *The village Land Act of 1999 No.5 in Tanzania allows an individual to own land more than 3 acres while the Land Act of 1999 No 4 and Urban Authorities Act of 1982 No 7& 8 Restrict such provision. Since Goba is a village and the same is within the city band of influence. What could be the alternative? One could think the need for deregistration of the village during declaration. But one could be astonished why still Goba operates in such administrative status. The two interventions are important for reduced land use conflicts towards improving urban land governance in Dar Es Salaam city in the case study areas in particular.*

[57] *When the fieldwork of this study was completed in March 2007, a total of 27 Villages were existing in the city of Dar Es Salaam. The interview with the Ministry of Land Officials in November, 2007 showed efforts under way to deregistration, which have not provided fruitful results to ensure sustainable use of land in periurban settlements in the city.*

7.5.4 Low priority setting to support urban agriculture in urban authorities

A decreasing budget to finance the urban agriculture and livestock sector within the municipality is common. This creates more questions about priorities if real urban agriculture management is a necessity. Budgeting and financing for urban agriculture is a critical issue that may help smallholder farmers increase their income and meet costs for extension services, which were observed to be inadequately supplied in the city.

7.5.5 Weak planning institutions linkages and participation

A notable problem is that the municipal council's operations in the city are inconsistent with the principles stated in the policy and legal documents which require integration of urban agriculture in urban planning system (Table 8.1). Equally, the Land Use Planning Act and Land Use Planning Act of 2006 seem not to be mentioning who will be responsible for coordinating this sector. The policy and legal statement is therefore observed to be too abstract to anchor the institutional body that will be accountable. For example, interviews with different institutions show the following responsibilities and the way they perceive urban agriculture (Table 7.6).

Table 7.6 Planning institutions responses in coordinating urban agriculture[58]

Central government	Respondents		Responses		Remarks
	Male	Female	Yes	No	
Ministry responsible for Lands and Human Settlement Development	3	2	V		It is a form of land use in urban areas but hardly incorporated in planning schemes due to legal restriction. But argues the Ministry responsible for agriculture should be responsible
Ministry responsible for Health	1	-		X	Have no legal mandate to coordinate urban agriculture, but affects the urbanities and argued is the cause of cholera and cause of malaria diseases
Ministry responsible for Livestock and Agriculture	1	1		X	The official says they don't deal with urban farming. Only deal with rural urban agriculture improvement as the urban context remains with Ministry responsible for land
Ministry responsible for Water and energy	1	-		X	Have no legal mandate to coordinate urban agriculture
Ministry responsible for Tourism	1	-		X	They confess its great potential for greening the city but it is the role of the Ministry responsible for lands, local government and agriculture and not theirs
Ministry responsible for Local government	1	1		X	Argues urban agriculture gives meager profit to urban development and therefore even the reforms may change its to belong to cooperative department and not as such the way it looks
President Office of environment	1			X	Argue to deal with urban farming when it brings environmental nuisance otherwise they are less concern
Ministry for Planning and privatization	-	1		X	Looks urban area as area for investment of other profitable land use rather than urban agriculture

Table 8.1 indicates that urban agriculture has been integrated in policy and legal settings as one of the urban land uses. But one wonders whether it belongs to Ministry of Local Government or Ministry responsible for Lands. These Ministries as planning institutions are responsible for land use

[58] *Institutional confusion is still partly based on colonial responsibilities and level of commitment of different planning institutions to new emerging realities.*

preparation and policy, regulation and order making and approve the same. Principally, they are the one who can help coordinate and control farming by connecting with other line Ministries. One wonders why they are hesitant. This is the policy enforcement gap, which is important to address in order to promote urban agriculture. This suggests the need for the government to form a separate body within the Ministry and for the Municipality to deal with the issue of urban agriculture and link with the Ministry responsible for Agriculture an Livestock, Health and Water. The officials in the Ministries mentioned are hesitant on dealing with the issue, as it will add more administration cost. All this, despite the fact of the great role urban agriculture plays in food security, environmental conservation and urban poverty reduction in development processes, still practiced without coordination.

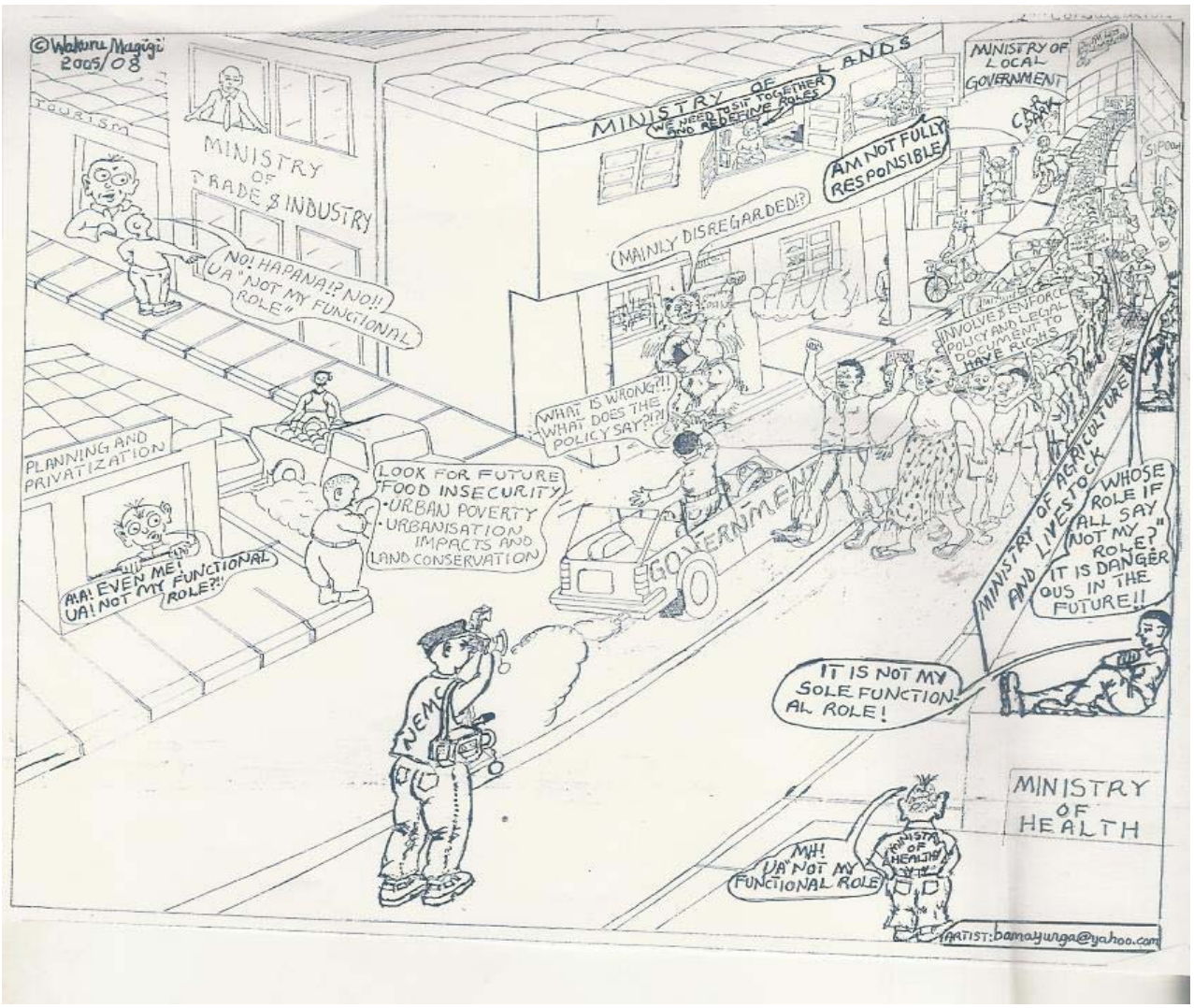


Figure 7.4 Weak Ministries functional linkages, which have implications on the future sustainability of urban land and the urban poor.

7.5.6 Inadequate technology on use of waste-water for farming

Use of wastewater for irrigation from various river streams around industrial area is common. This is a good and sustainable way of utilising water if it is properly treated[59]. Interviews with industrial officials surrounding Ubungo Darajani and Chang'ombe 'A' showed presence of industrial water treatment before allowing water to flow in the river. The issue observed is the domestic sewerage system resulting from increased informal housing development, which illegally directs their open and closed sewage systems into these rivers. No measure had been observed to redress such challenge, which keeps consumers fearing urban farming within the city. Therefore technology in water treatment is essential to enable the smallholder farmers to use such water for farming. This shows also a need for training on domestic sanitary systems, which is poured in the rivers streams and valleys in the city, and therefore affects the urban environment (Figure 5.1; Plate 7.6; 7.10).

Plate 7.10 Mabibo River-One of the sources of water for gardening: Photo, March 2007.

7.5.7 Increasing housing density

Demand for land for housing and other urban investment including industrial construction is increasing in the city and the settlement in particular. Informal land transaction and parcelling, land subdivision in mixed residential areas including the study settlements has caused the decrease of agriculture land and encroachment upon what would be public leisure spaces. All this results from increasing investment in the city and homeownership needs of urbanities, where each needs to have a decent house in the city. This calls for urgent action of the local authorities and other planning authorities to collaborate and control the increasing density resulting from informal land transactions taking place in the study settlements and the city as a whole. If this is unchecked, the future urban environment can be degraded and therefore endanger the fate of the incoming generation.

---

[59] *This also suggest more information is needed on the use of untreated household wastewater to avoid estimated and perceived risks of the use in urban farming as mostly depends on different factors, e.g. which crops are grown, and how the irrigation water is applied.*

7.5.8 Low urban agriculture rent price at market value as city investment expands

Urban farming land property tax guidelines appeared to be generalised and are low compared with other urban land uses. For a person with high and medium density residential premises, the land rent for 2007/08 pays 10,000/=TSh (8U$) per year. On other property including commercial and residential the amount is Tsh 30,000/= (i.e. 24U$) and for commercial and industrial premises the rent is costs TSh 450,000/= (i.e. 360U$) per year. This seems good for the government in terms of revenue collection. A person with the same plot size for urban agriculture is required to pay TSh 20/= (i.e. 0.016U$) per year. This rate is low[60] compared with other land uses. In the real land market, the study found that for a plot of low and medium density, the tax rate is 20 U$ per square metre depending on the distance from the city level to reflect the real land price. This enhances its exclusion once the need for increasing local authorities revenue base expansion becomes criteria for judging land development and for improved service provision.

The real land market value for land in the city implies increasing tax from such land but still lack legal backing. The study revealed that, the land rents were those inherited during colonial period and have not been revised to reflect the real land market. The non-revised rate of farming land property tax led to a decreased importance in terms of economic viability in urban settings and enhances its marginalisation and consideration in contributing to city economy. This is also caused by not knowing the number of farmers or their location. The review of the current rent may help with recognition of urban land used for agriculture, and in one way or another can strengthen its need for enhancing city revenue and therefore have a proper setting in urban areas.

7.6 The voices of different stakeholders on urban agriculture

The study respondents were drawn from both the micro and macro level of land use planning and decision making. Both stakeholders affected, infected and benefiting from the urban agriculture sector were drawn to get their feelings, perception and voices on what they think about urban agriculture and how it may be effectively accommodated in an urban setting. This helps towards drawing a balance of action and strategies on how best it can be accommodated in land use planning practise, which has so far excluded the sector in their setting (Chapter 8 and sect 8.14).

Policy maker respondents are crucial when we want to look at urban agriculture in the totality in urban setting and ensure its implementation. Social, physical, technological and political setting needs to be observed. The above policy makers seem to be hesitant to fully integrate the activity in the urban setting as the reasons provided. Location and land use type considerations are critical elements in urban design and for effective integration. In high density plots, it is better to consider in plot farming such as adopting mushroom production, domestic animals which do not require much space and even can be accommodated in living house corridor. In medium and low density plots gardening is possible. In addition, high raised crops are not suitable as they will create fears as the policy makers suggested. Similarly, this will depend on the location of these plots from the city centre. Within the city centre ranging 0-10 km, high raised crops and animal keeping can be restricted. In the periurban zones, where land is available such farming systems may be allowed. Moreover, poultry production was also observed to be a common practice, air and noise pollution resulting from poultry necessitates its setting to be in periurban zones of the city.

---

[60] *The interview with Kinondoni Municipal Land valuer officials in December 2006, showed that the rate is under review but he did not provide how much it will cost to enable smallholder farmers to continue farming in their lots.*

45% of respondents from the local and central government agreed urban agriculture mainstreaming would enhance expenses in servicing land in urban areas (See also chapter eight). They argued that, in the past the government has been incurring more cost in providing infrastructure services (no statistics given). Continue remarking:

> *"...urban agriculture requires space to be accommodated, and needs services including water and other infrastructure facilities. All these need capital, which in our municipal authorities are inadequate. We municipalities don't have high capital investment to be incurred to make it viable".*

The statement shows that even though the government recognises the existence of urban agriculture, it is still hesitant to find modalities to be accommodated in urban areas where land is scarce and with mixed land use such as in residential areas. The discussion shows that urban agriculture has social and economic returns to enable smallholder farmers living and meeting petty cost in the city. This income revealed used for different uses including food and non-food services. This shows the economic and social importance of the farming activity at local level.

Even though it seems those interviewed do not accept the contribution of urban agriculture, they admit that it plays a great role in providing employment to urban residents. Consistently, they suggested those people opting to involve in urban agriculture should go to periurban areas where land is abundant. In investigating what strategies are in place to make it viable in periurban areas, 40% of respondents suggested forms of urban agriculture can be permitted in urban context based on its forms and scale where land assessment becomes essential criteria to judge it allocation. For example, allowing floriculture along the road reserves, trees with canopy in residential premises while restricting the animal husbandry in urban residential premises and therefore be practiced in the periurban zones of the city where land is abundant.

7.7 SWOT analysis of urban agriculture and spatial land use planning

SWOT[61] is an analytical and strategic planning tool used in a participatory planning approach. It has to be based on a sound knowledge of the present situation and trends. The outputs of a SWOT analysis is structured basic information, a common understanding of reality and a set of strategic options. Indicators for the internal and external situation are two main components of SWOT suggested in literature (Ilari, K. 2001:4; Hay, G.J.*et al*, 2005:339):

- Indicators of the internal situation described by existing strengths and weaknesses: Strength is defined as any internal asset of know-how, technology, motivation and entrepreneurial spirit, finance, business links, etc... which can help to exploit opportunities and to fight off threats. A part from that a weakness is an internal condition or any internal deficit, which endangers the competitive position of a region or hampers the exploitation of opportunities.
- indicators of the external environment described by existing threats and unexplored opportunities. An opportunity is any external circumstance or characteristic, which favours the demand of the region or where the region is enjoying a competitive advantage. In addition, a threat is a challenge of an unfavourable trend or of any external circumstance which will unfavourably influence the position of the region.

In theory, therefore SWOTs is used as an input to the creative generation of possible strategies in this context, by asking and answering the following four questions numerous times: How can we use each

[61] *Refers to Strength, Weaknesses, Opportunities and Threats.*

strength?, How can we **s**top each weakness?, How can we **e**xploit each opportunity? How can we defend against each threat? In responding to these questions, Table 7.7 summarises the evidence of SWOT as the study settlements demonstrated.

Table 7.7 SWOTs results as an indication framework for urban agriculture integration in spatial land use planning practise.

Component	Urban agriculture	Spatial land use planning
- Strength	- Income provider - Subsistence production - Fresh food produce in cities - Environmental improvement - Increases employment opportunities in the city - Is a livelihood assets for the smallholder farmers - Existing CBOs to support	- Community willingness to upgrade their settlements - Involvement of local community in spatial land use planning preparation and implementation - Involvement of media as key actors in spatial land use planning processes - Attracts local community social capital in preparation and implementation stages
- Weaknesses	- Inadequate kinds of management structures for this purpose - Related health risks - Seasonal dependency - Increases competition for the use of water infrastructure - Inadequate human resources including extension services - Poor record keeping	- Planners are not decision makers and therefore however, good plans are prepared remains not implemented. - There exists a poor understanding of scale and hierarchical relations needed for the sector - Inadequate Land use planning initiation rights and monitoring and evaluation to local community in land policy - Inadequate communication and information flows - Weak planning institutional links - Land use plans are not implemented accordingly
- Opportunities	- Income for producers - Employment provider - Income generating activity - Ensuring food securities - growing public awareness of the potential for urban agriculture in development	- Exiting of partially supporting land development policy and legislations - Supporting national and international programes which calls for participation in planning including UN-Habitat, MDGs and Agenda 21 - Use of Information and Communication Technology (ICT) and spatial data programmes in mapping and analysis
- Threats	- Swallowed up by construction industry developments - Inadequate policy enforcement - Insecurity of land tenure - Difficulties for smallholder farmers to fuse in big markets for selling their products - Use of untreated wastewater for farming - Use of pesticides increases environmental degradation and river pollution	- Existing negative perceptions of policy makers, urban managers and planners on health and environmental aspects associated with urban agriculture - Increasing construction industry and other investment in the city without adhering to planning and land management principles - No land demarcated for this - Political interference in planning decision making

Next steps

In the light of this analysis, the study builds on existing strengths and takes steps to overcome the weaknesses. In the following chapter ways of exploiting the opportunities that are emerging while minimising the threats to these land use planning practises are presented (Chapter nine).

7.8 Reflection

This chapter discussed process, structures and resources including inputs and outputs of urban agriculture with special emphasis on amaranth production and other forms in general. The forms of urban agriculture discussed appeared to be important to contribute towards suggesting the possible urban agriculture setting considering health, social, economic, environmental, technological and institutional governance in the city. Problems hindering the farming, voices of some stakeholders and other challenges were contributed. The study shows existence of both land Act of 1999 no.4 and 5 dealing with Village and Urban land development acting in the same authority. This overlapping creates conflicts particularly in allocating land for various functions in the same setting. Other key findings contributed include lack of record keeping and input costing of smallholder farmers in their farm lots and inadequate periurban agriculture market facilities. Equally, low taxation for agriculture land and poor drainage and sanitation systems increases fear of consuming urban agriculture products was observed. In addition, weak institutional collaboration to coordinate urban agriculture land use, lack of designated land for the activity, distance to market areas and increasing vulnerability of smallholder farmers as their farming gets nearer the city center are common features discussed. The study argues that all in all urban agriculture seems to be a real practise not only in Dar Es Salaam but also in all other developing cities in Sub-Saharan Africa as the literature shows (Chapter two). This keeps urban planners and managers within local and central government to ensconce participatory planning approaches as one strategy to ensure integration. The next chapter tries to synthesise the key issues discussed in the empirical chapter.

CHAPTER EIGHT: CROSS CASE ANALYSIS AND SYNTHESIS

8.1: Introduction

The previous chapters pointed out and discussed study results. The discussion analysed the policy and spatial land use decision-making processes, urbanisation trends and land use planning processes and their implications for strengthening urban land governance. Likewise, urban agriculture practice as an urban land use potential for food security provision and a livelihood strategy for both rich and urban poor were analysed. It should be noted that land use planning processes and urban agriculture practise need commitment, involvement, transparency and inclusion of voices of different stakeholders in order to improve urban land and for good governance in Dar Es Salaam.

This section synthesises key issues arising from the above discussion. Particularly, it analyses spatial urban land use planning and urban agriculture practice. It is in these aspects that the weakness, strength, threats and opportunities are pointed out. This helps to reflect and answer some dilemmas imposed during the study setting in line with urbanisation impacts, food insecurity, urban poverty and strengthening urban land governance in Dar Es Salaam and other Sub-Saharan cities with the same context. Cross cutting issues also are discussed.

8.2 The impact of urbanisation

Urbanisation is the key factor underpinning and catalysing changes in land use, land transactions, increased rural-urban immigration and the overall urban agriculture land use increase in Dar Es Salaam. Unregulated urban agriculture implementation in urban and periurban of Dar Es Salaam has been found to be predominantly expanding in an unorganised manner. Other factors include a reluctance of local and central government planning institutions to include the sector in land use plans. The emerging urban agricultural land use pattern, by and large, indicates a mismatch with the widely cherished planning norms, standards and land market[62]. Thus, urban land use planning instruments such as zoning and density distribution and principles like equitable provision of basic services in urban land development can be checked for improving urban land governance.

The effects of urbanisation processes observed in the three cases include encroachments of periurban land areas for housing and other social economic activities. The processes accompanied with expansion of the city boundary, which engulfs periurban settlements. The process of expansion of the city boundaries is resulting in periurban settlements coming within the city's "*band of influence*". This is increasing interaction of residents including smallholder farmers' access to the city economy, in terms of capital outsourcing from relatives and friends. Similarly, it helps the provision of labour and exchange of goods and services. Equally, it triggers the transformation of the villages, from rural in character to periurban character. This indicates the rationale of rural-urban symbiotic relations existing between Dar Es Salaam and its hinterlands discussed (Map 4.1; Chapter five through to Chapter nine).

The symbiotic relations existing in nature observed to be economically viable in terms of investment attractions including housing development and opening up of social services. Principally, urban expansion lowers the amount of land potential for periurban agriculture. The reduction of land for this sector intensifies poverty of smallholder farmers who depend on it as a

[62] *The land market was observed to influence land allocations and resident choices and is therefore an important factor in urban agriculture integration in and use planning practise.*

livelihood strategy as the case shows. This suggests that immediately after land declaration, deciding how to accommodate the urban poor involved in urban agriculture livelihood is important.

The process of land declaration[63] and zoning[64] needs to be transparent and involve different actors with interest in land property development. The involvement of actors in land declaration and subsequently, decision making, preparation, implementation and monitoring ensures project sustainability as the case of Ubungo Darajani shows. Otherwise, the non-involvement of these actors may lead to difficulties in institutionalising, coordinating and controlling urban agriculture practice as well as ensuring monitoring and evaluation of land use plans. It was observed that conflict arising from landholders, fragmented types of cadastral survey, prohibitive costs and increased housing densification in both Chang'ombe 'A'and Goba are the key features of ineffective land use planning. In addition, presence of land use conflicts and housing density may result in decreased food production. This is affecting residents' nutrition levels and subsequently labours productivity within the settlement and the city as a whole.

8.3 Urban agriculture: A livelihood strategy for food security and poverty reduction

Different forms of urban agriculture persist in the City of Dar Es Salaam. These include crop farming, animal husbandry, poultry rearing, floriculture and horticulture (Chapter 7). These forms of urban agriculture are providing nutritional food, employment, recreation, leisure and are greening the city. Urban agriculture contributes to poverty reduction and sustainable use of land.

Important factors influencing these forms of urban agriculture include scarcity of land for farming, soaring of food prices, inadequate market for agriculture produce, poor packaging and poor record keeping, inadequate capital and long travel distance to the market. Other factors include absence of technology in wastewater treatment for irrigation and no clear designated areas for farming (Table 8.2). These influencing factors create fear in smallholder farmers of involving in intensive production and others opt to involve in farming to cope with increasing food prices which appears difficult to afford in daily living. Similarly, harassment from the local authorities is a common occurrence. This affects fresh food production and consumption and lowers income levels.

A desire to increase income and to supplement family consumption, nutritional value, income generation, employment alternatives and sign of prestige/hobby were in both settlements mentioned as motivation for actors' involvement in urban agriculture activities. This finding indicates the same as provided by Nugent (2000). 78% of smallholder farmers involving in this activity are poor (i.e. live under 1 USD per day). Likewise, people with high economic integrity involve in livestock keeping and poultry husbandry. The former are the disadvantaged group in which less labour is required, while the later requires intensive care, labour payment and treatment, which for the poor is difficult to afford. Urban agriculture tends to supplement incomes of unemployed or under-employed men and women. For example, 68% of respondents i.e. smallholder farmers are involving in other social economic activities in their settlements to supplement the produce (Chapter five). The hot climate, the seasonality of the activity depending on rainfall and water from river streams seems to affect the production in the three study settlements.

---

[63] *Refers to announcement statement by the government that should be published in newspapers and in radio media according to land development policy and legislations requirement to ensure information flows and communication to landholders and be prepared for subsequent land use planning. In Tanzania, Town and Country Planning Act of 1956 revised in 1961, Land Act of 1999, Land use Planning Act of 2006 and Urban Planning Act of 2006 applies.*

[64] *This includes demarcation of plots based on the use function, density, planning standards and setting conditions for development according to Country land development policies and legislations in place as mentioned.*

8.4 Legal and policy environment

The agriculture policy[65] environment in Tanzania is earmarked by a common dichotomy between urban and rural development administration. It leaves little scope for acknowledging the specific characteristics and needs of agriculture implementation in urban areas. Agricultural policies and programmes are primarily designed for rural areas, and are therefore not always compatible with the needs of urban agriculture. To bridge this gap, there are opportunities for linking activities and programmes in respect to land development including land use planning and National development programmes. For example, conducting workshops with smallholder farmers, linking with researchers, extension officers and policy makers having the capacity to affect agriculture is crucial. This therefore calls for involvement of different stakeholders and policy enforcement to effect urban development programmes as supported in legal and policy documents in the Country (Table 8.1). This helps to create awareness among different stakeholders and therefore meets the interests of smallholder farmers and other land developers. Table 8.1 shows how policy and legal documents integrate urban agriculture in the country and summarises practises.

Table 8.1 Policy and legal setting and how integrated urban agriculture

Main legal and policy instrument for Land use Planning	Section	How it integrates or exclude urban agriculture in summary	Practise
Town and Country Planning Act of 1956 revised in 1961	Use class P	Restrict urban agriculture and state that requires special treatment	Less adhered by practicians
Land Act of 1999 No. 4	sect 56-60	Encourage community involvement in spatial land use planning through land regularisation	Local community appears are not aware if urban agriculture can be integrated in land use plans once initiate the process Planners do not inform local communities on the need for putting urban agriculture as their priority aspect
	Sect. 9 part (a)-v	The Act gives power to this authority to allocate land for urban farming	Recognition of urban agriculture The Act seem be poorly interpreted and enforced by urban planners and managers in land use planning practise
	60 (1) and (2)	provides that the implementation to be responsible to the commissioner, urban authority/village authority	This shows the room for landholders' involvement is not sufficiently provided
	The Act stipulates the need to offer short-term lease Section 23(3) for 1 year; (Sect 23 (2)), 5 years (Sect 83 (2)) and to 21 years (Sect 83 (1)).	The 5 to 21 years can be leases with condition for future development and pays rent and can be offered verbally or unwritten to people who want that land.	Enhance it temporally perceptions to urban planners and therefore urban agriculture exclusion in land use planning processes increase in practise Smallholder farmers rights in holding land is by paying land tax and receiving fair compensation to move outwards the city once expansion and declaration of the planning areas ripe for urban development pronounced by planning authority

[65] *For example the National Strategy for Growth and Poverty Reduction of 2005/2010 states the need for improving agriculture and does not specifically cite urban agriculture as a strategy for poverty reduction. Discussion with policy makers pointed that this is because they can be specifically for every form of urban agriculture and acknowledge its contribution to urban livelihoods improvement. In practise its implementation becomes difficult as the smallholder farmers in the three settlements studied shows and therefore enhances its marginalisation.*

Main legal and policy instrument for Land use Planning	Section	How it integrates or exclude urban agriculture in summary	Practise
The land Regulations of 2001, Subsidiary legislation No. 16	Part two, Sect 4 b and 9b	-Provide procedures for applying and allocation of land for urban farming -Ward Councillor included in land allocation committee for farming	The policy set up assumes the role of local community is presented by the two councilors No one reported applied for this land in the three municipalities, which indicates poor awareness of this policy section
Land Use Planning Act of 2006	Sect.29(1) a	The Act recognises the potential of urban agriculture and its inclusion in land use plans	The legislature shows the good will of the government towards improving food security. Poor enforcement of the policy exist
Urban Planning Act of 2006	Sect.9 (2)	The purpose of a general planning scheme shall be to improve the land and provide for the proper physical development of such land, and to secure suitable provision for agriculture among other purposes.	Land zones for urban agriculture in General planning schemes mostly in periurban areas are changing rapidly to other uses and engulf agriculture land. This appears creating conflicts of uses once the residents struggle to adopt to the urban life. The Goba case shows the resistance of the local communities once their area declared as planning area and the becomes a disincentive to urban planners and managers in cities
	Sect. 15 (8)	A landholder who wishes to have a detailed planning scheme relating to his land prepared or amended may, in such manner as may be prescribed, apply in writing to the planning authority.	Smallholder farmers are uncertain if the proposed land for urban agriculture in land use can be approved by the local authority Procedure for applying land for urban agriculture hardly known to smallholder farmers in the city
	Sect.28 (f)	Subject to the provisions of this Act, each of the planning authority shall have power to-reserve and maintain all land planned for urban agriculture, urban forests and green belts, open spaces and other purposes in accordance with approved planning schemes.	Land reserved in the city for agriculture in the Master plans have been illegally encroached due to inadequate land development control and coordination
	Sect.45 (333)	States that damage that is directly attributable to the revocation or modification of the land use plan, that person shall be paid compensation by the planning authority	Fair compensation to be paid to affected residents which is hardly done by local authorities in collaboration with the Government (See the case of Goba)
Human Settlement Development Policy of 2000	Sec 4.3.7	recognises existence of urban agriculture and its potentials for income, employment and source of food supply to urban dwellers at affordable prices	No designated areas for its implementation
Building Regulation of 1930 revised in (1989)	Sec.2.1.5	Restrict dealing with all animal and vegetable matter unless to the satisfaction of the authority	The restrictions do not provide alternative as the result the farming continues to be dominant in the city.

Table 8.1 shows that the policy and legal setting in Tanzania surely recognises and has institutionalised urban agriculture. Principally, enforcement of the same is not adhered in practice, which calls for urban planners and managers to rethink strategies for its implementation and enforcement. The participatory planning framework developed may help (Figure 10.1).

Urban planning professionals in practise appears using a traditional master plan approach stipulated under Cap 378 in urban land use planning processes, which seems to be rigid and inflexible to changed circumstances in urban areas. Principally, the Act restricts urban agriculture. For example the legislation requires the sector to have special treatment, but this special treatment policy section seems to be silent in showing what is required. Similarly, interpretations of the legal documents and statements in this respect are constraints toward integrating urban agriculture land use in the city. One could argue this special treatment may be to designate land and to put conditions on its treatment for effective implementation. The current philosophy in planning to put restrictions on treatment may cause one to question the fate of future urban food security and nutrition of the city of Dar Es Salaam. In holistic thinking, the implementation of urban agriculture requires heavy investment in policy awareness creation, land use planning and balancing regulation and urban safety issues to meet voices of different stakeholders (See also 8.14). This will help to maintain order and to recognise its potentials in the city land development process in Dar Es Salaam.

Despite good-intentions in policy and legislations intentions to ensure the community's involvement in land use planning, there still exists a vacuum regarding its operation at the grass-root level. For example, under the land regularization scheme as per Land Act of 1999, the power to determine whether or not to declare the regularization scheme and its implementation falls under the Minister for lands. The Minister is also empowered to delegate functions to the Commissioner for Lands for the scheme execution. However, the substantive involvement of private sectors, and popular sector institutions to initiate and implement seems not to be emphasised in regularization process. Thus, in one way the Act, places smallholder farmers and their local authorities including village council who may want to formalise their land in a difficult position to directly and promptly intervene in an area, which has to be upgraded through land regularisation. The situation points out the need to decentralise land regularisation (i.e. land use planning) powers from central to local government, and to give the local community the power to initiate, implement and monitor land use planning outputs. With this respect, local authority and central government may wish to facilitate in terms of expertise, resources and plan endorsement as well as in implementation and monitoring modalities. This calls for a private public partnership in improving urban land governance as the Ubungo Darajani case indicates.

8.5 Social capital ties and linkages

During the interactive fieldwork that was done in three phases, the study identified a series of linkages and key issues that could be undertaken to improve urban land governance through integrating urban agriculture in spatial land use planning systems. In general, the level of linkages between the potential stakeholders in spatial land use planning and urban agriculture production is essential in a sustainable use of resources (i.e. social capital). On the contrary, increasing awareness from one actor to different stakeholders about the existence of each other and to adopt a language of communication recognized among all stakeholders is important during this study for improving urban land governance as discussed below:

8.5.1 Smallholder farmers' household assets

Both human and physical resources are existing household assets in the study settlements. Physical resources include availability of land and water resources. Others include houses, seeds and

livestock, which were identified as assets that help to improve the livelihoods of the urban poor. Likewise, human and financial resources including labour in agriculture activities, fund mobilization and volunteerism habits in preparing and implementing land use planning outputs were assets for the community success. These capital resources play a great role in improving urban agriculture and developing settlements in terms of housing construction. Extent and availability of these assets differ from one settlement to another as discussed in chapter five to seven.

The housing assets existing in the three cases enable landholders to increase their enumeration in terms of income. Through house renting, income increases among stakeholders involved in urban agriculture activities. The returns from housing rent are used for various household activities including farming to sustain the family social affairs. This shows the importance of social capital accumulation. In addition, farmers appear to have a rather weak communication with the public extension service. It seems that the public extension offers are shifting to rural area and leaving a vacuum of service in urban areas. The study showed that the remaining extension officers in the city expect farmers to take their own initiative in communication and exchange information with them. This finding is an obstacle resulting in poor linkage formation and therefore led to difficulties in coordinating and promoting urban agriculture in the city.

8.5.2 Community assets

Some investments have so far been made in the three study settlements. These include multi-million Tanzanian shillings worth of vertical and horizontal residential building construction (Plate 5.6). Others include agricultural production, commercial activities and other micro-economic activities (Chapter five). The available investments are however still too few to foster rapid economic development of the areas and much has to be done to attract investments in these settlements. Urban agriculture forms formidable investments. In connection to agriculture production where at least every household uses agriculture products each day, land availability and management is important in maintaining this investment. Land as a community asset therefore provides potential livelihoods enabling residents living in the case study settlement and the city. A main finding was long distance to market areas facing smallholder farmers. This suggests a need for urgent design of new market areas in periurban zones of the city of Dar Es Salaam to serve them. To avoid institutional conflicts which may occur over land use, deregistration of village land after declaration is vital in the city of Dar Es Salaam for enhancing this community asset.

8.5.3 Smallholder farmers and state relations

Collaboration is about linkages and ensuring that all stakeholders perceive themselves as part of one group and not as outsiders facing ‘the others’. Inadequate linkages and flow of information between smallholder farmers, the Local Authority, and the Ministry responsible for Local Government who endorse and approve policies and by-laws, and who may have a real functional mandate in coordinating and controlling urban agriculture livelihoods is common (Figure 7.4). Likewise, Ward Councillors who are political representatives of landholders including smallholder farmers are hardly visiting smallholder farmers to understand their problems. It was noted that even the Ward Councillors’ decisions in practise are based on personal vested interest[66] rather than solving technical and smallholder farmers’ needs. Politics were also observed in decision making to interfere in spatial land use planning, land allocation and delivery systems in the study settlements, the city and the country as a whole. One smallholder farmer in Chang’ombe ‘A’ remarked:

[66] *One smallholder farmer during fieldwork survey in Goba remarked that, ‘…these politicians including the ward councillor only come back and listen us during an election, and after the election we hardly see them’. This shows politicians only visit their residents when they are looking for votes.*

"…if the person is noted to belong to the opposing party, even if he presents the issue and that issue looks genuine for settlement development the issue is hardly taken into account".

The statement principally shows that policy making process is influenced by politics in land use planning. Similarly, smallholder farmers view the government (both central and local) as neglecting them as their needs are not taken into account. This appears discouraging smallholder farmers from considering farming seriously as employment rather than as a temporary activity. No one wants to address this issue in public. This is creating an unfriendly environment between the two particularly when you consider food insecurity, employment and urban poverty in the development processes. Thus, linking politicians, government and private institutions through public/private partnership in land use development is rational in the case study areas and in the city as a whole for improving urban land governance in spatial land use planning processes (Figure 10.1; 10.2).

8.5.4 Involvement

The concept of community involvement in planning is highly insisted upon in country urban planning and land management policy, programmes and legal documents. The changing of urban planning approaches from master plan and structure plan (i.e. unconventional approaches) to more inclusion of actors (i.e. conventional approaches) is one of the strategies to ensure involvement. The later includes land regularisation, which earmarks urban planning transition approaches towards sustainability through actors' involvement. The case study shows that the involvement of landholders including smallholder farmers in land use planning is critical in integrating urban agriculture in urban planning processes. Likewise, the case shows lack of review of the 1978 Dar Es Salaam Master Plan has led to increased unorganised urban farming in the city. The review may be important for improving land and including urban agriculture through negotiations with actors and experts in the stages involved in land use planning practise.

8.5.5 Institutional linkages

The dissemination of the urban land use planning plan to Ward and Village level helps to create potential institutional linkages in output implementation. It can be a strategy for resource mobilization and assuring landholders efforts in land management as the Ubungo Darajani case shows. With these respects, urban planners are the main link between policy makers, researchers and extension services, who can help to promote the sector. In order to create the sustainable linkage they must strive to understand the needs of farmers. For example, they include main issues of marketing and input management (water and nutrient recycling issues) in the design and planning of urban agriculture. They are an important link among the non-farming stakeholders in city growth and development processes. Developing a framework for the integration of agriculture in urban areas by developing rules and guidelines regulating the activity is essential.

In spatial land use planning practise, the dissemination of the output at local level was observed to be difficult. This is caused by country policies, laws, regulations and orders, which restrict its dissemination at the mentioned levels. One could wonder how the local communities that involve in preparation and contribute both labour and funds to plan preparation and implementation have no mandate to have final output. This suggests the need to change land use planning output dissemination modalities and reduce cost[67] potential for promoting land use planning processes and output implementation at the local level. Making clear the cost of involving in spatial land use planning processes and cadastral surveys open to the local community and other interested stakeholders interested in land development is critical. This helps to reduce corruption and conflict.

[67] *The cost of one sheet of Town Planning Drawing is TSh. 5000/= in February, 2006 equal to 5 U$ for A1 paper size, which looks difficult for urban residents to purchase as they live below 1 U$ per day.*

The interviews held with Central Government line Ministry officials show a missing link in terms of coordinating and controlling urban agriculture in the city. For example, there are no proper institutions with such direct responsibility for coordinating and controlling urban agriculture. The Ministry responsible for agriculture is direct dealing with promotion of rural agriculture, its management and improvement. This dichotomy increases disparity between institutions in understanding who is responsible for its coordination and control (Figure 7.4; Table 7.6). Therefore institutional collaboration and assigning roles in land development activities may be important for the government and other stakeholders in order to promote urban agriculture in the city.

The existence of department conflicts and a lack of responsible institutions to coordinate and control agriculture land use at municipal level, affects smallholder farmers in terms of training and extension services. The effects include evacuation of their land to periurban areas, environmental degradation and food insecurity. The situation calls for more interventions to improve urban land governance. In addition, the government, planners and other urban managers should know that not all urban dwellers are able to buy food from markets. These stakeholders can with the production and implementation of urban agriculture in the city. This requires participatory planning guidelines that meet the interests of different stakeholders in the city (Figure 10.1).

Site location and analysis are important for instituting urban agriculture in the urban setting. One could wonder what is happening to urban planners in our local authorities who among others are responsible for coordinating and carrying out site analysis. The case study settlement shows that the site analysis, housing development, construction, building and planning consent belongs to the Engineering department. The interference in these functions by urban planners in land development process appeared to be difficult. In reality, urban planners should be advising and working with engineers to determine suitable sites for urban agriculture and other land use functions. This is hardly done in the municipalities this is. This also indicated inadequate institutional collaboration, which needs to be strengthened to improve urban land governance.

Linkages with other actors of the public and policy making arena are made only through the political representative-Ward councillor who represents them in meetings. In other institutions such as researchers and training institutions, linkages are non-existent. Researchers expect to build this link via the extension service; however a link between extension service and researchers wasn't identified either. Researchers stress the need to develop upwards and downwards information flows from farmers to researchers. At the moment, farmers are unaware of the various institutions. However, presence of multiple livelihoods conducted by smallholder farmers is common to increase their income. This shows the importance of livelihood diversifications to foster agriculture based livelihoods or the poor.

Nevertheless, there are poor linkages of utility agencies and central and local authorities in terms of coordinating and controlling infrastructure service provision. It was noted that water, road and electricity supply infrastructure does not follow the spatial land use plans output, which is the sole instrument to ensure such provision. One wonders how they provide such services without any planning consent. In this respect, it was observed that although the spatial land use planning outputs are disseminated to them, what matters to them most is the demand of service in a locality where they can make profit. It is in this regards that urban agriculture, which needs more water, implies increasing their running costs and therefore is not a profitable project. This mind set needs to be removed through meetings and workshops where smallholder farmers can express their ideas. However, consultations with these stakeholders and proper enforcement of land use plans are crucial for sustainable urban development.

8.5.6 Role of planning institutions and power relations in practise

Power for policy making, initiation, declaration, acquisition, control and land use change for spatial land use planning belongs to the central government. Strong facts are needed to convince the government to address and promote urban agriculture. Its financial returns, food security, health aspects, environmental sustainability and potential to green the city are facts that could convince the government to make urban agriculture priority. For example, the country is implementing its strategy for poverty reduction of 2005; urban agriculture is not included in this important development vision document. The author is not of the view that community needs should overstate the country policy and legal setting, but defining critical roles of each actor, conduct monitoring, empowering local community to determine their development path and linking the legal setting to the reality is important. This helps break through the theory and practice gap and meet the community needs where the policy and legislation can change. The Policy and Acts are there to change under real challenges in the development process. It is only through addressing the issue that affects the local community and putting in place its importance in national development, that it can be listened to and taken into account rationally. Otherwise, subjective decision making will likely occur. To achieve this takes time and dedication from planners and other stakeholders.

8.5.7 Financial mobilisation

Financial mobilisation for implementing land use plans forms a remarkable need for involving the local community in their settlements to upgrade and plan their neighbourhoods. The Ubungo Darajani case shows the power of local community resource mobilisation in improving urban land governance (Chapter six) through involvement in land regularisation processes. The case of Goba landholders contributed funds to find lawyers when the government was implementing the land use plans without involving them. One smallholder farmer remarked:

> *"…we contributed funds meriting TSh. 300,000/= (i.e 240 U$) to fetch the lawyer to assist in interpreting the land Law towards understanding what is our right and what belongs to the government. It was in this base where we understood our land rights and our right in involvement in land use plan making, making alternative plans and rejecting plans".*

The statement indicates how different actors including the Lawyers and UCLAS as consultants help enable landholders to fight for their land rights in land use planning processes. The two examples show the willingness of landholders in their settlement towards improving their settlements. This shows the power of local communities when they are facing the same felt problems. The government may consider this readiness to improve the urban settlements and include urban agriculture within urban plans where possible to exploit this potential.

8.6 Decision making and initiation rights

In line with power of declaration, plan endorsement, approval, conflict resolution and resource mobilization, four levels involved in decision making processes were observed. The first level is the operational level comprised of smallholder farmers, landlords, tenants, civil society, consultants and enterprises. This level is the working class and is susceptible to being affected by various higher level needs. In this level actors involve in land use planning activities but hardly found a smooth run (Chapter five and six). Civil Society helps performing formal day-to-day activities. The second level is the administrative level. This is a level comprised of City and Municipal councils. The city and Municipal councils have their own lawyers that guide the interest of the body in legal aspects. This level is important as it helps the lawyers/Judicial system to put in place a legal framework. The third level is the conflict management level. It is in this level where the District Court and land tribunal system guides the rights of residents. Proper communication with

development partners including donor communities as well as correct information is critical to help and facilitate implementation modalities including financial outsourcing.

The fourth level is the decision making level which involves parliamentary decisions. The executive comprised of Ministries and the Judicial system of the higher court. This level helps regulate and control sectoral activities policy making, endorsement, approval and amendments. In reality there is nothing easy about such a decision making process. It is too bureaucratic and may take a longer time to meet an intended objective once it is initiated (Chapter five). This level deals with conflict resolution. In this respect documents by landholders or any institution that believe the decision was not rational are given to the legal sector (Lawyers), which will provide assistance in proposing institutional and legal frameworks of each sector mentioned in a shared and coordinated manner. Inputs provided by the landholders will provide a vital role in enacting the legal framework, which will be forwarded to the managerial level for conflict resolution.

It was noted that working group structures and representation from other levels is important for rational decision-making. The decision making level (Figure 8.1) requires equal presentation and appropriate information to provide workable mechanisms and meet the stated roles (See 2.6). These functional and obligatory roles appeared to be neither reached, coordinated nor communicated in apt time by the local authorities to development partners and other stakeholders interested in land development. This deteriorates promotion of urban agriculture and other land development activities in the study settlements and the city as a whole.

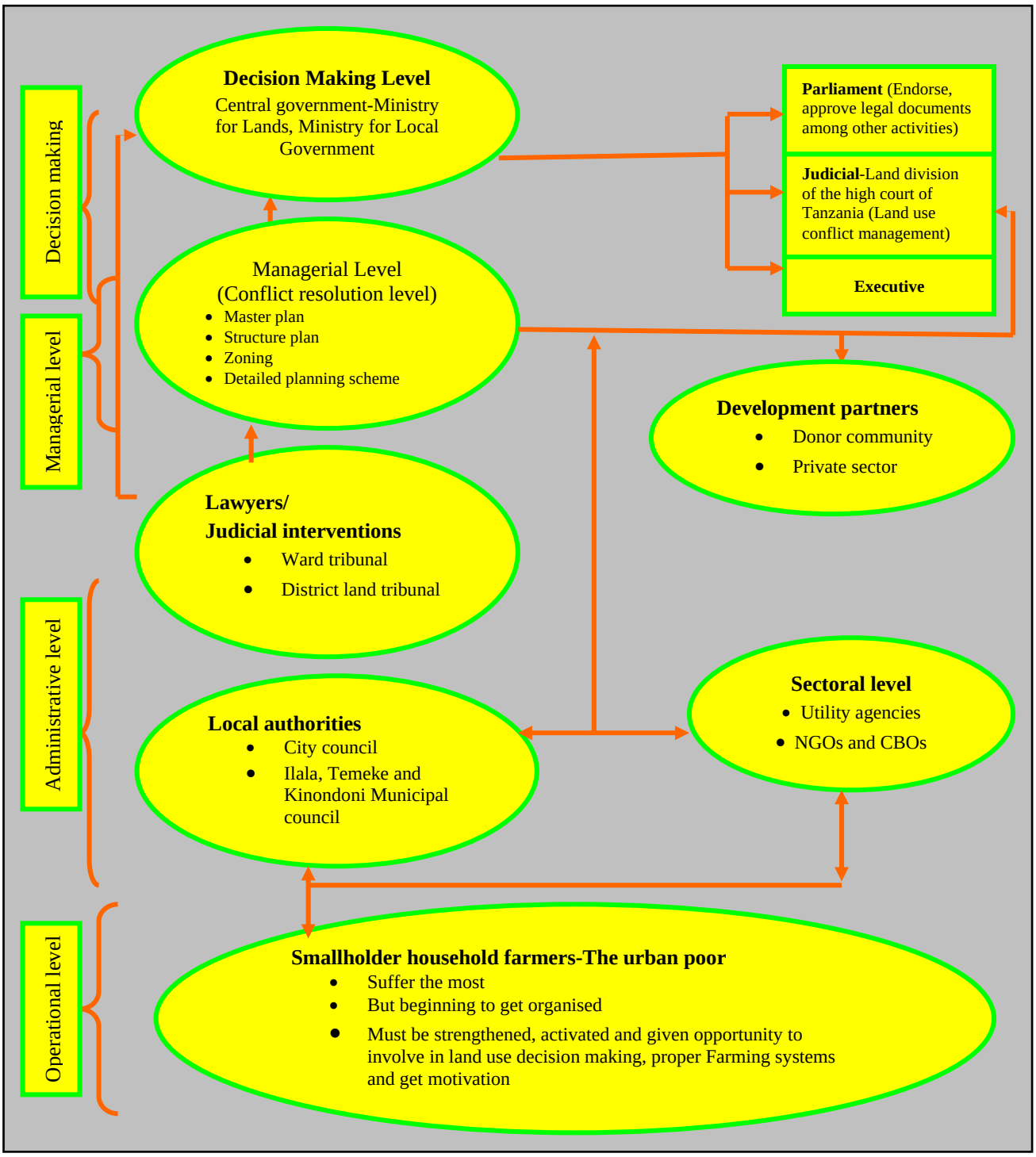


Figure 8.1 Planning institutions and decision making levels.

8.7 Location and forms of urban agriculture

The primary objective of regulatory guidelines should be to ensure public health and safety, and to increase city productivity. In determining areas for the location of residential sites and areas for smallholder farmers, it will therefore be important for public health and services provision agencies to be involved. The problem arising from this is how to provide land in desirable locations (e.g. those near income generating opportunities) on terms and conditions, which the poor can afford and to limit land use conflicts.

Table 8.2 Locations of urban farming activities in the case study areas

Main form of urban agriculture	Ubungo Darajani	Goba	Chang'ombe 'A'	Remarks
Crop farming				
- Maize	Undeveloped plots and along the Kibangu River valley	In plots and off plots	Undeveloped plots	Fertilizers are not used for farming only manure by some smallholder farmers
- Pineapple	In plots	In plots and off plots	In plots	Organic fertilizer from cattle dung and decomposed waste used
- Banana	In plots	In plots and off plots	In plots	Organic fertilizer from cattle dung and decomposed waste used
- Beans	In plots, undeveloped plots and along the valley	In plots and off plots	In plots, undeveloped plots	Organic fertilizer from cattle dung and decomposed waste used
Animal husbandry				
- Cattle	In plots	In plots	In plots	Creates air pollution but its dung is beneficial for farming
- Domestic animal including Dogs and cats	In plots	In plots	In plots	Can be accommodated as used as a defense instrument at homes Need medical care
- Pig husbandry	In plots	In plots	In plots	Creates noise and air pollution which need more care in rearing Potential in periurban land
- Goats	In plots	In plots	In plots	Free range system can be avoided
Poultry keeping				
- Hen	In plots	In plots	In plots	Creates noise and air pollution which need more care in rearing in residential plots
- Pigeon	In plots	In plots	In plots	Most are domestically friendly and used as home decoration
Horticulture (Gardening)	In plots, undeveloped plots and along the river valley, institutional and industrial premises, road and railway strips	In plots and empty space undeveloped and along the river valley	In plots, undeveloped plots, institutional and industrial premises, road and railway strips	Pollution of water affects the valley products In plots and undeveloped plots are preferred as uses deep and tape water for irrigation
Floriculture	In plots, road and railway strips	In plots	In plots, road and railway strips	Most used for selling within and outside the city, no information on international transportation provided
Seedling/tree planting	In plots, road and railway strips	In plots	In plots, road and railway strips	Both fruit and canopy tree are common

Land use planning demarcates and shows future land development direction, projection, functional relationships and infrastructure allocations (Chapter two). Urban agriculture is one of the land uses but traditionally, no areas demarcated for its use (Table 8.2)**.** The non-demarcation of land for urban agriculture is due to policy and legal frameworks, which stipulate it, as a temporary activity. If given land, that land can be occupied for other uses including residential, hotels or industry in the future. This appeared to be caused by non-inclusion of the activity in land use plans and poor enforcement and monitoring of the land use plans, and increased land encroachments. This causes urban agricultures to take place in undesignated land such as infrastructure strips including roads and railway lines, fragile lands along steep slopes, and along the riverbanks. In Tanzania, Dar Es

Salaam in particular, urban agriculture has taken place haphazardly over the past four decades. It is essential that organisation[68] is undertaken.

8.8 Infrastructure improvement

Dar es Salaam city water demand is influenced by pressure on its use and increasing population. The major water sources include Ruvu chini and Juu plants, Mtoni plants and the availability of deep and shallow water grounds in residential neighbourhoods. According to the water utility agency in Dar es Salaam city namely DAWASCO, the water consumption per capita per day is 187 litres in the city. The breakdown of the water system, power interruptions and the poor state of the water system pipes are among critical problems facing the sector. In addition, increased pressure on water use for industry and domestic needs, results from population increase in the city affects agriculture. This results from both the limited sources of water and from climate change, which reduces water levels especially during the summer season. The expanding pressure on water use demands due to increasing population, limits the utility agency to formalise water use for urban agriculture. This restriction has not been adhered to by residents and illegal water connection is common in the case studies, which reduces the amount of water reaching to other parts of the city.

Lack of sanitation facilities including drainage, sewerage system and waste collection points in the three settlements have led to increased dumping of wastes including domestic, industrial, constructional and agricultural in rivers and in open spaces (Plate 8.1). This is caused by poor land use planning, inadequate policy and legal enforcement and poor awareness of urbanities on managing urban land as the study settlements shows. This has degraded the quality of the settlements in terms of increasing air, water and land pollution. Solid waste heaps and domestic water drains towards river lines are common (Figure 5.1; Plate 8.1).

Plate 8.1 Haphazard dumping of solid waste in Ubungo Darajani: Photo, January 2006.

In addition, poor road networks including the presence of potholes limits accessibility of smallholder farmers to market areas. This has resulted in the increasing cost of vegetables in the city as well as reducing farmers income in their farming places. Thus, improvement of infrastructure is critical for the promotion and integration of urban agriculture in urban and periurban settlements of the city of Dar Es Salaam.

[68] *One official respondent from the Ministry responsible for Lands and Human Settlements Development in Tanzania on 11th December, 2006, attested this showing that since the dead Master plan of 1978, no city land development reorganisation had been done and therefore this enhanced haphazard urban farming.*

8.9 Distance to market premises for urban agriculture products

Long distance is a challenge for enabling smallholder farmers to access the markets and other facilities and services. These challenges have caused a cost increase for retailers traveling long distance to buy vegetables in periurban settlements and to residential premises where urban agriculture is practised. Equally, the long distance to the city market (Table 8.3) and to the production premises by farmers and retailers affects vegetable crop price. The trend lowers price to the smallholder farmers while increasing price at the market area, and therefore affects both producers and consumers. Inadequate market information and the hot climate in the city are also affecting perishable vegetable products.

Table 8.3 Distance of smallholder farmers to market premises

Market Case	Kariakoo	Kisutu	Buguruni	Makumbusho	Tandale	Tegeta	Mwenge	Tandika	Temeke Sterio
Goba	10.8	12	12	9	10	3.8	5	18	16
Changombe	12	12.4	3	8	6	17	13	3	2.5
Ubungo Darajani	8	8.4	3	5.7	3.5	8	3	6	5.5

Milk and other livestock by-products are characteristically mainly produced in periurban settlements. The products are mainly consumed in urban areas. Access to inadequate market and proper handling of the vegetable by-products is a critical to enhance the product value. Similarly, hygiene and training to smallholder farmers involving in this type of farming can help reduce health risks associated with the agriculture sector if integrated in urban management principles.

8.10 Land coordination and development control

8.10.1 Access to land

In the three settlements explored, people access land for urban agriculture and other land use function through buying, inheritance and granted right of occupancy. The study showed that 78% of the respondents interviewed are not aware of official procedure requirements for getting land for urban agriculture. This is because they have little contact with government agencies and the English language is used for these policy and legal documents. For example, planning regulations, standards and administrative procedures are published in English while the majority[69] of landholders and tenants cannot read or speak English (92%) in all settlements explored. Only 8% of smallholder farmer respondents could speak and write English. In this regard use of the Swahili language to communicate these procedures would be preferable.

8.10.2 Land allocation modalities

Land allocation is following both formal and informal process in the case study settlements. The formal process involves getting land through local and central government authority allocation. The reality in this process is that it can be achieved if the government has planned land with empty plots where allocation may be done. In Chang'ombe 'A' and Ubungo Darajani, which are more densely populated compared to Goba, land allocation is difficult as people had already occupied the land and invested much in terms of housing construction. The only alternative for having land in these case study areas is through purchasing (informal) from landholders. Kombe (2002:450) contributes the need for land banking in periurban zones where land is available for future planning and land allocation from increasing urban investment. This may help the government acquire land in the

[69] *These include smallholder farmers in the case study explored and the city as a whole.*

periurban zones and ensure sustainable use of land if it is well planned and enforced. This also acts as an informal settlement prevention strategy in rapidly urbanising cities like Dar Es Salaam and other Sub-Saharan Africa cities.

In supporting the foregoing, the author argues that if the government wishes to adopt such arrangement, conditions for developing such land are important rather than exposing the free land market to take place. These conditions can entail ways of building construction and orientation, in plot activities including allowed forms of urban agriculture and others planning principles discussed (Chapter two). Agriculture land in this arrangement appeared can be part of settlement upgrading and livelihood strategy for the poor once the community considers it in their priority setting. This shows the importance of land allocation within designated zones for urban agriculture.

8.10.3 Insecurity of tenure

Due to the system of access to land explained, both statutory and customary tenure systems exist. These tenure systems occur for a number of reasons. In some cases, the original settlements were developed under traditional or customary tenure systems on land which was at the time outside urban administrative boundaries, but was later absorbed within them as the urban areas expanded. At such times, various statutory tenure categories, such as formal granted right of occupancy have been introduced, to which later construction had to conform. The cases of Chang'ombe 'A' and Goba show this. Alternatively, early developments may have changed their tenure status as legislation changed, or regularisation programmes enabled previously informal settlements to become legal as in the case of Ubungo Darajani.

In addition, 6% of smallholder farmer respondents owning land in the three study settlements were observed to have *short-term titles* of 2-21 years offered by Local authority. This limits smallholder farmers' access to financial institutions for credit. For instance one landholder said:

> *"…I have got a title deed, but I have been constrained by the short term nature of title given (i.e. 2 years). Credit institutions refuse to provide a loan arguing that the title has low betterment value".*

This quote shows that even though the residents are aspiring to get titles as a tool for asset betterment, the lease is too short and unattractive to credit institutions. Therefore, there is a need to consider granting a long-term title i.e. 33, 66 and 99 years leasehold to attract financial betterment to smallholder farmers who want to legalise their land towards poverty for community development. Providing a range of tenure options could be the most effective means of enabling the urban poor to improve their living conditions and livelihood opportunities and therefore improve urban land governance. In addition, existence of both customary and granted right of occupancy by having both urban and village administration working together need more intervention including deregistration of the later.

8.10.4 Land use zoning and conditions for change of use

Land use zoning involves allocation of different land use functions. This includes land for urban agriculture, residential, commercial, commercial residential, open space, industrial and institutional uses (Chapter two). Zoning regulation has hardly applied for land demarcation and allocation for different parcels of land in the case study settlements. The zoning regulation observed becomes effective where land under planning is vacant or is fairly developed and where development conditions can be set. Mixed land uses with high-density using zoning is not possible as the case indicated. The available space in periurban settlements of Goba and others found in the city provides potential opportunity of integrating urban agriculture in city setting following increased housing density and mixed land uses in urban proper settlements.

8.10.5 Housing density

Chronological housing development and its impacts in the study settlements were noted (Table 8.4). The main implications of the housing density increase include decreased agriculture in the city, destroy trees and reduced natural vegetation. Therefore aesthetic value is degraded.

Table 8.4 Chronological documentation of housing density in case study areas

Year	Case study area								
	Chang'ombe 'A'			Ubungo Darajani			Goba		
	No.of houses	Housing density	Agric Land	No.of houses	Housing density	Agric land	No.of houses	Housing density	Agric. land
1960-1965	240	1.2	165	12	0.4	19	20	0.3	56
1966-1970	320	1.7	162.8	78	3	16.2	55	0.9	54
1970-1975	820	4.3	138	165	6.3	10.4	146	2.4	51
1976-1980	1470	7.8	112	196	7.5	8.2	254	4.2	48.7
1981-1985	2045	10.9	98	240	9.2	6.1	340	5.6	46.2
1986-1990	3605	19.2	28	297	11.4	3.4	460	7.6	42.1
1991-1995	3820	20.4	19.2	310	11.9	3.1	570	9.5	41.5
1996-2000	4120	22	16.8	348	13.3	2.62	640	10.6	41.9
2001-2005	4196	22.3	17.3	436	16.7	2.80	702	11.7	41.8
2006-2007	4200	22.4	17.45	442	17.0	2.88	720	12.0	42.55

Source: *Key informants Interview-January -April, 2007: National Housing Cooperation, 2007: Aerial photo for Dar es Salaam City, 1992.*

Note: Housing Density=Total housing per given unit area

Table 8.4 shows that in both cases housing density increases occurred from 1970 to 1980. During this period, it was experienced by Villagelisation and broad acre policy (1972), abolition of local governments (1972), Uganda war (1978) and food crisis (1980) in Tanzania. It was during this period that people were constructing their buildings without any building permit from local authorities. In the following years from 1981, it shows that the building constructions have been increasing beyond what urban planning can offer in terms of coordinating and controlling land development. Inadequate human resource and exclusiveness of community involvement in land use planning and its implementation was experienced during this time. Equally, open spaces demarcated for public use were encroached upon for other uses and therefore housing density increased and agriculture land disappears. Identifying available land and population living in particular settlements is among the crucial aspects that may be considered (Table 6.4; Figure 6.6)**.**

The question of equity and balancing nature is of prime importance in improving urban land governance. Restrictions are important in ensuring land use change from one form to another at the expense of the other. Giving alternatives and adding values for the former is rational, for example, changing agriculture land for investing in other land uses such as hotels, residential and its consolidation in a specific site designated in city land development progress. This is the matter of policy enforcement to ensure urban order that accommodates the urban rich and poor. Likewise, it ensures commitment and transparency of actors in decision making processes. This will enable the benefits of all interested groups to be accommodated in urban planning practice. Nevertheless, this reflects the reality of urban agriculture implementation, which is very complex with the theoretical underpinning decisions. We need to enforce through networking and creating links and synergies in spatial land use planning for enhanced urban land governance.

8.10.6 Public open space utilisation

In the planned parts of Goba, Ubungo Darajani and Chang'ombe 'A'where urban land use plans exist, urban agriculture is dominant and it is practiced in plots and offplots. In parts of these settlements, informal settling exists which seems to encroach upon unplanned open spaces, which are zoned as conservation lands or hazardous lands. Development control of the open spaces is hardly done and therefore allows soil and environmental degradation, and increasing land use conflicts. Checking these impacts to avoid future settlement degradation observed rational for sustainable use of land.

8.10.7 Planning standards

The formal land use planning standards and regulations, for example those being used in new formal settlement development, would generally not be appropriate for upgrading many informal settlements. These will impose severe payment burdens on residents, or the building of a particular type of housing which is difficult to afford by smallholder farmers. These farmers would find it very difficult to remain in a settlement upgraded according to conventional regulations. Besides, they fear that they cannot keep up with payments of land property tax and do not have the means to begin building an approved permanent house because of their unsustainable income levels. This is affecting their living standards and livelihood opportunities in the urban areas and shifting to periurban land is common.

Planning standards and regulations interact closely with those for the design and construction of buildings, the provision of infrastructure and access to formal credit and plot size needs. Official standards on plot size are often based on arbitrary assumptions regarding individual family needs, rather than the costs or impact on density levels and urban land market intricate. Given the commercialisation of urban land markets that have accelerated during the last two decades, low densities plots seem to be resulting from large plots subdivisions. Allocating of smaller plots for individual household occupation particularly after plan approval was a strategy adopted.

8.11 Health implication of wastewater

The health risks observed in the study settlements are those related to the use of wastewater resulting in excreta-related infectious diseases. In countries where poor sanitation and hygiene conditions exist and untreated waste water and excreta are widely used in agriculture, intestinal worms pose the most frequently encountered health risk (WHO, 2006:23). Other excreta-related pathogens may also pose health risks, as indicated by high rates of diarrhoea, other infectious diseases, such as typhoid and cholera, and incidence rates of infection with parasitic protozoa and viruses. Thus, precautions are needed once agriculture practise is institutionalised in urban land development setting. For balancing smallholder farmers livelihoods while maintaining the city environment, health and economic returns of urban agriculture sector, training, partnership and involvement of actors in decision making is crucial. Thus, technical assistance might be needed.

8.12 Bureaucratic system involved in land use planning processes

In both cases residents were appeared to have limited power[70] in planning initiations, decision making, endorsement, approval and in dissemination as previously explained. The systems are

[70] *Section 56-60 of Land Act of 1999 gives the Ministry responsible power for land use plan initiation, declaration and implementation. This power is too much and increases bureaucracy in urban planning decision making where development is rapidly beyond urban planning interventions.*

cumbersome and too bureaucratic which discourages implementation once the land use plan has been approved[71].

8.13 Political interest and support

Politicians including the Ward Councilor and Member of Parliament (MP) (the case of Ubungo Darajani) help to encourage the local community to improve their settlement. Welcoming these politicians to chair meetings is important to motivate the local residents to improve their settlement. It is in these forums where their views and problems can be taken into account towards improving urban land governance in the city of Dar es Salaam.

8.14 Voices of different stakeholders on urban agriculture implementation in the city

Understanding the voices of different stakeholders in the case study settlements and the city in general was important. This helps explore existing policy and practical problems in improvement of urban agriculture. It is important to seek inputs from stakeholders on the best way to implement urban agriculture for improved well-being of smallholder farmers. A total of 450 stakeholders were interviewed during this study (Table 4.2). The main problems as voiced by smallholder farmers include:

- Distance to market areas which increases their cost of production and lowers their profit
- Insecurity of land tenure which is enhanced by lack of designated areas for farming
- Lack of subsidies and credit schemes that can facilitate farming due to lack of collateral
- City harassment which increases fear of eviction and restriction of farming in plot areas
- Increased theft of their crops when they are matured
- Inadequate water facilities to enhance their farming activities
- Inadequate extension services within the city
- Poor understanding of policy and legal basis guiding urban land development

Urban planners, city managers and policy makers are aware that the poor do not only practice urban agriculture. Even rich persons and elite groups including professors practise the activity with their own reasons. These reasons include a sign of prestige, fresh food with protein and the knowledge that the food has been grown safely. These stakeholders attested also that they are affected by and also benefit from the urban agriculture sector and therefore its accommodation and organisation are important. The voices presented include:

> *"…Dar es Salaam City has abundant land in periurban zones and its dormitory districts of Mkuranga, Bagamoyo and Kibaha. If land in these area was put into farming and identified farmers to use the land, it will be easy for them to get organised, get credit and therefore influence decision making processes in terms of improving their social well-being (Said the Director NEMC-Research and Publication)".*

> *"…we can tolerate gardening and floriculture farming in the urban setting, as they do not require much land for a person to get involved in. This is important in plots and off plots and not cropping of maize and other high raised crops. This can cause malaria, mice and hideout for criminal. They also create fear especially during harvesting where raping is experienced in the city (Said the Director of Human Settlement Development-Ministry responsible for Lands and Human Settlements Developments)".*

[71] *Conversation with Director of Human settlements development from the Ministry responsible for land shows that currently the land use plans took 3 to 4 months to be approved. He confessed that it has taken a long time. He argues that the major reason was inadequate human resource, inspection of the plans and inadequate funds. He shows that the Ministry is planning to have regional bodies based on zones which will be used for endorsement and approval of the land use plans and subsequent land regularising related matter to enable equal access to land and granting right of occupancy to majority of landholders.*

"…in areas such as Msasani and Masaki (i.e. low plot density areas), gardening is possible and not cropping. In areas such as Manzese, Chang'ombe 'A' (i.e high density plots), this is not allowed. Unless you tell us what best form of urban agriculture can be accommodated in such mixed and high density plots where even sanitation facilities are problem (Said the Director Ministry responsible for Local Government)"

"…we cannot allow urban farming such as animal husbandry including pigs, cattle and goats are in city setting. We need to accommodate only domestic animals and they must be kept in safe way so as not to endanger people (Said the Director Ministry of Health)".

"…it adds pressure on use of water infrastructure, cost of city administration and most food for Dar es Salaam comes from the upcountry regions and there is no need for promoting urban agriculture in urban areas where demand for construction industry is high. Likewise, its land property tax is low compared with other land uses and therefore its income is negligible to the city economy. Similarly, pollution, noise and other environmental cost will be added if we accept the activity in the urban setting (The quote was said by councillors, planners and residents respondents during the fieldwork interview and who are not involving in urban agriculture).

Reconciling these stakeholders' voices requires investment in public awareness and training to smallholder farmers, urban planners and other stakeholders in order to understand each other. Although the policy accepts urban agriculture, in practise it is difficult to be implemented as the government officials and policy makers are hesitant about its implementation to meet smallholder farmers voices (See recommendation). Finding modalities for its implementation is important as the magnitude and extent of smallholder farmers in the city is increasing. For example, urban agriculture employment occupies 55%, 36% and 18% of the total population in Goba, Ubungo Darajani and Chang'ombe 'A' settlements respectively. Among the total, 63% are women and the rest are men. These numbers are expected to expand due to the countries slow economic growth and increased inflation rate[72] which adds to the burden of low income people to afford basic needs.

A 67% of respondents interviewed in the city shows that need a city environment that is pleasing, beautiful and with green scenery. Tree planting and conservation, and continuous cropping are important for temperature regulation and other social and economic benefits explained previously. These trees and crops help to absorb carbon dioxide, which reduces the global warming effect. In doing so, this form of urban farming needs to be continuous to ensure city comfort and beautification. This implies that urban agriculture activity needs to be a continuous land use implementation process and not a seasonal activity in order to green the city and ensure sustainable use of urban land.

8.15 Reflections

The section contributes different issues and associated factors towards improving urban land governance through urban agriculture integration in spatial land use planning practise. Urban agriculture implementation will continue to face challenges in its practise. Among the challenges demonstrated in this study include the mind set of planners, urban managers and decision makers who do not see and value it the way the smallholder farmers and researchers do. The social subsistence of urban farmers and the economic contribution to income including employment are important. Contributions to nutrition, environmental conservation are also benefits. Planners, urban managers and decision makers think that urban agriculture is less valuable and makes a smaller contribution than rural agriculture. It is the authors' view that small contributions of urban agriculture to the poor sector of the society matters a lot as in future may result crime if no proper

[72] *According to Mwananchi news paper of Tanzania on 24/08/007 quoting the National Bureau of Statistics shows the increase of the country inflation rate from 5.3% in June to 9.6% in August, 2007. This increased the cost of living for the urban poor who now are turning to practising urban agriculture as an alternative livelihood strategy in urban areas. This rate is expected to increase in the future if proper measures are not taken to redress the challenge.*

production systems, forms and scale are less considered in urban planning. Thus, mainstreaming the sector in a proper framework in urban planning and management for apt city growth and development is rational.

In addition, the chapter contributes various issues hindering the integration of urban agriculture in spatial land use planning processes. These include but are not limited to conflicting land use, in which expansion of urban areas engulf agricultural land and therefore loss of urban livelihoods is increased. Similarly, increased prices of land, land scarcity, land subdivision, fear of eviction and conflicts resulting from uncontrolled land use development are common in the city.

Apart from the above, both granted right of occupancy and customary land ownership systems are acting in parallel in the city and in an uncoordinated manner. Likewise, exclusion of urban agriculture land use plans and inadequate water infrastructure provision, fear of health impacts, weak institutional coordination and legal enforcement are other challenges. Besides decision making, inadequate access to resources including information, communication, funds and lands are other constraining factors. This suggests that in Dar Es Salaam, where population is expected to expand, a clear spatial land use planning and management strategy is required to overcome these challenges. The next chapter continues in this direction by showing implications of these findings and possible options for actions for improved urban land governance in the city.

8.16 Theoretical framework and relevance

Periurban typology framework

Iaquinta and Drescher (2000) show that in understanding the Periurban typology framework, elements for consideration include place location, geographical setting, demographic setting, heterogeneity, and institutional contexts and linkages. In well developed housing markets such as that of Europe and the United States of America, where urbanisation trends are well coordinated and controlled, it is noted that;

- Urban sprawl is coordinated and effectively monitored
- Land use plans are prepared and enforcement is achieved
- Procedures for housing development is strictly coordinated and controlled
- Demographic transitions are monitored
- There is strong institutional linkages in housing delivery and construction systems
- Infrastructure needs and provisions are equally distributed in residential neighbourhoods and residents have rights to deny services from the government

This study of Dar Es Salaam, paint a different picture:

- Urban expansion takes place with minimal awareness of the residents' rights, low compensation of landholders properties to the market value and therefore loss of livelihoods to majority of urban poor in the city and therefore uncoordinated
- Occurrence of class of people living in different locations of the city. The study settlements considered to be of low and mid income people, where plot density is high. In areas such as Orsterbay and Masaki more dispersed patterns of houses are common and with low density plots.
- High and medium income settlement localities inadequately receive the infrastructure and services
- People involved in urban agriculture started farming in their rural areas and therefore adopted the same in the city.
- The study notes the existence of strong symbiotic relations between urban and periurban settlement and periurban and rural settings in the city hinterlands. The relationship exists in

terms of exchange of goods, habitats, labour mobility and accessing cheap land in periurban areas for production purposes.

- The heterogeneity of tribe composition exists in both settlement areas. However, the typology can be distinguished through the colonial planning, which divided the City into classes. Areas such as Msasani, Masaki and Orsterbay are places in Kinondoni Municipality where high-income people live, but still heterogeneous mixture of institutional setting is common. This differs with existence of the detailed classification provided by Iaquinta and Drescher, 2001 who observed six types previously explained. This is seen in high-developed countries such as Germany where urbanisation is highly controlled, and policy and legal enforcement are adhered. Therefore its applicability in Dar Es Salaam and other Sub-Saharan Africa countries is partially relevant.
- Smallholder farmers in the city of Dar Es Salaam are not organised, which limits them in presenting their problems and information to the required planning institutions. Smallholder farmers live in fear because they assume are involving in an illegal activity, and therefore they are limited in presenting their problems to the planning institutions. Equally, the top down approach in land use planning policy and decision making observed common. This limits the rationale of social capital in enhancing social well-being of the grassroots actors i.e. smallholder farmers. Nevertheless bureaucratic procedure in land use planning, allocation, surveying, acquisition and subsequent registration limits residents from getting their financial and social benefits. In addition, the Ubungo Darajani case funds mobilization and individual attempts in Goba and Chang'ombe 'A' to involve in land use planning, cadastral survey and some granted rights of occupancy show the potential of social capital resource mobilization. With landholders intention to involve in land use planning, government supports need to involve in assisting and facilitating. The case shows that this can help plan for settlements and to form partnerships.

Location theory

Urban and periurban agriculture pose a number of problems that stem from their close proximity to densely populated areas, with animals and humans sharing the same air, water, and soil resources. Inappropriate use of chemicals and solid and liquid wastes in farming can contaminate food, soil, and water resources used for drinking and food processing if not properly planned and managed. Raising livestock, pigs, and poultry in and close to residential premises increases air and noise pollution and raises health risks of residents. While many of the problems could be solved through information and extension assistance, local city authorities have often restricted smallholder farmers from these practices. Land allocation is needed to accommodate the sector in urban setting.

In addition, different locations have different capacities in paying the emerging housing rent prices. The pattern of land use will reflect the competition between alternative uses for sites in the market. Likewise, the greatest demand will be for those sites having the greatest relative advantages. This in turn causes the intensive development of the site. The land uses that are most intensive used will be able to pay the highest price, resulting in decreasing land for urban farming. It is in this regard that urban agriculture zones need to be established, land demarcated and allocated according to the written norms guiding land development in cities. This remains among the sole function in the city. Factors to consider include transportation networks, sources and places of income and employment (e.g., market places), institutions and worship places, informal settling, density and topography. This shows the importance of location theoretical framework underpinnings when exploring the impacts of accessibility (Chapter three) for land use allocation and delivery in the city. Besides, the two theories discussed in this context enhance the evolving knowledge debate in urban development processes.

PART IV: STUDY RESULTS IMPLICATIONS, UNRESOLVED ISSUES, RECOMMENDATIONS AND CONCLUSIONS

CHAPTER NINE: POLICY AND PLANNING IMPLICATIONS AND UNRESOLVED ISSUES

9.1 Introduction

The previous chapters discussed how to improve urban land governance with special emphasis on land use planning and urban agriculture integration. Even though important as a livelihood strategy, urban agriculture is illegal in many African cities due to bye-laws from colonial days prohibiting agricultural activities in cities because of the public perception that agriculture belongs to rural areas. Nowadays, most governments and local authorities have recognized the importance of urban farming and begun to integrate and support food production in city development plans.

The study helps identify land use planning theoretical and practical weaknesses, strengths and opportunities in which urban agriculture can be integrated for improved food security and enhanced environmental conservation in development processes. The results from the study settlements, which are context specific, demonstrated this. It highlighted not only the land use planning processes, and structures and outcome implementation made by different planning institutions, but also the dilemmas of urban agriculture acceptability. It also analysed the positive and negative implications of urban agriculture potential for improving urban land governance systems. Before an attempt is made to find the way forward, we need to raise the question: How can future urban land development policies and institutional structures best enable integration of urban agriculture in land use planning and management in Dar Es Salaam?

The question becomes more significant when it is put in the context of the current rapid urbanization processes, food insecurity, land markets, investment justification, policy changes and sustainable development needs. These require a rapidly growing city like Dar Es Salaam to have important and timely information, strategies, methodology and tools for the management, conservation and assessment of land development. This is important for meeting improved urban land governance objectives. This must involve continuity, land security, resource mobilization, policy and legal instrument enforcement. The author presents a variety of methods and conditions that can be used to highlight the trade-offs and promote sustainable land use planning decision making among diverse users including urban poor for improved urban land governance in Dar Es Salaam city (Figure 10.1; 10.2). The governments of Tanzania and other Saharan Africa Countries may wish to replicate these guidelines in the same context.

In the conceptual framework it was argued that processes, structures and resources (i.e. social capital) mobilisation can facilitate integration of urban agriculture in spatial land use planning and management practise. This is rational for urban poverty reduction, food insecurity reduction, environmental conservation and improved livelihoods of smallholder farmers involved in urban agriculture in Dar Es Salaam.

Some dilemmas and needs for integrating urban agriculture based livelihoods were clearly discussed (Chapter one). Likewise, planning institutions, their roles and policy and legal structures are elaborated upon (Chapter two). These include human settlement development policies, building codes and regulations, to be applied in planned settlements. The mixture of land uses in the same settlement

increases risks of non-acceptability of urban agriculture in spatial land use planning and management processes. In addition, urban planning approaches and tools including master plans, zoning, detailed land use plans, land regularization and levels of planning and involvement of different stakeholders for effective urban land governance were analysed. Various cases that attempted to integrate urban agriculture were documented and missing gaps were noted and explored. Theoretical, conceptual and methodologies are analysed to contribute to the scientific debate on urbanization process, food insecurity and urban poverty in development processes (Chapter three and four). The empirical findings, synthesis, possible implications and options for land use planning and urban agriculture integration are discussed in the following chapters.

9.2 Implications to policy and urban planning practice

Arising from the above, the implications of the study results are demonstrated. This is followed by discussion on the contributions on the theoretical and conceptual framework in rapidly urbanising cities like Dar Es Salaam in Tanzania. The theoretical discussion analyses various cases and what periurban typology and location theories have to do (i.e. their relevance) with land use planning and urban agriculture in Dar Es Salaam. In specific context, reflections of the three study settlements are discussed. Before the conclusion and recommendations are made, limitations for implementing the findings and unresolved issues for further policy agenda and development interventions are analysed.

9.2.1 Urban food security

In addressing urban poverty the question of food security is important. Food is needed to improve the health of urbanities and to sustain the level of city productivity including labour force. Neglecting urban agriculture contribution based on negative perceptions endangers future urban food security and sustainable urban land development. Likewise, environmental degradation within unorganised settlements will increase health risks and crime due to increased unemployment in the future. Thus, regular checks and balances of food security as a social and economic need in urban development process are essential for improved urban land governance. It is the author's view that all food produced in the city, plays a role in sustaining social and economic safety nets. Therefore it is the inescapable truth that urban agriculture is a vehicle for urban poverty reduction for a majority of residents involved in the sector within the city. This will help redress urbanisation impacts in Sub-Saharan cities in the future.

9.2.2 Human settlements and building regulation policies and legislation

Human settlement development involves increasing housing and other land related investment, which requires proper methods and tools for coordination, assessment and control. In this line it is impossible to separate human settlement development from building regulation, urban investment and need for greening urban areas. Harmonisation of regulations of land use planning practice and needs for improved urban land governance is essential as this section discusses. Essentially, it looks at recognition, decision making processes in initiation, declaration, community involvement, formal policy statements and their implication for urban planning practises. Infrastructure improvements, land use plan review, standards and enforcement of building regulations, all seem to affect urban agriculture integration in urban land governance systems.

Recognition of urban agriculture in urban settings

The National Human Settlement Development Policy (NHSDP) of 2000, Sec 4.3.7 identifies urban agriculture as one of the urban development issues that needs to be managed for reduced urban poverty. This policy recognises existence of urban agriculture and its negative and positive consequences (Chapter two). In understanding these consequences, the policy states that the government shall:

> *"…designate special areas within planning areas whereby people will be granted legal rights to engage themselves in agricultural activities; And will continue to regulate and research on the conduct of urban agriculture and will ensure that it does not disrupt planned urban development, review existing laws to facilitate planned urban agriculture and lastly will facilitate the construction of appropriate infrastructure to mitigate/prevent land degradation, water pollution, and health and safety hazards in areas where agriculture is permitted".*

City Local Authorities in Dar Es Salaam have included urban agriculture land use as one of the issues to be promoted in the city development agenda since 1992. But in practise eviction of smallholder farmers involving in the activity is common. This is due to lack of land use plans or general planning schemes in the city. It was noted that in the three study settlements the conditions of not growing crops over one metre tall set by Municipal authorities is known by a majority of smallholder farmers. But people to monitor and conduct evaluations of this action for effective implementation are lacking. This questions the reality of urban agriculture implementation. In addition, telling farmers where to cultivate is rather top-down and not participative. Key is the institutionalization of urban farmers in urban agriculture associations as has worked in Germany, but this involves work.

Supporting the above, the non-existence of extension services for smallholder farmers in the city is apparent. Similarly, long distances to market premises and insecurity of land tenure are some challenges observed. In periurban areas due to insecurity of land tenure, intensive farming, which disregards soil conservation is at a high level. Likewise, inadequate water infrastructure can also cause negative health impacts, which need to be solved in both urban and periurban settlements. The mixture of industrial[73] and domestic residential waste into river channels without treatment creates disastrous health and environmental conditions, necessitating an urgent requirement for regulation. Wastewater treatment and use for irrigation is a viable option to be introduced to enable effective sector implementation and to adhere to policy.

Impact of urbanisation on spatial land development

The boundary expansion practice was observed to create administrative conflicts between urban authorities and village governments over land rights and use. Engulfing village land used for urban agriculture is a common practice in the city. Residents in Goba Village, a periurban settlement do not benefit from some urban services although they are required to pay urban levies and taxes. For example, the settlements have poor roads and water infrastructure. The NHSDP recognises the effects of urban expansion, which goes with township boundary expansion through land declaration and acquisition. It shows that urban authorities have tended to expand the areas under their jurisdiction in

---

[73] *The City Authority Sewerage and Sanitation Act of 1992 require any Industry to conduct an environmental impact assessment before the industry starts its production. The interviews with Industry owners in both Ubungo Darajani and Chang'ombe 'A' showed they adhered to this Act. However, domestic wastes resulting from poor sanitation system in residential premises contributes much to this problem.*

order to enclose large populations and areas so as to justify classification into higher status. Housing investment in both urban and periurban settlements after declaration is at an increasing. This has resulted in unplanned and unserviced settlement in urban areas (NHSDP, 1995; Sec.4.1.4: 25).

The policy shows that in periurban settlements, urbanization processes which go the planning, surveying and registrations processes will continue. The government addresses this problem by stating that the government shall:

> *"…first ensure the need for administrative boundary expansion shall be substantiated scientifically in a participatory manner between the interest parties. Secondly, ensure village engulfed in urban areas as a result of the expansion of township boundaries shall cease to e villages whether or not they are registered and their administration shall come under the respective urban local authority and thirdly. Develop strategies for providing funds for planning and surveying of urban plots including plot development revolving funds, cost recovery and cost sharing methods and, self financing for planning and surveying".*

The government policy is important for reduced poverty and enhancing food security for a majority of urbanities including smallholder farmers-the urban poor. The study settlements show that urban agriculture is establishing informal sectors in the city. This is because it is not organized and mainstreamed in the city land development programmes. Likely, urban and periurban settlements will continue growing following the rapid urbanization challenges facing the city of Dar Es Salaam. Putting the sector in land use plans and having both accommodative and restrictive regulations and enforcement is an important strategy. This is much more beneficial than perceiving it negatively as an " *informal sector*".

In practise the land declaration procedure hardly involves landholders in their respective settlements once urban expansion needs arise. Landholders including smallholder farmers are mainly involves as passive and not active participants in the process specifically during the preparation stage. Ubungo Darajani is an exceptional case, which landholders show potentials of social capital mobilization in terms of land use planning processes and output implementation after declaration made in 1993 as discussed. Principally, policies guiding such financial mobilization are lacking. The existing procedure of requesting endorsement for financial mobilization from District to Regional commissioners is political and is too bureaucratic as the case shows. For example, the long time it takes for requesting such permits was a constraint to implementing land use plans. As a result, the local communities decided to continue with the processes and were successful. In holistic view putting in place such policy is rational to avoid swindling community funds meant for land development.

According to Drescher (2000), remarks:

> "…*Cities may be planned according to a mix of policy, decrees and statements, all of which may be interpreted differently by different planners and politicians. Recognition of and interest in urban and periurban agricultural production is generally low among planners and politicians. Thus, a consistent approach to UPA is rarely found*".

Drescher's statement underscores importance of understanding the potentials of urban agriculture. For smallholder farmers urban agriculture means assistance in coming out of poverty. The study shows that this has hardly been achieved in the city of Dar Es Salaam where involvement of landholders including smallholder farmers and tenants interests are exclusive to Municipal and National development programmes. Planners' rigidity in using the master plan approach is common and therefore transforming this mind set to flexible planning approaches requires heavy investment in training, workshops, course enactment and improved curriculum within the higher learning institutions to

ground this reality. The government may opt to link the planning professionals in higher learning institutions in theory to link with practise to understand the local reality and review their curriculum development to reflect urban planning realities and changes.

Adopting flexible and participatory planning approaches

According to Section 4.1.9:31-2, the NHSDP shows that spatial urban land use planning has been based on master plans and long term spatial land use planning frameworks for coordinating and controlling urban land development. Due to the blue print nature of master plans, they are inflexible and cannot be easily adapted to constantly changing social and economic circumstances. It has not been effective as intended, thus leading to haphazard growth of towns with inadequate infrastructure services. The increasing demand of housing in cities beyond planning capacity and formal land offering triggers the haphazard growth of Dar Es Salaam city. In recognition of the NHSDP, the National Land Policy of 1995 remarks, urban planning shall aim at the following:

> *"…first, identification of key planning issues in land and environmental management and in the provision of housing infrastructure services. Secondly, preparation of detailed land use plans for land development. Thirdly, identification and mobilization of local and external resources for implementing urban development programmes and fourthly, promoting community participation in planning, integrating and coordinating the actions and resources of various sectoral implementing agencies including those in the popular sector".*

The statement shows the good will of the government in intervening and the need for adopting flexible and participatory planning tools and approaches. In the case of Tanzania Land regularization and detailed land use planning according to Land Act of 1999 Sec.56-60, Urban Planning Act of 2006 and Land Use Planning Act of 2006 Sec.16 proposal respectively are in place. This may help the planning institutions responsible for land use planning meet the participatory objective. But, it should be noted that these policy documents have their limitations to ensure community involvement in spatial land use planning processes. It is not in all stages discussed that the local community has been involved (Chapter five). Likewise, still the master plan as a general planning scheme which uses zoning regulation to demarcate various land uses and ensure land compatibility is essential as the Urban Planning Act of 2006 Sect.10 shows. This helps to avoid problems in mixing residential with urban agriculture vs. industrial area and others alike. This research argues that the detailed land use plan should provide conditions to develop specified land development at a geographical site and needs at site, neighborhood, community and city levels. All in all coordination and monitoring is essential to ensure sustainable use of land.

Investment in infrastructure for promoting urban agriculture

The government recognises the need for infrastructure and service provision in urban and peri-urban areas for reduced urban poverty. The policy states:

> *"…areas in urban centres that are earmarked for development shall be provided with infrastructure and social services before they are allocated to developers as required in the national land policy".*

The statement shows how the government aims to reduce urban poverty through infrastructure investment. The practice in the study settlements show that land use preparation does not go hand in hand with infrastructure service provision. Equally, service assessment, financial outsourcing, and policy enforcement to prevent further development in periurban settlements are limited. In the case of Goba where land was declared and land use planning process followed, weakness in declaration and

subsequent land use preparation and implementation caused land use conflicts. The non-involvement of landholders including smallholder farmers was the cause identified. Similarly it was noted that landholders in the case study had mobilised their own resources to get water for irrigating their crops including deep and shallow wells. This shows partnership in infrastructure provision that the government may wish to adopt. This helps to ensure project sustainability and commitment of actors in urban and periurban settlements, which are elements for improved urban land governance in cities.

Community involvement

The NHSDP policy recognizes the existence of squatter and unserviced settlements. Section 4.1.4.2 of the policy requires the inhabitants (both landholder and tenants) through their CBOs and NGOs to improve their land in partnership with the local authority. It also provides opportunities for local authority to collaboration with residents to plan and survey their plots, formulate a plot developing fund, self-financing, cost recovery and sharing for planning and surveying. This shows how policy intended to provide room for inhabitants to participate in terms of land development where their needs can be integrated in urban planning and management.

Despite good policy intentions, the policy does not address power relations. For example, Subward and ten cell level administration are neglected in preparing and implementing land use planning and lack authority at the local level. These leaders are not included in the District/Municipal setting structure and do not receive land use planning outputs during dissemination stage. This limits local level mandate in preparation and implementation of detailed planning schemes for guiding land development and subsequently integrating urban agriculture in their settlements.

Building Regulation of 2001 previously revised in1930 and 1989

Haphazard housing development and mixed land uses in the city are common. In addition, inadequate policy enforcement and monitoring have motivated incremental type of housing that engulf agriculture land and make it difficult to institute infrastructure services that promote urban agriculture. Similarly, informal land selling transaction system with tied capital[74] accumulation from landholders has amounted to incremental housing development and leaves many unoccupied and undeveloped buildings and open plots. This endangers housing safety in terms of crime and the land is used for urban farming. The government is attempting to limit such development.

It is clearly stipulated in the building regulation that before one erects a building, the builder must apply for a building permit. This implies that building permits is a tool for coordinating and controlling land development. Within the building permit plans, maps and site analyses are submitted to local authority to enable the granting of the permit. The National Human Settlements Development Policy (NHSD) (2000:24) which works together with the building regulation clearly points out some weakness of the building codes and regulations:

> *"…existing building regulations are inflexible and unaffordable, and hence do not encourage people to build, but act as a hindrance to potential developers…. There are unnecessary delays in issuance of building permits, thus enforcing most developer to build illegally without such permits"***.**

[74] *This is conceptualised as unstable capital, which results in incremental accumulation of savings smallholder farmers and other landholders in the city earn from various livelihoods they possess and later use for house construction.*

The practice in the case studies showed that once the permit is offered, follow-up in terms of monitoring and evaluation are hardly adhered by local authorities in the city. Likewise, time limit for processing a building permit is also stated as a constraint in the NHSD implementation. In line with these constraints, the NHSD remarks:

> *"…building and construction standards shall be revised so that they become functional and performance based rather than prescriptive. They shall be flexible and affordable (URT, 2000:24)"*
> *"…Local authority shall be duty bound to issue building permits within thirty days. In case the applicants do not get reply in time, he can appeal to the Minister responsible for Town planning".*

This shows that building codes and regulations should be performance based. It is important to adopt flexible standards and to understand the performance criteria for case success and therefore meet the objective set. Arimah (1999:81) state:

> *"…performance standards are the expression of acceptable level of use of an activity at a given time and place in relation to given set of cultural, environmental, technological and socio economic conditions. Performance standards are therefore based upon conditions that actually exist in a given spatial entity, and therefore, must change as the prevailing conditions change".*

It is rational to adopt flexibility and to reflect local realities in order to improve urban land governance The flexibility should go in hand with the cultural, environmental, technological and socio economic situations of a geographical area. Organisational and legal changes are necessary to enable community growth and to reduce poverty in the case study areas.

In line with plot coverage and standards, the building regulations provide restrictions required in residential areas. The township building codes of 1930 (sect 9) provides:

> *"…plots shall be covered by building only up to a certain percentage-66%, 70%, 50% and 25% for different specific cases. There is a general restriction to 25% plot coverage in areas zoned as residential areas. No plot in residential zones shall be less than 929 metre Square".*

The policy statement shows good will by the government to adopt and enforce building regulation for improving urban land governance in the city as a whole. In practise these plot ratios and restrictions are hardly achieved in the case study areas. The government has not yet established the appropriate standards for informal settlements plot rations and coverage as most landholders build without following these regulations. It is helpful when the government provides loans, building plans and construction for residents. Otherwise it would be impossible to control informal settlements.

The lack of adherence to such plot coverage ration and restrictions results in increasing informal settling, pressure on resource use and poor infrastructure services. This calls for more work to be done for land development coordination and control through upgrading and prevention slums. Likewise, in a critical view, the policy statements are not sufficient since in practice officials implementing the policy do not follow and information is not accessible to landholders in line with standard requirements. This leads to implementation difficulties when it come to the issue of power struggles between the landholders involving in urban agriculture, local authorities and other land developers interested in housing development. According to Shivji (1996:12), if policy statements were being followed the land conflicts could have been minimised. He adds that residents volunteering to offer part of their land could have been possible for service improvement and public use.

To summarise the policy statement, building regulations view housing development as one component affecting urban land governance to be set within a criteria to enable its development. The introduction of performance criteria and flexible standards is important in rapidly developing cities. This can be achieved when policy enforcement is in place and community awareness is raised. Participatory urban planning process should be emphasized in development policy. This involves including different stakeholders in land use planning processes, and being transparent in offering building permits and planning consent. These are important ingredients towards enhancing urban land governance. In addition, the process of land acquisition and the schedule of compensation should e made available to residents prior to land use planning preparation. A low compensation to the real land market value was given to the majority of the smallholder farmers in Goba settlement. Compulsory land acquisition and fair compensation have to be made, which can help smallholder farmers in urban and periurban settlements to access land in a formal framework. Equally, the acquisition and compensation may help ensure proper management of urban land through replanning of these areas.

Land Act, of 1999

The land use planning processes observed are not going together with land allocation. Once the land is declared ripe for urban development, all land allocation needs to be formal. The informal land transaction (Figure 7.3) was observed common in both settlements. The ten cell and Subward leaders involve in land selling informally and without acknowledging the local authority. These leaders are recognised at the grassroots level and hardly recognized in Local government structure. They do not have a per-month salary and therefore selling land when it arrives from a buyer becomes a strategy for earning income. This informal land transaction is done contrary to the formal procedures as stipulated in Land Act of 1999, Subsidiary legislation of 2001 No. 16: 626. In this legislation, land allocation is performed at the local authority level where it is usually done once the land use plans are prepared and the cadastral survey is conducted. The main composition of members is as discussed in chapter two.

In supporting the foregoing, Sect. 9 of the Act stipulates the function of the committee, excluding the central government level from involving in allocation of such land for urban farming (Pg 628). The policy states, "*the committee shall supervise daily operations and shall be responsible to the Minister*". One may be unsure how he/she could get the right to use that land formally. In addition, is this committee at local authority responsible to the Ministry for Lands, Ministry for Local government or the President who is the land trustee? This is an institutional role contradiction arising in managing urban agriculture, which has been recognised in legal documents, but may have implementation difficulties. Further, analysing these legal statements, smallholder farmers at the grassroots level are missing in the committee composition. It is the author's view that the Act assumes that the two councillors who are landholders' representatives can act on their behalf. This is something that has been hardly achieved in land use planning and allocation agendas. It seems that it would be good if the other two members were selected from among the landholders including smallholder farmers in the local authority in question.

National Strategy for Growth and Poverty Reduction of 2005 in Tanzania

Poverty reduction is central in achieving and strengthening urban land governance objectives and therefore in meeting the Millennium Development Goals (MDGs). Poverty as a relative term reflects both income and non-income elements (IMF, 2002; 2004). Enabling landholders including smallholder farmers to access land, information to communicate with planning institutions and to ensure their

involvement in policy, decision making and social justice helps reduce vulnerability of smallholder farmers and therefore allow them to come out of poverty. Others include appropriate policies that are both accommodative and restrictive. These policies help reduce pressures of urban poverty if properly monitored and enforced, which are some of the Tanzania visions and strategies for sustainable growth direction in both urban and rural settlements for creating a good[75] life for all.

Despite some brave attempts by the government and non-government sectors to reduce urban poverty through implementing the National Strategy for Growth and Poverty Reduction, urban agriculture was not included in this important document. This enhances marginalisation of urban farming in national programmes in practise.

9.2.3 Improving agricultural livelihoods through innovations in settlement planning

Urban agriculture is a household livelihood strategy. Through inplot and offplot farming, smallholder farmers are able to earn income and meet their daily subsistence needs. To achieve this, land use planning enables them to use the land sustainably and therefore improves their livelihoods. It is argued that a policy that aims at increasing the size of the plots and at treating wastewater use for farming in settlement planning is in the right direction. Such a policy is likely to enhance the livelihood strategies of the smallholder farmers-the urban poor.

Urban sprawl

Many urban planners and policy makers argue that the increase in the size of high density plots contributes to urban sprawl. According to Galster *et al*, (2001:682), sprawl can be defined as

- Examples of low density patterns of urban development.
- Ugly development when viewed from an aesthetic point of view.
- The cause of unwanted externalities such as increase in travel distances, air and noise pollution, conversion of farm land to urban uses, etc.
- Characteristics of patterns of land development such as low density continuous development, ribbon development along corridors of major urban highways, leap frog development, etc; and
- Representing a stage in the development processes rather than a static condition. To further elaborate on this definition, Galster *et al*, (Ibid.685) argue

> *"…some parts of an urban area may pass through a sprawl stage before eventually thickening and diversifying so they can no longer be characterises as sprawl".*

A remarkable divergence between sprawl, which is taking place in developed countries of the North including Germany and sprawl that is occurring in countries of South specifically Sub-Saharan Africa, is that in the former, sprawl is planned and guided. This means that it takes place within the framework of approved spatial land use plans where infrastructure and social services are provided by the government or the private sector. Equally, construction of housing is facilitated by well established financial systems. This is not happening in the countries of the South. In this context sprawl is caused by rapid urbanisation, which is occurring in the context of poverty, and the institutions and organisations that have been created to guide the process are weak and ill-equipped. This has among other things, led to the growth of informal settlements (Table 2.1), where the main actor in the housing delivery system is the owner of the household who relies on the assets at his or her command. This

[75] *This is the President of Tanzania's Manifesto (Hons.J.M. Kikwete) in his readership from 2005-2015.*

suggests that strategies such as the vertical development of houses, which are used in the countries of the North to contain urban sprawl, may not be helpful in the countries of the South.

The policy of the government of Tanzania is to control the physical growth of urban areas:

> *"…control over the physical growth of urban areas is necessary in order to reduce urban sprawl; to facilitate economy in the use of land and in the provision of infrastructure services; to protect the urban environment; and to ensure a functional and efficient urban system (URT, 2000:44)".*

To achieve this, the government is committed to facilitate the vertical growth of the buildings:

> *"…the government shall ensure that land is used efficiently and effectively. The future trend will be vertical growth rather than horizontal".*

We have seen that the main actors in the housing delivery system are individual landholders who build their houses in several phases determined by the resources at one particular time. These cannot, in the short term, simply afford to go to vertical. The vertical development is wishful thinking. To do so, owners have to posses enough cash to put up a strong building foundation, which requires a substantial amount of money. Therefore, unless deliberate efforts are made to increase their asset base in the first place, the idea of vertical growth is at best a dream. However, there is need for both short and long term strategies for policy implementations that can support this, otherwise it will not be achievable.

Plot coverage

Wide plot coverage increases the space for accommodating urban agriculture and other commercial activities in the settlements. This in turn increases the income earned from renting because room for commercial activities commands higher rent than rent from residential and agricultural land. Therefore if planning aims at improving the agriculture based livelihoods in spatial land use planning for improved land governance, it should aim at providing wider plot coverage and frontages. This strategy could be supplemented by others, particularly establishing micro-credit schemes and procedures that allow repayment of infrastructure costs in installment over a long period and cases reporting to local authorities and mechanism to enforce the reported case.

9.3 Reflection on the three study settlements

The study shows that Dar Es Salaam city began as a farm meant for coconut farming, which then developed into as a port to access the city. It later became administrative and its boundaries started to expand. This shows that the city was first developed as a market and service centre for farmers and rural households, and later developed into an important centre of industry and service provision. This city is home to have significant sections of the country's economy and employment structure. However, it was noted that the city expansion engulfs the agriculture land and replaces it with housing without proper urban land use planning schemes. Unorganized farming, sanitation problems, encroachment of public spaces and loss of agriculture land are some common issues in the city.

The unregulated physical expansion of a city's built-up area has serious social and environmental consequences in accommodating urban agriculture. Among the impacts is the expansion of informal settlements, which are often concentrated on land sites subject to flooding and on hillsides and valleys. These settlements are also land sites to which it is more difficult and expensive to extend basic

infrastructure according to Dar Es Salaam Master plans. Smallholder farmers who are a low-income group often concentrate and construct in these areas.

Urban agriculture conducted in plots and offplots is an increasing activity in the city. The activity's faced with sets of challenges including increasing need for urban construction investment and pressures on water supply and other infrastructure. Similarly, the increasing in land value including its markets brings problems for the city's built-up area and transport system (Chapter six). Paradoxically, there is a lack of effective public control over urban agriculture land use which could help haphazard farming, make farmers organized and increase the value of their products. In many Sub-Saharan African cities, it may also be encouraged by a lack of other domestic high return investment opportunities and therefore limits integration success.

It is very difficult for city officials including planners to know what is happening at the local level in residential neighborhoods. This is also aggravated by lack of land rangers who can help monitor land development in both urban and periurban neighborhoods. Secondly power of initiation should also be decentralized to the lower level rather than to central and local government levels only. This helps to mobilise funds, involve all stakeholders in land use planning processes and include their interests.

Community involvement as achieved by Ubungo Darajani shows how the plan was used to facilitate further infrastructure provision, building construction and prevention of encroachment of private spaces through community leadership. In the other two cases, it has been impossible as the landholders did not remain with the plan after plan approval and were hardly involved in determining the fate of their future land development. It was noted that the landholders in these two cases assume that the role belonged to government and were not involved in the initiation, decision making or preparation stages. This enhances the missing link of urban planning theories and allied policy implementation.

The land use planning initiation in the three cases shows the presence of both top down and bottom up planning approaches. The case of Ubungo Darajani, took 2 years to initiation due to many consultations and need for awareness creation among the landholders. This was a necessary process to achieve participation, financial mobilization, actor commitment and transparency in the land use planning process. However, it shows the negotiation power and interactions among actors which signifies the role of social capital in land use planning processes.

The priority setting of both local communities and the government excluded urban farming as one of the land use functions and did not have land demarcated for the practise. In local communities in Ubungo Darajani major priorities were to improve infrastructure facilities and services, to prevent haphazard housing development and encroachment on roads, and to improve their security of land tenure. However, improving security of tenure (land legalisation) was the first priority according to the landholders' decision made in 1997. In the other two settlements they were hardly involved discussing and implementing the land use plan. One wonders if local community do not prioritise urban agriculture as an important land use function, then how should it be integrated in the land use plan? The typical misunderstanding of concepts regarding urban agriculture is the cause identified. People to do not understand what urban agriculture is, they are thinking in terms of traditional agriculture, as they know from home. This shows the missing gap in theory and practise. Improving community involvement in land use planning is needed to integrate agriculture into the urban setting.

In supporting the above, minimum planning standards should be a function of local conditions such as site analysis and design principle needs (Chapter two). Others include land use changes and investment attractions that take into account food security in the city, redressing urbanization impacts and urban poverty for sustainable development. Ubungo Darajani shows this by adopting flexible space standards (Chapter 6), which shows the potential of negotiation in planning practise.

The inclusion of community values in the design processes and output implementation is essential for project sustainability. To be successful in this respect, urban planning principles stated in Chapter two need to be observed. The following are some features to also be considered for integrating urban agriculture in spatial land use planning practises:

- Pursuing holistic oriented values: Through the integration of community needs, social, environmental and economic value in land use planning.
- Continuing cooperative working relationship during land use initiation, decision making and subsequent implementation.
- Rationally formulating land use planning design guidelines before processes begin for awareness creation among actors and also during output review.
- Involvement of smallholder farmers to determine their needs through participatory planning

The conflict in Goba settlement manifested this. The power relations between the local level and the higher level in land use plan implementation are unsatisfactory. Inclusion of Subward leaders in Municipal organization structure and defining their roles in land use planning, implementation and its management at local level is rational for making urban agriculture possible. It also helps in accessing communication at different decision levels potential for settlement development.

In supporting the above, access to information, communication and formal land delivery for urban farming is limited in the study areas. This appeared resulting in increased informal settling which disregards availability of infrastructure services and urban environmental quality. Remarkably, the government continues getting and collects property tax within these settlements, which may bring social conflicts in the future as they pay without having services.

9.4 Unresolved issues for future policy agenda and development thrust

With limitation on time and financial resources, the study did not explore all issues and therefore more work can be done to understand urbanization processes and urban poverty policy development. In future more work may be directed to:

- Examine the impacts of land market on urban agriculture: This will help to contribute and build on market value influences on urban agriculture within a sustainable development debate
- The impact of public and private open space encroachment on urban food security: This helps in understanding space utilization and needs for urban design for redressing options for sustainable space utilization for urban agriculture
- Explore the impact of migration trends and determine the future of Sub-Saharan cities land development and employment patterns. This is important to understand the rate of urbanization, employment crises and the way in which urbanization challenges can be reduced. Likewise, the demographic transition and other underlying factors will be known for future urban development
- To examine sustainable ways of waste water utilization in urban areas of Sub-Saharan Africa. This helps to understand irrigation options and innovation in waste management technology

which is essential for enhancing sustainable agriculture production in cities like Dar Es Salaam where water is a problem

- To examine tenure modality systems and their impact on urban agriculture system. This will help in clearly understanding why residents fear eviction, and if tenure matters a lot for improving urban farming in cities
- To find out how land use output monitoring and evaluation impacts urban agriculture. Such a review should go hand in hand with the development of a number of measures to prevent encroachment on biologically sensitive areas to prevent the use of drinking water for irrigation, and the contamination of groundwater by high-external-input agriculture.
- Assessing the impact of use of waste water on food safety and the nutritional quality of urban and periurban vegetable produce
- Investigate and analyse the institutional economics of urban agriculture marketing systems.
- Examine the use of untreated household wastewater in urban agriculture farming systems and their effects.

CHAPTER TEN: RECOMMENDATIONS AND CONCLUSION

10.1 Recommended options

Based on the study findings, there is an urgent need to guide urban settlement development in Ubungo Darajani, Changombe 'A' and Goba. The findings from these cases provides lessons which can be replicated in other settlements in the city as the following options suggest for integrating urban agriculture based livelihoods modalities in spatial land use planning practise:

10.1.1 Settlement upgrading through improved urban governance

Good and improved urban land governance requires transparency, involvement and commitment of actors and resources to enable effective and efficient land administration and management in sustainable way. Settlement upgrading is one planning strategy that can help urban agriculture integration in spatial land use planning processes. Decision making in spatial land use planning processes through upgrading should be guided by some mentioned governance principles at different levels to attract more public/private partnership in promoting urban agriculture.

It has been identified that informal settlements are increasing. This is accompanied by inadequate sanitation facilities, drainage systems and other infrastructure services. This has resulted in dumping of domestic and industrial wastes in river channels, which in turn is used for irrigating vegetables. This has implications for health and the environmental quality (Table 7.5). Thus, involving in settlement upgrading can help to provide space for farming, conditions set through communities and enforced by themselves in collaboration with the local governments. To achieve this upgrading as a strategy for integrating urban agriculture in settlement development, formation of social capital and financial capital including micro credits at the local level is important. Equally, adopting appropriate standards, providing settlement development guidelines, ensure security of land tenure and creating awareness among actors on land development policies and processes in upgrading is important. Otherwise, achievement can be not possible.

It is an inescapable truth that health and environmental threats affect the implementation of urban agriculture in urban setting. This has been a result of informal settlement development in urban areas with inadequate sanitation facilities and inadequate infrastructure such as water for irrigation and poor roads. This shows that integration of urban agriculture into land use planning processes while considering its form, scale, location, consumer health and the environment can be important. Otherwise, its negative implications may persist and cause urban managers and policy makers continue to disregard it in the urban setting. This argument also agrees with Mougeot (2000) in Bakker *et al*, (2000:2) and UN-Habitat (2004a: 3) who provide the same results.

10.1.2 Adopting flexible and participatory urban planning approaches and standards

Inadequate involvement of different actors at various stages of land use planning processes limits promotion and integration of urban agriculture in spatial urban planning. This is caused by policy and legislature, which among others in practise do not provide prominent guidelines to enable implementation of urban agriculture in the city. Likewise, reconciling voices of different stakeholders are inadequately addressed in local authority and central authority agendas and programmes. This

increases marginalisation of the urban agriculture integration in the whole process of land use planning. Also, pressures on natural and human resource use are at an increase. This includes water and extension services which are inadequately supplied in the city.

In supporting the above, rapid urbanising cities like Dar Es Salaam need to have a clear planning framework to guide urban agriculture implementation once it is prioritised by local communities. Awareness rising on land development policy for landholders during land use planning process and partnership creation appear to be a requisite to meet both theoretical and practical requirements in land use planning for effective integration (Figure 10.1). Suggest a participatory spatial land use planning framework, which combines both formal and practical needs, which the government may wish to adopt for improving the livelihoods of smallholder farmers and other urbanities in Dar Es Salaam. Moreover, strengthening smallholder organization through institutionalisation, giving them a voice in the political dialogue and putting in place mechanisms to ensure food availability, quality and sustainable use of land is crucial for urban agriculture acceptance and integration in urban setting.

Planning standards are important to control and coordinate land use planning outputs. Given the mushrooming of informal housing densification in African cities, appropriate space standards can be adapted to local needs using a participatory approach. This will allow inclusion of urban agriculture in upgrading of informal settlements commensurate with increased population. Unlike unconventional approaches, minimum basic space standards could avert unnecessary farmers' fears of eviction and encourage negotiation in planning processes. The negotiation and persuasion may minimize compensation costs and enhance and environmental conservation potential for improved city land governance. In addition, flexible standards should not override technical, social and economic needs of the local and central government, but negotiating the possible limits in mixed residential density and high-density settlements. Well trained planners should play a great role in facilitating the processes to enable the effective and efficient use of land in the city. Otherwise, settlement environmental degradation will be a feature of the city growth. Nevertheless, conditions for change of land use and restrictions should be communicated to landholders once the plan has been approved.

10.1.3 Community involvement

Urban land use planning practice is about opening doors to knowledge, and removing barriers to involvement of actors in the spatial land use processes. It must relate to finding new partners, building networks, negotiating priorities and creating communication spaces. Involvement of landholders including smallholder farmers and other actors in the planning, implementation and management of land is rational for the integration success. These actors may be given the opportunity to fully participate in identifying and prioritizing needs for land use planning and subsequent implementation and output management for sustainable development. Particularly in the land use planning initiation, decision making, preparation, implementation and monitoring the outputs achieved. This helps integration urban agriculture in land use planning practise while ensuring sustainability of the initiated project. It is involvement and participatory dialogue platform that encourages the partnership we need to maintain urban agriculture and land use planning sectors for effective integration. The partnership ensures inclusion of local values in land development in Dar Es Salaam and other Sub-Saharan cities.

Partnerships appear to be important if they can be established to deliver effective land services to smallholder farmers involved in urban farming. The partnerships with the communities can help to also develop action plans and ensure evaluation and monitoring agreements are made during planning

processes. Likewise, partnerships can help organise smallholder farmers and other stakeholders in the city to come together and voices the need for improving their livelihoods and safeguard the urban environment (Figure 10.2). Collective action of smallholder farmers and formulating their organization is essential. This can help to guide their needs and meet developers for help with different capabilities including financial, human, scientific and technological within an agreed institutional framework. In addition, merging the voices of different stakeholders to utilise the available potentials needs to be considered in the partnership forum where each one can freely speak and his/her fears can be resolved and therefore consultative modality can be achieved.

10.1.4 Ensure access to resources and tenure security for the urban poor

The question of land tenure goes together with the right to use and own land for urban agriculture production. Land demarcation and ownership registration is essential for increasing local authority revenue, using land sustainably, poverty reduction, and increasing city productivity. Thus, land use planning becomes essential in meeting such obligations when smallholder farmers can be ensured in accessing land for farming. Equally, conditions set for use of land are essential once smallholder farmers are organised and their farms identified in the city. Likewise, infrastructure improvement including water provision is essential in reconciling formal and informal land management principles including right to own and use. This can be achieved where housing density (i.e. formal and informal) and mixed land uses exist, and therefore settlement upgrading becomes an obligatory strategy for integration of urban agriculture forms once agreed by landholders in their settlements.

In supporting the above, development conditions for urban agriculture in plots and open space can be set on the upgrading outset. In periurban settlements, demarcation of land with potential for urban agriculture to meet a leisure and recreational function is a potential strategy. This can be achieved once land use planning in periurban areas is prepared through community participation, conditions for developing and controlling such land known to landholders in urban and periurban areas.

In particular, the contribution of figure 10.1 reflects new institutional arrangements potential for the purpose of the integration of urban agriculture in spatial land use planning. The methodological aspects raised are: participatory approaches, stakeholder involvement, and forms of urban agriculture analysis and of institutional linkages. This contribution brings to light the necessity to situate agriculture in urban areas. This approach presents opportunities for better urban planning, which can be of great importance for the integration of urban agriculture in spatial land use planning in cities.

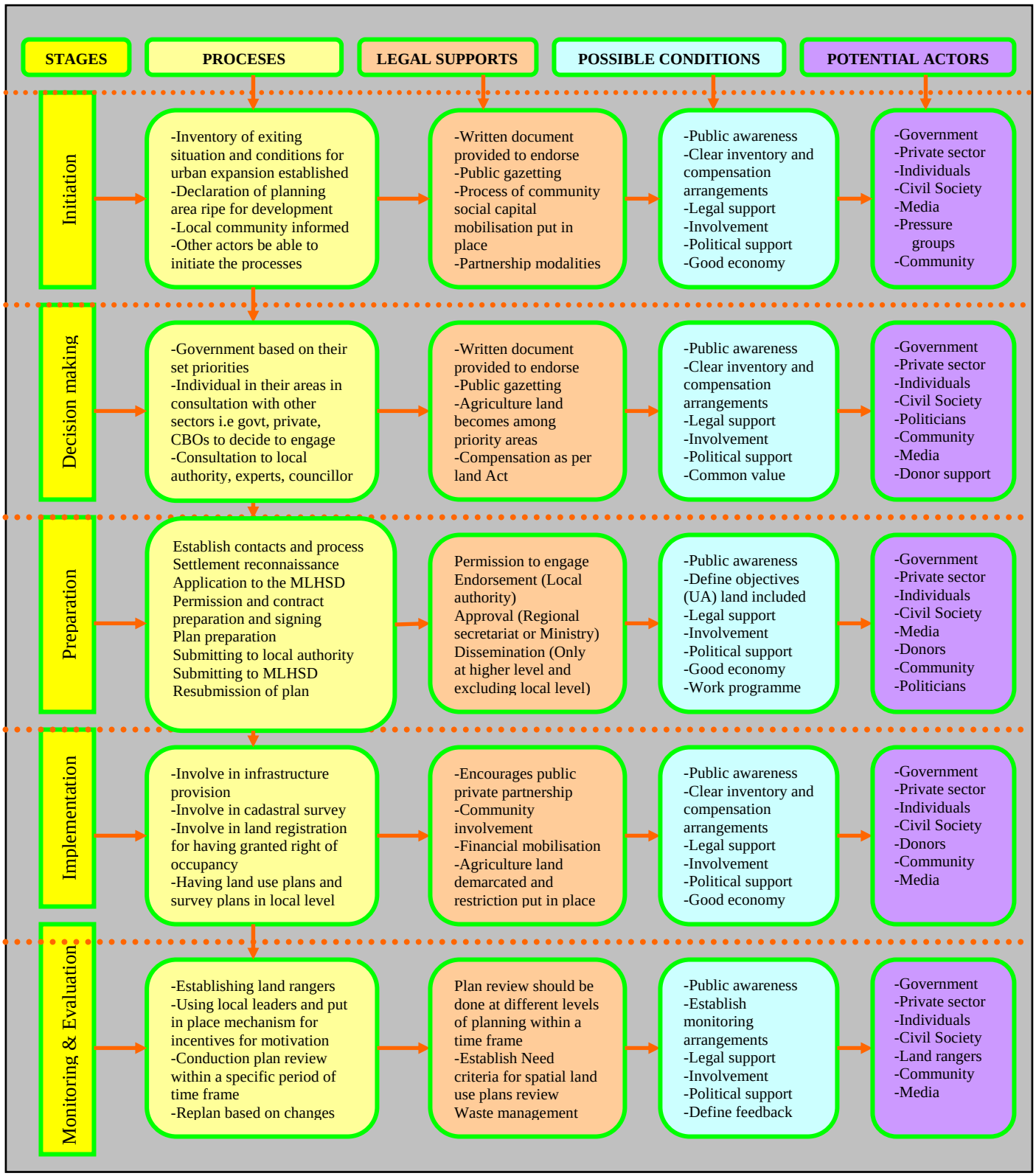


Figure 10.1 Planning framework for reconciling formal and practical spatial land use planning processes towards inclusion of urban agriculture in urban planning.

10.1.5 Strengthening institutional arrangements

There are many factors influencing decision-making processes with respect to spatial land use planning and urban agriculture practise in the city. At the national level, Ministries and other public sector agencies responsible for water and waste management, agriculture and fisheries, public health, the environment, trade and industry all have the potential to influence the planning, design and operations of spatial land use planning and urban agriculture practises and to address the adverse consequences they may have.

The study indicates disparity and weak collaboration between planning institutions in terms of functional roles of Central and Local government. The linkage among Ministries responsible for lands, tourism, health, agriculture and livestock development and Local Government and Regional Administration is essential for effective integration of urban agriculture in land use planning practise. Similarly, local authorities in Dar Es Salaam within the three municipalities and the City Councils need to be networked to enforce regulations. Some of the decision–making concerning spatial land use planning and urban agriculture practises may be delegated to the lower administrative level: Ward and district municipal authorities. Intersectoral collaboration is rational where issues are crosscutting.

Spatial land use planning and management in practise is a very complex process. It requires interventions that provide area-specific control measures and standards to promote urban agriculture. This can be achieved through the use of local leaders at the grassroots level. If the grassroot levels are paid a salary they will be less likely to sell land. A salary will make them feel recognized by the government, and will make the setting more formal. They can act as land rangers at the local level and may report informal building to local authorities. Using this approach will facilitate coordination and control of land use development including urban agriculture in the urban setting. Likewise, change of land use, land declaration, permit and planning consent provision need to be flexible.

10.1.6 Harmonising policy and legislation arrangements

Harmonisation of policy and interpret the same on grounds is essential for amendments and avoid overlapping, which are common. For example, Building regulation restricts in plot farming basing on its standards requirements. The Land Act of 1999 Section 56-60 gives mandate to the Commissioner for land to initiate and prepare land regularisation plans and is responsible for its entirety. This seems to exclude the Director of Human Settlements Development in the Ministry of Lands and Human Settlements Development who is responsible for approval of such plans. No section in the policy mentioned meeting this important urban planning obligation. Likewise, more power is vested to the Commissioner for land in performance of all concerning land regularisation. According to Urban and Local Authorities Act of 1982 no.7 and 8, the Ministry responsible for local government is also responsible for preparing and approving of land use plans and once the settlements are declared ripe for development no farms exist. Besides, the Town and Country planning Act restricts urban agriculture by arguments that need potential attention as discussed. These Acts show contradiction existing in legal and policy documents, which need to be harmonised for effective urban land governance. This will go along with defining roles of each actor to play as rational ingredient for improved urban land governance in the city.

In reversing the trends, future land use planning policies should engage in a more holistic and comprehensive approach that will not only integrate factors of the growth of unplanned settlements and

prevention strategy. It should also co-operate with factors of the emergence of urban agriculture as a livelihood strategy, which needs to be linked with national and international development partners and programmes in urban land development. The objective of any land use planning policy may include urban agriculture integration into the broader city economy. This perspective needs to be shared with urban decision makers in the country to attract their attention and support (Figure 10.1; 10.2).

10.1.7 Enhancing city economy and financial allocation

Strengthening the economic base of our Local Government Authorities is one of the most effective ways to strengthen urban land governance where land use planning and urban agriculture may be integrated. Making full use of the available tax base potential and critically reviewing the existing system of expenditure, roles and responsibilities to meeting local community needs including smallholder farmers in their respective areas is rational. Inadequate information on land used for urban agriculture creates room for smallholder farmers to not pay tax to the local authority. Lack of clear established payroll and outdated rent prices as discussed in Chapter seven appeared decreasing local authority revenue collection. Thus, recognising and identifying the share of revenue from urban agriculture by both the central and local governments is crucial to strengthening the economic base for Local Government Authorities and therefore will foster its integration and add its value to the city.

How an increasing fund to urban agro does decreases marginalization of urban agro. Abandoning urban agriculture is not the solution, rather we need to think of strategic ways of accommodating and putting conditions for its development based on specified location considering health, environment, economical and political situations. This implies that alternatives should be in place before the local authority can decide to vacate residents from their land used for urban agriculture to avoid future chaos and riots (Figure 7.4). These alternatives can include fair compensation schedules and financial support for those affected.

10.1.8 Database and information flow

Limited information access for urban planning processes to landholders and information on extension services and markets for urban agriculture practices noted to be common challenge in the three settlements explored. The study shows that computerised GIS-a spatial technique, can greatly contribute in the representation process of land use planning and urban agriculture integration. Particularly through mapping and organization, in which overlaying and correlations between physical factors, location of the two can be merged for learning, coordinating and controlling land development in the study settlements and Dar Es Salaam city as a whole.

10.1.9 Awareness raising among actors

Smallholder household farmers and tenants in a geographical area need to be consulted to be involved and therefore negotiate land development activities in their area. The involvement helps create awareness in land use planning and to decide how agriculture can best be promoted in the urban setting. Smallholder farmers can help to choose suitable land and to agree on regulations. Awareness rising is essential for the actors involving in land development in ensuring sustainability mechanism, which is one potential element for improved urban land governance. This requires training and preparedness for negotiations for enhanced capacity building. Others include maintaining flexibility in land use change and conditions and adopting participatory planning approaches.

10.1.10 Cost recovery, sharing, and commitment

Landholders can contribute to land use planning processes and subsequent implementation if they get involved from the project outset. This is evident the case of Ubungo Darajani community. In other cases, this was a problem as landholders were not informed during the land use planning initiation, and the same became aware during implementation. The landholders in the Ubungo Darajani case show that volunteering in land development programmes was crucial to the success of the case. However, since this has been achieved, a system of contributing in installments for land use planning is preferred. Upfront cash contribution by targeted communities is a necessary condition to ensure commitments from landholders in involvement in the processes. Contribution to the costs of implementation of land use planning ensures a sense of project ownership and sustainability, which may require social capital mobilization to achieve formal right of occupancy granted to smallholder farmers.

10.1.11 Political commitment and support

Spatial land use planning appears to require adequate collaboration with politicians who are the main policy and decision makers (Chapter five). Involvement of politician helps in mobilising local resources, building local community trust and can facilitate budget allocation of local projects from the local authority, to achieve land use planning output implementation. In this context, a mechanism to convince these actors to get involved in land use planning including lobbying is essential. One strategy is to welcome them in chairing meetings and consultations before the land use planning process starts. This helps attract their attention to improve urban land governance and subsequent urban agriculture integration in settlement development programmes. In addition it may influence the need for its inclusion in district/municipal land development plans and rolling strategic plans.

10.2 Implementation of the findings and their limitations

Integrating urban agriculture is a social, economic, political and environmental necessity in addressing urbanization impacts, food security and urban poverty in Dar Es Salaam city. Implementation of the sector is a question of balancing the above needs stated and voices of different actors involved in the sector. Implementation in this context is conceived as getting things proposed done accordingly. It needs institutional coordination, actor commitment, financial assistance, and volunteered work. It is essential for the government and other planning institutions to make urban agriculture a priority. This will ensure that implementation is done according to the guidelines, where the needs and interests of all stakeholders are identified, discussed and integrated.

The study notes that Dar Es Salaam City can succeed in creating space for urban agriculture. Dar Es Salaam City Council (DCC) and the three Municipalities must recognise critical issues and opt for citywide solutions, by side-stepping conflict and through co-operation of all actors and stakeholders. The non-recognition showed is hindering urban agriculture implementation. In meeting this, investment is needed in training local government staff. Implementing a pilot project where urban agriculture setting and conditions are present would be helpful. For example, the government in partnership with other stakeholders may wish to implement allotment gardens in Dar Es Salaam, which has proved to serve both the poor and rich in Germany. Community awareness, government processes in offering land, smallholder associations and capital are some of the important ingredients to be considered for success.

Based on policy and institutional framework, a variety of mechanisms must be established for citywide building activity to happen and to be promoted at different levels. At operational level, solutions must be holistic and not ad-hoc. Solutions should focus on participatory planning tools such as land regularisation combined with true decentralisation and empowerment. For this to succeed, there must be political and administrative will, including cooperation and partnership between planning and development institutions. At conflict management and decision making levels, solutions must be holistic and should accommodate community needs in order to ensure implementation and sustainability of land use planning. Both restrictive and accommodative conditions for urban agriculture are important to ensure its sustainability in the urban setting. In addition, putting in place clear processes for smallholder farmers to secure land and improve his surrounding is necessary. Following these arguments, land use planning and urban agriculture implementation requires the above aspects in order to be effective.

Implementation is the most difficult part in urban planning practice as it is also influenced by the political situation in the country and is a major priority for the Town, Municipality and Government budget and country economic situation. The priorities of local authorities are subjective to revenue collection, grants from development partners and political vested interests. This also may limit implementation of the two particularly when they do not fall under Local and Central Government priorities in poverty reduction efforts and improving food security in the country.

Lack of financial and human resources keeps many land use plans from being implemented as is the case of the study areas and in the city as a whole. Inadequate human resource mobilization, training and means for outsourcing funds by the local authority add to the problem. Mechanism for mobilizing resources for local communities and other development partners are essential. This helps to tap local social capital and make the implementation successful. Otherwise, many land use plans may fail to be implemented.

Private-Public sector partnership is important as different development partners may be required to provide funds, and to organise groups who show interest in land related development programmes. This also requires experts who can write fundable project proposals to help smallholder farmers' ideas to attract funds. Most of the farmers have no such skills and it is the author's perception that on gong micro-credit education may facilitate the farmers in such a way and therefore provide opportunity for improving their skills and their social well-being.

City investment process is cumbersome and follows global markets and investment needs. Preparing the city land development strategy and framework can help provide conditions for developing each parcel of land and accommodate market forces. In the City of Dar Es Salaam, after the death of the master plan of 1978, no land use plan proposal is in place to coordinate land development plans for the city and therefore unorganized activities are common. Likewise, putting in place land rangers to ensure proper land coordination is needed once the land is declared as a planning area ripe for development. Land rangers are lacking in the city. This also may help prevent informal housing development, which has detrimental effects on agriculture land. Similarly, it will help provide room for negotiation among actors and reduce unnecessary land conflicts.

Generally, the implementation strategies fall under the question of planning, budgeting and investment planning and responsibility. This indicates that human, financial and information resources are a concern in implementation. It requires commitment, transparency and assigning roles and responsibility. The government cannot do it alone. A partnership is needed to promote urban agriculture and land use planning for reduced poverty and for subsequent implementation, monitoring and review (Figure 10.1). However, regulatory guidelines for the planning of new urban developments may not be applicable when upgrading is carried out in old developed informal settlements in urban and periurban areas. Where these have put land to intensive use, and layouts are more informal than in officially planned areas, the imposition of regulatory guidelines in full is impossible. This requires flexible and agreed planning space standards in a participatory manner to consolidate the object of the exercise.

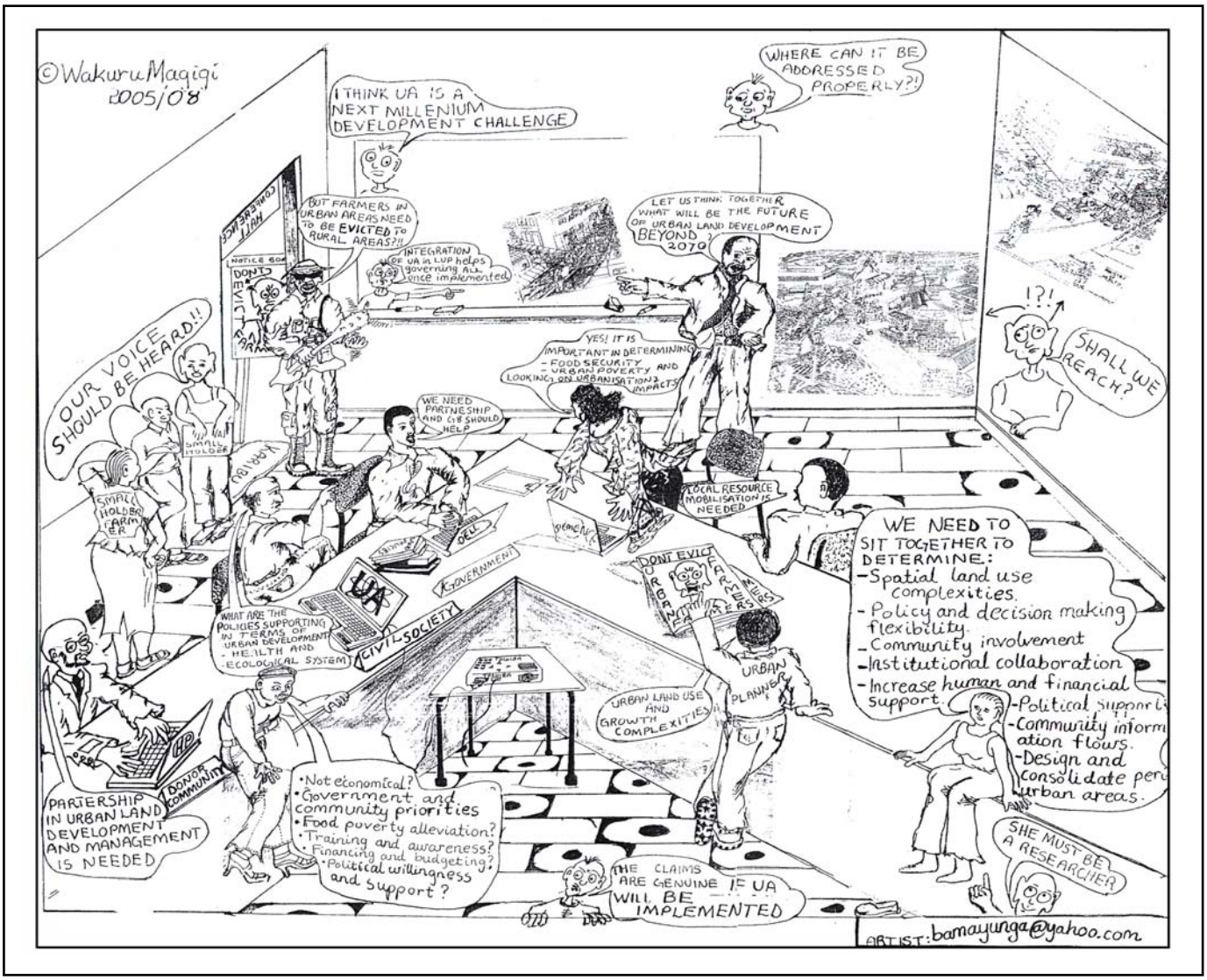


Figure 10.2 Partnership creation is needed among actors for effective urban agriculture integration in land use planning practise.

10.3 Conclusions

The study has empirically demonstrated that integrating urban agriculture in spatial land use planning processes and structures is an important strategy for improving land governance, and livelihoods of the urban poor and is a key strategy for urban environmental conservation in Dar Es Salaam. The general situation in Africa shows that urban agriculture is often regarded as misplaced rural enterprises that should not be located in the city, but the awareness of its contribution to food security, employment, poverty reduction and sustainable city development increases. Efforts of local authorities can be observed in a number of African cities including Dar Es Salaam influenced by urbanisation process.

Urbanization in Africa shows unguided land development, poor policy and legislature enforcement, outdated policy inherited from colonial period and inadequate community involvement in spatial land use planning processes. This uncontrolled situation increases urban poverty, food insecurity, unemployment in African cities. The implications generated by these factors suggest that poor urban land governance is not the only cause, but rather the weakness of planning institutions to realise and adapt to the new challenges with flexibility.They are also caused by the inability of planning and development institutions to adapt to new and local challenges that urban agriculture presents in settlement growth and development processes. The study also describes some of the exceptions with legislative and policy in theory and their enforcement in practice towards coordinating land use planning processes and controlling urban agriculture. In fact, the land use planning, policy enforcement and management of urban land calls for good governance in Sub-Saharan African cities including Dar Es Salaam. Good land use plans can only be implemented and enforced effectively if there is a good governance system in place where community involvement and partnership are central. In addition, political support, information access and awareness campaigns are essential. Likewise, it is noted that the use of waste water in agriculture can help communities to grow more food and make use of precious water and nutrient resources particularly domestic waste water than industrial. However, it should be done safely to maximise public health gains and environmental benefits.

The problems associated with land use planning and urban agriculture implementation are caused by a centralised system of urban planning in the country. Agricultural land is not reserved in land use plans and poor technology for wastewater management and sanitation systems is common. These may be addressed through a decentralised system of urban planning, public-private partnership and settlement upgrading through land regularisation where resource mobilization and cost sharing is important. Similarly, it requires that planning institutions involve different stakeholders including smallholder farmers to ensure that everyone’s views are represented. Besides, it requires planning institutions to have the knowledge and capacity to ensure sustainable use of local resources and land delivery systems. The planning institutions need the power and the legal basis to allow them to negotiate effectively with private institutions and to make them responsible. This is because the smallholder farmers have little power to influence private institutions and development partners.

In daily reality, decision making in land use planning is a chaotic, with poor institutional linkages in decision-making, under-representation and political vested interest. This limits possible actions in addressing problems of urban agriculture and spatial land use planning. Similarly, voices of the various stakeholders neither are taken into account nor balanced to meet required planning guidelines. Balancing the voices and commitment in decision making in land use planning and infrastructure allocation is essential. This ensures “*The rule of law*”, through which the rights and entitlements of the

urban poor may be protected. This implies that accountability and transparency to citizens and planning institutions in land use planning, land delivery system, subdivision and use are vital.

The study shows that urban agriculture has always been part of urban settlements' development. In the case study settlements many urban inhabitants turn to it as part of their livelihood strategy. Moreover, urban agriculture is important for several purposes, among them food safety and its contribution to the 'greening' of cities. Although the quantity of food produced by urban farming does not match up to that coming from outside the city, its impact is quite considerable. Yet national, city and municipal policy makers and managers including planners only partially acknowledge this important role. Subsequently exclusion of urban agriculture land in land use planning output is common in practise. In addition, inadequate extension services, poor institutional collaborations and growing construction industry in the city contribute to the decreasing of agriculture land. This poses several key challenges for urban farming implementation in linking theory to practise taking place in Dar Es Salaam and other Sub-Saharan Africa cities. Setting limits on the forms, scale, and suitable land allocation for urban agriculture are also potential for integration.

The question of vulnerability of smallholder farmers is based on access to land. The more the farming activities are allocated within the city the more the smallholder farmers are susceptible to eviction and harassment by the city council compared to those smallholder farmers in periurban areas. This has shown the potential of consolidating periurban land for urban farming with less housing and population densification and with available land. In addition, excessive housing densification in urban informal settlements requires restriction of farming as sewerage and sanitation facilities and infrastructure are inadequate and under pressure. The excessive densification has negative effects on public health including in-house crowding, pollution and poor sanitation. Cases of pollution of land and water through household and industrial waste are known to reduce the quality and viability of urban farming activities. Environmental conservation through settlements upgrading is essential in this context.

On policy issues the study shows the majority of smallholder farmers do not know the existence of safety nets in legislative documents. These safety nets are designed to protect smallholder farmers involving in urban agriculture from eviction, discrimination, pollution and exploitation. In addition, the local government institutions understand the food and unemployment crisis in the city. To exploit these potentials, putting in place a guiding framework for provision and quality control may help to ensure land use planning processes and structures that support urban agriculture within city land governance system. In both cases the formation and strengthening of social capital particularly of smallholder farmers and their associations including CBO's in their settlements is essential. The formation acts as the first step towards organising themselves and in improving their settlements through upgrading. In the design for settlement upgrading projects, development of new settlements and use of public open spaces, professionals may adopt appropriate standards for different infrastructure, and land uses based on resource projections and assessments. Apart from that, they may propose strategies that integrate various forms of urban agriculture and monitoring and review of land use plans as a necessity to improve smallholder farmers' livelihoods. This may consider accessibility, infrastructure, and land compatibility principles criteria for effective integration of urban agriculture in land use planning.

The theoretical framework used in the study has been reviewed. The main finding is that due to the different contexts, the periurban typology is partially relevant in Sub-Saharan African cities context. The land development coordination and control system in the city permits haphazard housing development, mixed land uses and uncontrolled migrations to the city. This differs with European

countries including Germany, where in the case of allotment gardens, agricultural land development in cities is perfectly controlled and monitored. Besides, location theory proves relevant and crucial in the issue of land use planning, distribution, coordination, accessibility and control. In this context decisions often should be made for the community using participatory approaches. In addition, location of urban agriculture based on the form, scale, infrastructure, density and marketing incentives is rational for its integration modalities.

Regarding the research methods, the identification of cases for in-depth interviews and the subsequent documentation of housing density and brainstorming the key merging issues during fieldwork has been time consuming. However, the results of the exercise are providing the required details at the individual, household, settlement and city levels.

Finally, the research hypotheses have been confirmed. Options for integrating urban agriculture in land use planning processes and structures identified in order to improve livelihoods of the urban poor have been elaborated. But because urbanisation processes are unguided through land use plans, they do not only become the major cause of land governance problems but also undermine urban agriculture based livelihoods consolidation in practice. This creates more doubts on health, environment and poverty reduction in future land development processes. Particularly, with increasing housing investment, land uses and population pressure in Dar es Salaam need checks and balances to minimise the negative and maximise the positive implications for improved city land governance.

In supporting the foregoing remarks, for the unforeseeable future, urban agriculture sector growth is likely to remain an indispensable reality depicting urban land development in rapidly urbanising cities in Sub-Saharan Africa. Inclusion of urban agriculture based livelihoods in land use planning processes and structures including in decision making, preparation, implementation and monitoring is rational for improving the livelihoods of the urban poor-smallholder farmers. This can be achieved through but not limited to settlement upgrading, institutional collaborations, adopting participatory urban planning approaches, decentralising roles to local level and formulating platform for dialogue. Moreover, strengthening smallholder organization through institutionalisation and giving them a voice in the political dialogue is crucial. These options can be effective when the government may wish to enforce policy and legislatives in place and review the same, involve different actors in decision making processes and enhance information and communication awareness. Others include use of treated wastewater technology for farming, granting long term tenure security, improving accessibility and adopting flexible planning standards. The study concludes that urban planners and policy makers have little choice but to ensconce and consolidate the emerging forms of urban agriculture based livelihoods as a land use planning practise within a guided planning framework. If the urban agriculture forms are not guided, then the negative effects in the long run can undermine the livelihood of the urban poor and damage environmental quality. Thus, there is an urgent need to guide the processes and strengthen institutional structures and linkages in land use planning practises for improving urban land governance in Dar Es Salaam.

REFERENCES

Abbott, J. (2002): A Method-Based Planning Framework for Informal Settlement Upgrading. *Habitat International*, **26**(3), Pg.317-333.

Abbott, J., & Douglas, D. (2003): The Use of Longitudinal Spatial Analyses of Informal Settlements in Urban Development Planning. *Development Southern Africa*, **20** (1), Pg. 1-19.

Adams, M., F. Kalabamu, A. and White, R. (2003): Land Policy and Practice in Botswana Governance Lessons for Southern Africa. *Austrian Journal of Development Studies)*, **19** (1), Pg 55-74.

Amos, F.J. (1986): Plans, Policies and Pragmatism: A Review of the Century of Physical Planning, *Habitat International*, **10** (4), Pg. 135-46.

Arimah, B.C. (1999): *User Modifications in Public Housing Estates: Some Findings from the Nigerian Scene*. In Awatona, A. (eds.). Housing Provision and Bottom up Approaches. Family Case Studies from Africa, Asia And South America, Ashgate, Aldershot.

Armstrong, A. (1987): Master Plans for Dar es Salaam-Tanzania, *Habitat International*, **11** (2), Pg.133-145.

Atukunda, G. (1998): An Analysis of the Impacts of IDRC Funded Research Projects on Urban Agriculture in Uganda. Makerere Institute of Social Research, University of Kampala, Kampala. Paper Presented at IDRC Cities Feeding People Workshop on Lessons Learned from Urban Agriculture Project in African Cities, Nairobi.

Ayres, W.A and McCalla, A.F. (1999): *Rural Development, Agriculture and Food Security*. World Bank, Washington.

Bakker, M. D, Gundel, S. and Sabel-Koschella, U. eds. (2000): Growing Cities, Growing Food. *Feldafing, German Foundation For International Development (DSE)*, Pg. 477-500.

Berger, P.L. (1963): Invitation to Sociology, Ringwood: Penguin

Binns, A. and Lynch, K., (1998): Feeding African Growing Cities into the 21st Century: The Potential of Urban Agriculture. *Journal of International Development, 10*, Pg. 777-793.

Briggs, J. and Mwamfupe, D. (1999): The Changing Nature of the Peri-Urban Zone in Africa: Evidence from Dar Es Salaam, Tanzania. *Scottish Geographical Journal*, **115**(4), Pg. 269-282.

Bryson, J.M. and Crosby, B.C. (1993): Policy Planning and the Design and Use of Forums, Arenas and Courts. *Environment Journal of Planning and Design*. **20**, Pg 12.

Bierschenk, T. (1988): Development Project as an Arena for Negotiation for Strategic Group: A Case Study from Benin: *In Sociological Ruralis*. Assen. Benin, **28** (2), Pg. 146-160.

Bless, C. and Higson, C.S. (1995): *Social Research Methods: An African Perspectives*, 2nd Ed. Juta and Co, Ltd, London.

Breheny, R. (1992): *Sustainable Development and Urban Form*. London.

Bunge, M. (1967): *Scientific Research*, Springer, BRD.

Burt, R. S. (2000): The Network Structure of Social Capital." *Research in Organizational Behavior*, eds. Robert, I. S. and Barry M. S. Greenwich, CT: JAI Press.

Catanese, A. and James, S. eds.(1988): *Urban Planning*. New York: McGraw-Hill.

Cooley, C. H. (1956): *Human Nature and the Social Order*. Glencoe, Ill: Free Press. Notes: Original Edition, Scribner, 1922.

Cook, T. D. and Donaldo T, C. (1979): *Quas Experiment: Design and Analysis*. Issues for Field Settings. Chicago: Rand McNally.

Christensen, K. (1993): Teaching Savvy. *Journal of Planning Education and Research*. **12** (3), Pg 202-212.

Clarke, G. (1994): Re-appraising the Urban Planning Process as an Instrument for Sustainable Urban Development and Management, *A Paper Presented in a Reappraisal of the Urban Planning Process*, Habitat-Nairobi.

Clay and Schaffer. (1984): *Room for Maneuver; An Exploration of Public Policy in Agricultural and Rural Development*, Heinemann Educational Books, London.

Development Assistance Committee (DAC). (2000): The Comprehensive Development Framework and National Strategies for Sustainable Development: Towards Convergence; *Workshop on Poverty Reduction Strategies held from 28-29 November*, Paris.

Dar Es Salaam City Council. (1999): Strategic Urban Development Planning Framework (SUDP), Stakeholders' Edition, Dar Es Salaam.

David, R. (1995): *Sustainable Development: An Introduction Guide*, Earth Scan Publication Ltd.UK

Dowall, D.E. and Clark, G. (1996): *A Framework for Reforming Urban Land Policies In Developing Countries.* Urban Management Programme Paper 7, World Bank, Washington DC.

Dicken, Lloyd. (1990): *Location in Space: Theoretical Perspectives in Economic Geography.*3rd:ed. Upplagan. New York.

Douglas, I. (1983): *The Urban Environment*, Edward Arnold, London.

Domhoff, G. W. (1967): *Who Rules America?* Englewood Cliffs, N.J.: Prentice-Hall.

Dongus, S**.,**Dickson Nyika, Khadija Kannady, Deo Mtasiwa, Hassan Mshinda, Ulrika Fillinger, Axel, W. Drescher, Marcel Tanner, Marcia C. Castro and Gerry, F.Killeen. (2007) : Participatory Mapping of Target Areas to Enable Operational Larval Source Management to Suppress Malaria Vector Mosquitoes in Dar Es Salaam, Tanzania, Accessed on 16th October, 2007 at *http://www.ij-healthgeographics.com/content/6/1/37*.

Dongus, S. (2000): Vegetable Production on Open Spaces in Dar es Salaam - Spatial Changes from 1992 to 1999 , Accessed on 27 November, 2005 at *http://www.cityfarmer.org/daressalaam.html*

Dorward, A., Poole N., Morrisson, J., Kydde, J. and Urey, I. (2003): Markets, Institutions and Technology: Missing Links in Livelihoods Analysis. *Development Policy Review*, 21(3), Pg. 319-332.

Drescher, A.W., Holmer, R.J. and Iaquinta, D.L. (2006): Urban Home Gardens and Allotment Gardens for Sustainable Livelihoods: Management Strategies and Institutional Environment: In Kumar, B.B and Nair, P.K.R (Eds.); *Tropical Home gardens, SPRINGER* Netherlands. Pg. 317-338.

Drescher, A.W., and Iaquinta, D. (2003): Urbanization – Linking Development Across the Changing Landscape. Economic and Social Department Publication (ESAC), FAO, Rome.

Drescher, A.W. (2001): The German allotment gardens - a model for poverty alleviation and food security in Southern African Cities? Proceedings of the Sub-Regional Expert Meeting on Urban Horticulture, Stellenbosch, South Africa, January 15 – 19, 2001, FAO/University of Stellenbosch, (2001):159-167. Accessed at online: http://www.cityfarmer.org/germanAllot.html.

Drescher, A.W. (2001): The integration of Urban Agriculture into Urban Planning – An Analysis Of the Current Status and Constraints. In: Annotated Bibliography on Urban Agriculture. ETC Urban Agriculture Programme & Swedish International development Agency (SIDA), Leusden, The Netherlands: 343-357. Auch online: http://www.ruaf.org/bibliography/annotated_bibliography.zip

Drescher, A.W., Dittrich, C. and Kruger, F. eds. (2000): Urbanisation, Vulnerability and Resource Management in Developing Countries, ISSN 0949-6645, *APT*, Freiburg-Germany.

Drescher, A.W. and Iaquinta, D. (1999): Urban and Periurban Agriculture: A New Challenge for the UN Food and Agriculture Organisation (FAO). FAO - *Internal report*. Rome.

Ensminger, J. (2000): Experimental Economics in the Bush: Why Institutions Matter. Chapter 13 in Menard C. (ed.) *Institutions, Contracts and Organizations: Perspectives from New Institutional Economics*. Edward Elgar, Cheltenham, UK.

Ebenezer Howard. (1878): Garden City Concept, Princeton University Press, UK.

Faludi, A. (1987): *A Decision Centred View of Environmental Planning*. Pergamon Press. Oxford

Faludi, A. (1984): *Planning Theory.* 4:e Upplagan. London.

Faludi, A. (1970): The Planning Environment and the Meaning of 'Planning'. *Regional Studies,* **1** (4), Pg 1-9.

Farvaque, C. and Godwin, L. (1998): *The Future of African Cities: Challenges and Priorities for Urban Development.* Washington: International Bank for Reconstruction and Development, the World Bank.

Farvacque, C. and McAuslan, P. (1992): *Reforming Urban Land Polices and Institutions in Developing Countries (UMP5).* Washington, D.C. World Bank/UNDP/UNCHS.

Fekade, W. (2000): Deficits of Formal Urban Land Management and Informal Responses Under Rapid Urban Growth: An Interpretive Perspective. *Habitat International*, **24**, Pg 127-150.

Fisher, F. and Forester, J. eds. (1993): *The argumentative turn in policy analysis and Planning*. Duke University Press, London.

Furet, F. (1971): Quantitative History, Daedalus, **100** Pg. 151-167.

Flyvbjerg, B. (1998): Rationality and Power. Democracy in Practice. The University of Chicago Press, Chicago, London.

Friedmann, J. (1987): *Planning in the Public Domain: From Knowledge to Actio*n. Princeton: Princeton University Press.

Galster, G., Hanson,R., Woliman,H., Coleman, S., and Freihage, J.(2001): Wrestling Sprawl to the Ground: Defining and Measuring an Elusive Concept. In *Housing Policy Debate*, Vol. **12**, No.**4**, Pg 681-717.

Garbett, C.G. (1970): *The Analysis of Social Situations:* In Man, London. Pg.214-237.

Goba Settlement. (2007): Ward Population Census Report, Unpublished, Dar es Salaam.

Goglio, S. (1997): *The Concept of Market from a Historical Point of View*. In: Emergence and Evolution of Markets, Brezinski & Fritsch (eds.), Edward Elgar.

Ghosh, B.N. (1982): Scientific Method and Social Research, New Delhi: Sterling Publishers Pvt. Ltd.

Green, Paul E. (1978): Analysing Multivariate Data, Hinsdale, III.: Dryden Press.

Hardoy, J., Diana E. M. and Satterthwaite, D. (2001): *Environmental Problems in an Urbanizing World: Finding Solutions for Cities in Africa, Asia and Latin America*, Earthscan Publications, London, 470 pages.

Halla, F. (2002 b)*:* A Century of Urban Development Planning for Dar es Salaam City in Tanzania. *The Journal of Building and Land Development.* **9** (1), Pg. 28-46.

Hall. P. (1988): *Cities of Tomorrow. An Intellectual History of Urban Planning and Design in the Twentieth Century*. London

Handy and Niemeier. (1997): Measuring Accessibility: An Exploration of Issues and Alternatives. *Environment and Planning*, **29**, Pg. 1175-1194.

Hay, G.J., Castilla, G., M. Wulder, M.A., and Ruiz, J.R., (2005): An automated object-based approach for the multiscale image segmentation of forest scenes. *International Journal of Applied Earth Observation and Geoinformation*, **7**, Pg 339-359.

Healey, P. (1998): Building Institutional Capacity through Collaborative approaches in Urban Planning. *In Environment and Planning*, **30** (A), Pg 1531-1546.

Healey, P. (1997): *Collaborative Planning: Shaping Places in Fragmented Societies*. Mcmillian, London.

Hendricks, C. (2006): *Improving Schools through Action Research*, Boston: Pearson

Hobley, M.and Shields, D. (2000): *The Reality of Trying to Transform Structures and Processes: Forestry in Rural Livelihoods.* ODI Sustainable Livelihoods Working Paper 132. ODI, London, U.K.

Higson-Smith, C. and Bless, C. (1995): Fundamentals of Social Research Methods: An African Perspectives.2nd Ed. Jute- CapeTown, South Africa.

Home, R. K. (2001): Eating Farmland, Growing Houses': Periurban Settlements and Customary Land Tenure in Botswana, Southern Africa. *Trialog*, **69** Pg. 30-35.

Huberman, A.M and Miles, M.B. (1998): Qualitative Data Analysis: An expanded Source Book (2nd Ed.): Sage Publications.

Iaquinta, D. and Drescher, A.W. (2000): Defining Peri-urban: Towards Guidelines for Understanding Rural-Urban Linkages and their Connection to institutional Contexts. *Land Reform 2000/2*, FAO, Rome: Pg. 8-27.

IFPRI. (2002): *Living in the City: Challenges and Options for the Urban Poor. IFPRI*, Washington, DC, USA.

Ilari, K., Merja K. & Kaisa Lähteenmäki,S.(2001:4): *SWOT-analysis as a basis for regional strategies*, Nordregio-Stockholm, Sweden, Pg.1-84.

Inocencio, A., Sally H. and Merrey D. J. (2003): *Innovative Approaches to Agricultural Water Use for Improving Food Security in Sub-Saharan Africa*, Colombo Stri Lanka, IWA.

International Monetary Fund (IMF). (2004): Regional Economic Outlook Sub-Saharan Africa Retrieved from (Internet: http://www.imf.org/external/pubs/ft/AFR/REO/2005/eng/01/SSA).

International Monetary Fund (IMF). (2002): Comprehensive Review of the Poverty Reduction Strategy Paper (PRSP) Approach, World Bank New York.

Inness, J. (1998): View Point: Challenge and Creativity in Post-modern Planning. *Town Planning Review*. **69**, Pg 2.

Jacobs, J. (1961): *The Death and Life of Great American Cities*, Random,New York.

Jacobi, P. and Amend J. (1997): Vegetable Farming in Dar es Salaam: An Important Source of Income, and not only for Poor: *Agriculture and Rural Development*, **4,** (2/97), Pg. 52-54

Jacobi, P., Amend, J. and Kiango, S. (2000): Urban Agriculture in Dar es Salaam: Providing for an Indispensable part of the Diet, in Bakker *et al* (2000), Pg. 257-284

Jenkins, D. P. (1987): Periurban Land Tenure: Problems, *Southern Africa*, **4,** Pg. 582-586.

Johnson, W. (1989): *The Politics of Urban Planning*. New York: Paragon House.

Kenny, A. (1973): *Wittgenstein*, Penguin, UK

Kironde, J.M. (1994): The Evolution of Land Use Structure of Dar es Salaam 1890-1990. A Study of the Effects of Land Policy, University of Nairobi. PhD Thesis.

Koc, M., MacRae, R., Mougeo, L.J.A and Welsh, J. (1999): Introduction: Food Security is a Global Concern. In Idem. (eds.), For Hunger-Proof Cities: Sustainable Urban Food Systems. Ottawa: IDRC.

Kombe, W. J. (2002): Land Use Planning Challenges in Peri-Urban Areas in Tanzania. *Spring Research Series*, Vol**.29**, Dortmund.

Kombe, W., and Kreibich V. (2000): Reconciling Informal and Formal Land Management. An Agenda for Improving Tenure Security and Urban Governance in Poor Countries', *Habitat International*, Vol. **24**, Pg. 231-240.

Kombe, W. J. (1995): Formal and Informal Land Management in Tanzania. The Case of Dar es Salaam City, *Spring Research Series* Vol.**13**, Dortmund.

Kombe W. J. (1995): Service Provision Governance in the Peri Urban Interface of the Metropolitan Areas, The Case Study of Dar es Salaam, *UCLAS-DPU Research Project Report*, Dar Es Salaam.

Kreibich, V. and Olima, W.H.A. (Eds). (2002): Urban Land Manaement in Africa. *Spring Research Series*, Vol.**40**, Dortmund.

Kyessi, A. (1997): City Expansion and Urban Agriculture in Dar es Salaam: Lessons for Planning, *Journal of Building and Land Development* **4** (2) P 28-37.

Kuhlman, T. (2000): *Good bye to Planning? Reflections on the Case of Regional Planning in Poor Countries in a New-Institutional Framework*, Vrije Universiteit, Amsterdam, Pg 1-20

Kuhn, T. (1970): *The Structure of Scientific Revolutions*, University of Chicago, USA.

Kothari, C.R., (1984): Quantitative Techniques, 2nd eds.,: Vikas Publishing House Pvt. Ltd. New Delhi.

Kulaba, S.M. (1986): Urban Growth and the Management of Urban Reforms, Finance, Service and Housing in Tanzania, Unpublished research report. Dar es Salaam: Ardhi Institute, Centre of Housing Studies.

Lerise, F. (1996): Planning at the End of the River: Land and Water Use Management in Chekereni Moshi District, Tanzania,. Royal Danish Academy, Copenhagen, PhD Thesis.

Lee-Smith, D. (1998): African Urban Policy: Issues and Priority. *A paper presented at International Conferences on Urban Agriculture Policy in Southern Africa*, Technikon, Pretoria, 3-5 March 1998

Liviga and Mekacha. (1998): Youth Migration and Poverty Alleviation: A Case Study of Petty Traders (Wamachinga) in Dar es Salaam. *REPOA Research Report No*. 98.5.

Lynch, K. (1990): *City and Regional Planning. In City sense and City Design*: Writings and Projects of Kelvin Lynch, eds. Tridib Banerjee and Michael Southworth. Cambridge, MA: The MIT Press. Pg. 535-562

Lynch, K., and Gary, H. (1984): *Site Planning*. 3rd edition. Cambridge: The MIT Press.

Lynch, K. (1981): *Good City Form*. Cambridge, MA: The MIT Press.

Lundequist, J. (1999): *Tools for Scientific Thinking.* Kungl Tekniska Hogskolan, Stockholm.

Lupala, A. (2002): Peri-Urban Land Management in the Rapidly Growing Cities: The case of Dar es Salaam. *SPRING Research Series* No. **32**, Dortmund-Germany

Mabogunje, A.L. (1992): *Perspective on Urban Land and Urban Management Policies in sub-Saharan Africa.* World Bank Technical Paper No. 196, World Bank, Washington, D.C.

Mabogunje, A. L. (2000) : Institutional Radicalization, The State, and the Development Process in Africa." Development Policy Centre, Ibadan, Nigeria. Also available at *Proceedings of National Academy of Sciences, USA*, www.pnas.orgycgiydoiy10.1073ypnas.

Madaleno, I.M. (2000b): Urban Agriculture in Brazil: a Tale of two Cities. *Trialog*, **65**(2), Pg. 24-27.

Magigi, W. and Majani, B.B.K. (2006): Community Involvement in Land Regularisation for Informal Settlements in Tanzania. A Strategy for enhancing security of Tenure in Residential Neighborhoods. *Habitat International*,.**30** (4), Pg. 1060.

Majani, B.B. K. (2000): Institutionalizing Environmental Planning and Management. The Institutional Economics of Solid Waste Management in Tanzania, PhD Thesis, *SPRING research Series*, Vol.**28**, Dortmund.

Mattingly, M. (1996): Private Development and Public Management of Urban Land. A Case Study of Nepal', *In Land use Policy*, **13** (2), Pg.132.

Meshack, M.V. (1992): Planning from Below, Myth and Chance: IRPUD. Dortmund.

Mills,G.E. (2007): Action Research, 3rd Edition, NewJersey:Person.

Mghweno, J.M. (1999): Informal Settlements in Tanzania; The magnitude of the Problem. *Paper presented at the International Conference On the Interaction between Formal and Informal Urban Land Management in Africa* at Kilimanjaro Hotel, 25th-26th Nov, 1999.

Mitlin, D and Satterthwaite,D.(1996): Sustainable Development and Cities. In Pugh, C. eds., Sustainability, *The environmental and Urbanisation*, Earth Scan, Pg 23-62.

Mougeot, L.J.A. (2000): *Urban Agriculture, Definition, Presence, Potentials and Risks*" in Niko, Bakker eds.(2000), Feldafing, German Foundation for International Development (DSE).
Mougeot, L.J.A.ed. (2005): *The Social, Political and Environmental Dimensions of Urban Agriculture,* Earthscan, London. Sterling VA.
Morris, A.J.E. (1979): *History of Urban Form*, Godwin.
Mlozi, M.R/ Lupanga,I. J./ Mvena, Z.S. (1992): Urban Agriculture as a Survival Strategy in Tanzania. In Bakker. J/Pedersen, P.(eds); *The Rural Urban Interface in Africa-Expansion and Adaptation*. Nordiska Africaka institutet, Uppsala. Pg. 284-294.
Mumford, L. (1961): *The City in History*, Harcourt, Brace, Jovanovich, Pg. 1-8.
Nachmias, D and Nachmias, C. (1981): *Research methods in Social sciences,* St. Martins, NY, USA.
Nachmias, D and Nachmias, C. (1976): *Research methods in Social sciences,* Edward Anold, London.
North, D.C. (2000): A Revolution in Economics. Chapter 4 in C. Menard (ed.) *Institutions, Contracts and Organizations: Perspectives from New Institutional Economics*. Edward Elgar, Cheltenham, UK.
North, D. (1997): The Contribution of the New Institutional Economics to an Understanding of the Transition Problem. 1997 UNU/WIDER Annual Lecture, http://www.wider.unu.edu/northpl.htm.
North, D. (1990): Institutions, Institutional Change and Economic Performance. New York: Cambridge University Press.
Ngware, S and Kironde, J., eds. (2000): *Urbanising Tanzania: Issues, Initiates and Priorities.* DUP, UDSM, Tanzania.
Nkwae, B. (2006): *Conceptual Framework for Modelling and Analysing Periurban Land Problems in Southern Africa*. Ph.D. dissertation, Department of Geodesy and Geomatics Engineering, Technical Report No. 235, University of New Brunswick, Fredericton, New Brunswick, Canada.
Nordenstam, T. (1975): *Forskningens Yrkesetik,* Svenska Unescoradet, Stockholm
Nurul Amin, A. (1996): The informal Sector Paradigm: Analytical Contributions an Development Role. *Regional Development Dialogue*, **17** (1), Pg .42.
Nugent, R. (2000): The Impacts of Urban Agriculture on the Households and Local Economies
OECD. (1998): *Co-operative Approaches to Sustainable Agriculture*. Paris.
Olivier de Sardan, J.P. (2005): *Anthropology and Development,* Zed Books, London. Pg. 238-244
Olson, M. (1965): *The Logic of Collective Action. Public Goods and the Theory of Goods*. Harvard University Press, Cambridge.
Ostrom, E. (2001): Social Capital and Collective Action. *Presentation for the German Bundestag. Enquete Commission on the Future of Civic Activities, June 25, 2001*, Berlin.
Ostrom, E. (1992): *Crafting Institutions for Self-Governing Irrigation Systems.* ICS Press.
Ostrom, E. (1990): Governing the Commons: The Evaluation of Institutions for Collective Action, Cambridge University Press, Cambridge.
Patton, M. (1987): *How to Use Qualitative Methods In Evaluations,* SAGE Publications, UK.
Pierson, P. (1995): Fragmented Welfare States: Federal Institutions and the Development of Social Policy", *Governance: An International Journal of Policy and Administration* **8**(4). Pg.449-478.
Polanyi, M. (1958): Personal Knowledge: Harper and Row, New York.
Platteau, J.P. (1994): Behind the Market Stage where real Societies Exists; Part 1 the Role of Public and Private Order Institutions, *The Journal of Development Studies,* **30** (3), Pg. 533-577.
Pretty, J.N. and Ward. (2001): What is Social Capital, *World Development,* **29** (2), Pg. 209-227.
Pretty, J.N. (1995): Participatory Learning for Sustainable Agriculture. *World Development,* **23** (8), Pg. 1247-1263.
Rakodi, C. and Lloyd-Jones, T. eds. (2002): Urban Livelihoods, Earthscan, London.

Rakodi, C. (2001): Forget planning, put politics first? priorities for urban management in developing countries. *International Journal of Applied Earth Observation and Geoinformation,* **3(3)**, Pg. 209-223.

Rakodi, C. and Devas, N. (1993): *Managing Fast Growing Cities. New Approaches to Urban Planning and Management in the Developing World,* Longman, New York.

Robert, D.P. (1994): *Making Democracy Work, Civic Traditions in Modern Italy*. Princeton, New Jersey.

Rondinelli, D. (1993): *Development Project as Policy Experiments: An Adoptive Approach to development Administration*. 2nd edition. London: Routledge.

RUAF. (2006): RUAF Update #6", Resource Centres on Urban Agriculture and Food Security (RUAF), http://www.ruaf.org.

Sanderson, D. (2000): Cities , Disasters and Livelihoods. In Environment and Urbanisation, **12** (2) Pg.93-102.

Satterthwaite, D. (2005): Meeting the MDGs in urban areas; the forgotten role of local organizations", *Journal of International Affairs*, **58** (2), Pg. 87-112.

Sawio, C. (1998): Managing Urban Agriculture in Dar es Salaam Cities. Cities Feeding People Report **20**. Ottawa:IDRC.

Sawio, C. (1993): Feeding the Urban Masses? Towards an understanding Of The Dynamics Of Urban Agriculture and Land Use Change in Dar es salaam, Tanzania. PhD thesis, Graduate School of Geography, Clark University, Worcester, MA, USA.

Sen, A. (1984): Poverty and Famines: An Essay on Entitlement and Deprivation, Oxford University Press.

Simion, J. (1969): *Basic Research Methods in Social Science: The Art of Empirical Investigation:* Random House, New York.

Simba, I. C. (1998): *Land Tenure and Housing in Tanzania.* In Tibaijuka, A.K. (ed.)(1998), Social Crisis of the 1990s. Strategic for Sustainable Systems in Tanzania, Ashgate.

Shankland, A. (2000): *Analysing Policy for Sustainable Livelihoods*. Institute of Development Studies Report 49, IDS, Brington.

Shivji Issa. (1999): A Legal Quagmire: Tanzania's Regulation of Land Tenure (Establishment of Village Land Act of 1992, DUP, Dar es Salaam.

Smith, D.M. (1998): Urban Food System and the Poor in Developing Countries. Transaction of the Institute of British Geographer **23**: Pg. 207-219.

Spellerberg, A. (2001): Framework for the Measurement of Social Capital in New Zealand, Wellington , New Zealand.

Stenlas, N. (1999): Organisation, Management and Social network. Theories of Relevance to Partnership. In Westholm, E. Moseley, M. and Stenlas, N. (eds.), Local Partnership and Rural Development in Europe, Dalarna Research Institute, Sweden, pg. 209-228.

Stren, R.E. and White, R.R. (1989): *African Cities in Crisis: Managing Rapid Urban Growth*. London: Westview Press.

Sumberg, J. (1999): The Dar es Salaam Milk System: Dynamics of Change and Sustainability. Habitat International **23** (2):189-200.

Tanzania Food and Nutrition Centre (TFNC). (2006): Food Security Status in Tanzania, Unpublished Document, Dar Es Salaam.

Tibaijuka, A. (2004): Urban and Periurban Land Development and Land Use Conflict. Paper Presented at the Land in Africa Conference, 8-9 November 2004, Church House, London. Accessed on December 2004, http://www.iied.org/docs/aboutiied/Working_Group_3_Report_Back.pdf

Topfer, K. (2002): Re-assessment of Urban Planning and Development Regulations in Africa Cities, Habitat, Nairobi. at http://www.unchs.org/unchs/english/urbanpl/african/africa.htm

The Guardian, 1 October, 1997, 11 March 2000, 3 November 2000 and 19, April, 2001.

United Republic of Tanzania (URT). (2006): Land Use Planning Act, Government Printer, Dar es Salaam

United Republic of Tanzania (URT), (2008): Speech By The Minister for Finance and Economic Affairs Honourable Mustafa Haidi Mkulo (Mp), Introducing to the National Assembly, the Estimates of Government Revenue and Expenditure for the Financial Year 2008/09, Economic Indicators Report on 12th June, 2008, Government Printer, Dar Es Salaam-Tanzania, Pg 29.

United Republic of Tanzania (URT). (2006): Urban Planning Act, Government Printer, Dar es Salaam.

United Republic of Tanzania (URT). (2004): Poverty Reduction Strategy, The Third Progress Report 2002/2003. Government printer, Dar Es Salaam, Tanzania. Pg. 13-16.

United Republic of Tanzania (URT). (2003): Population and Human Population Census Report Government printer, Dar Es Salaam, Tanzania.

United Republic of Tanzania (URT). (2002):National Household Budget Survey and Gross Domestic Products, Government printer, Dar Es Salaam, Tanzania.

United Republic of Tanzania (URT). (2002): Population and Housing Census General Report, Government Printer, Dar Es Salaam.

United Republic of Tanzania, (URT). (2000): Human Settlement Development Policy, Government Printer, Dar Es Salaam.

United Republic of Tanzania (URT). (2001): Agriculture Sector Development Strategy (Accessed from *www.agriculture.go.tz)* Pg. 1-76.

United Republic of Tanzania (URT). (1999): Land Act, Government Printer, Dar Es Salaam.

United Republic of Tanzania(URT). (1999): Government Notices, Orders, Technical Instructions and Circular Commonly Referred to in Pursuance of Human Settlements Development, Dar Es Salaam.

United Republic of Tanzania (URT). (1988): Population and Human Population Census Report Government printer, Dar Es Salaam, Tanzania.

United Republic of Tanzania(URT). (1982): Local Government Act No.7 and 8, Government Printer, Dar Es Salaam.

United Republic of Tanzania(URT). (1979): Dar es Salaam Master Plan, Government Printer, Dar Es Salaam.

United Republic of Tanzania (URT). (1978): Population and Human Population Census Report Government printer, Dar Es Salaam Tanzania.

United Republic of Tanzania (URT). (1956): Town and Country Planning Ordinance-Cap 378 Revised in 1961, Government Printer, Dar Es Salaam.

UN-Habitat. (2007): State of the World's Cities 2006/7-The millennium Development Goals and Urban Sustainability: 30 Years of Shaping the Habitat Agenda, Earth Scan, London.

UN-Habitat. (2007): Land Governance, Issues and Perspectives from UN-HABITAT. Paper presented to the international workshop by *Szilard Fricska on Global Campaign for Secure Tenure,* Oslo, January 2007.

UN-Habitat. (2004a): Dialogue on Urban Sustainability' *Working Paper of the Committees of Permanent Representatives to UN-Habitat for World Urban Forum 2004 (HSP/WUF/2/10, Draft 17/03/04.*

UNCHS. (1994): Sustainable Cities: Concepts and Applications for a United Nations Programme, Habitat, Nairobi.

UNDP. (2006): Human Development Report; Beyond Scarcity: Power, Poverty and the Global Water Crisis. New York.

UNDP. (1998): State of the World Population Report, New York: UNFP.

UNDP. (1996): Urban Agriculture: Food, Jobs and Sustainable Cities. New York: UNDP.

UN-The Millennium Development Goals Report. (2007): Accessed on 30th July, 2007 from http://www.un.org/millenniumgoals/pdf/mdg2007.pdf.

Uphoff, N. (1986): Local Institutional Development: An Analytical Sourcebook with Cases. West Hartford: Kumarian Press.

Van Veenhuizen René., ed. (2006): Cities Farming for the Future, Urban Agriculture for Green and Productive Cities. Published by RUAF Foundation, IDRC and IIRR. http://www.ruaf.org/node/961 (Accessed on July 2006).

Van den Berg, L.M. and Van Veenhuizen René. (2005): Multiple Functions of Urban Agriculture. Editorial. In Urban Agriculture Magazine No.15, December 2005. RUAF, Leusden. The Netherlands.

Van den Berg, L.M. (2001): Urban Agriculture as the Combination of two impossible' though Sustainable Trends. In Kim, K., I, Bowler and C. Bryant (eds). Developing Sustainable Cities. Pusan National University Press.

Van den Berg, L.M. (2002): Urban Agriculture Between Allotment and Market Gardening: Contributions to the Sustainability of African and Asian. In Brebbia, C. et al., (eds). The Sustainability City II.

Velsen, J. (1978): Situation Analysis and the Extended Case Method: In Epistein (ed.), *The Craft of Anthropology*, Tavistock, London.

Verity, B. (2002): Social networks. *In*: Tech Buzz. from: http://www.verity.com/techbuzz/social.html (Accessed 20 October 2005).

Von Wright and Georg, H. (1971): Explanation and Understanding. Routledge and Kegan Paul, London.

Watts, M.J. & H.G. Bohle. (1993): The Space of Vulnerability: The Causal Structure of Hunger and Famine. Progress in Human Geography **17** (1) Pg. 43-67.

Wilson, W. (1997): *When Work Disappears: the World of the New Urban Poor*. New York:.

Williamson, O.E. (2000b): The New Institutional Economics: Taking Stock, Looking Ahead. *Journal of Economic Literature*, Vol. **38**, Pg. 595-613.

Williamson,O.E. (1996): The Mechanism of Governance. Oxford: Oxford University Press.

Wisner, B.; Blaikie, P.; Cannon, T. and Davis, I. (2004): *At risk: Natural hazards, People's Vulnerability And Disasters.* New York: Routledge.

World Health Organisation (WHO). (2006): *Guidelines for the Safe Use of Wastewater, Excreta and Grey water: Policy and Regulation Aspects*, Vol. **1**, Pg23, WHO France.

World Bank. (2006): *World Development Indicators 2006*, Washington, World Bank.

World Bank Institute (WBI). (2005): *Capacity for Development:* Development Outreach, World Bank Institute, USA.

Yin, R.K. (1994): *Case Study Research Design and Methods*, SAGE Publications, UK.

Yin, R.K. (1984): *Case Study Research-Design and Methods, Applied Social Research Methods Series*, Volume 5. Sage Publications. Califonia, USA.

Yin, R.K. and Ingrid, H. (1980): *Case Studies in Research Utilization*: American Institutes for Research, Washington.

DEFINITION OF TERMS

Accessibility refers to the opportunity for actual use of available land by needy households or groups, taking into account administrative procedures and conflict resolution mechanisms.

Detailed planning scheme: Refers to a scheme prepared or adopted pursuant to the provisions of section 16 of Urban Planning Act of 2006.

General planning scheme: Means a scheme prepared pursuant to the provisions of section 11 of Urban Planning Act of 2006.

Hazardous land as per Land act 1999, 7(1), is land the development of which is likely to pose a danger to life or to lead to the degradation of or environmental destruction on that or contiguous land. It includes among others land specified by the appropriate authority as land which should not be developed because of its fragile nature or of its environmental significance.

Landholder: Refers to a holder of a granted right of occupancy or customary right of occupancy or derivative right of occupancy as per of Urban Planning Act of 2006.

Land use plan: Defined as any plan prepared or adopted by a planning authority and includes a resource management sector plan. Is a Town Planning Drawing (TPD) and is usually presented under a scale of but not limited to 1:1000; 1:1,250; 1:2,500; 1:5,000 and 1:7,500.

Periurban: This is conceptualised to include land inside, or at the fringes of urban areas and lands further away from the city. This may, in turn, include both urban and rural land that is formally or informally occupied. However, there is an increase in land transformed institutionally from rural to urban and there becomes in a state of transition from customary to statutory tenure in the urban setting

Policy: Is the set of procedure, rules and allocation mechanisms that provide the basis for programmes and services. Policies set priorities, and associated strategies allocate resources for their implementations. Policies are implemented through four types of instruments: Laws and regulations, economic measures, information and education, and assignment of rights and responsibilities for providing services (WHO, 2006).

Urban land: Means land within the boundaries of an urban authority as per the Urban Planning Act of 2006 of Tanzania.

Urban poor: In this context refers to smallholder farmers either tenants or landholder involving in off plot or in plot farming activities. The involvement is for increasing his/her income and non income satisfactions for the well-being of the family

Urban poverty: In this context is conceived as inability and reduced level of affordability i.e. income and non-income of the urban poor in organizing, accessing and utilizing potential assets for improving their lives and surroundings. These assets include physical (i.e. housing, water and land), funds, labour and access to information for improving livelihoods of the urban poor. Livelihood refers to activities done by human beings to sustain his/her life (Sen, 1984). Urban poverty and livelihoods understanding in this context becomes important as it helps to underscore the urban poor situation and links to other planning institutions for sustainable land governance. Apart from that helped to explore the urban poor assets that can help them to access financial mortgages and mobilize resources for planning in urban context.

Urban area: Contextualized as an area declared by the government ripe for urban development. Town Planning Drawings, including land use plans are prepared in a declared urban area helping to coordinate and control haphazard urban land development. The land use plan is an outcome of urban land use planning processes where property boundaries are demarcated and public

facilities and utilities are allocated under agreed structures. Equally, conditions for land use changes are provided in the document where urban agriculture function is considered.

Urban agriculture: This is discussed widely (Bakker *et al*, 2000; Drescher *et al*, 2003). Here it is conceived as income and non income farming activities at in plot or off plot residential areas that helps to sustain lives of the urban poor. Urban agriculture acts as social capital for the urban poor in which its implementation, forms and location needs to be done in a sustainable way. Its effects to country efforts in promoting urban environmental conservation, food security, city land productivity and competitiveness is of significance. It is in this arena where land use planning processes and structures as a tool for sustainable land governance is explored. Land use planning is conceived as a process of directing, organizing, controlling and monitoring an orderly use of land. The objective is to ensure order and reduced land development conflicts for enhanced food security, health, land productivity and safety of urbanities for societal development.

Urban development refers to the development of agriculture land within the urban and periurban setting of the city

Urban growth and development refers to politically, economically and socially expanding of the urban infrastructure facilities and utilities, resources and income level that culminate into urban development. It also results in urbanization and industrialization processes with an urban setting

APPENDIX

GUIDELINE QUESTIONNAIRE

This questionnaire is intended for key informants: central and local governments, development partners, utility agencies, organizations, smallholder farmers and individual/groups in urban and periurban areas of the city of Dar Es Salaam. The name of the respondent(s) will not be recorded in the questionnaire and/or disclosed in the research report for the purpose of the confidentiality of the research.

GENERAL BACKGROUND

Name of organization/individual……..……Sex of Interviewee (M/F)……..……..,
Age……..…Occupation (tenant/owner)……Education level…….……
Location of farming lots…….Place of birth…….
Involvement in urban agriculture activities (Yes/No) …… …….……Reasons…….
Average size of plot……..…Status (married, widow, retrenchment personnel, single, organized group)……..….Year started living in the city……Living place……....

Theme 1: Understanding spatial land use planning practises

- How is spatial land use planning done and in which ways do different actors participate?
- What tools are used for spatial land use planning?
- Which institutions are responsible for the preparation, implementation and monitoring of land use planning?
- What are the procedures for and main components in the land use planning process?
- How does the decision making process take place in order to enable different actors involved in the land use planning process including initiation, declarations, implementations and allocation of land for smallholder farmers?
- How do smallholder farmers access land?
- What forms of land ownerships currently exist in the settlements (uncertainty of land tenure)?
- What are the roles played by the different actors?
- How do budget decisions take place and what are the allocation modalities?
- What are the conditions set for changes in land use?
- What are the urban planning space and infrastructure standards required for coordinating and controlling land development?
- What are the trends in housing development in the case study settlement areas?
- How does land development control take place in regards to:
  - Housing density control
  - Hazardous land and open space utilization
- How are the outputs disseminated to different actors, including local level actors?
- What tools are in place for evaluating and monitoring land use outputs?
- What are the procedures for obtaining urban agriculture permit?
- What are the fiscal and human resources practices to apprehend land use planning and urban agriculture in the City?
- Are you aware of any policies or guidelines guiding land development including urban agriculture?
- What are the voices of different actors in terms of the effectiveness of the land use planning process effectiveness and the implementation of the urban agriculture in the city?
- How can land use planning processes provide room for urban agriculture integration in order to improved land governance?

Theme 2: Understanding urban *agriculture* practice

Forms and production

- What types and forms of urban agriculture are practiced in the area?
- What quantities are produced per unit in the farming area?
- What is the smallholder farmers production trend in re to amaranths vegetable crops?
- How are the productions changing over time?
- Who are the producers (large or smallholder farmers, women, men, children, widow, retrenched people etc)?
- What is the spatial (extent) distribution of production?
- How do smallholder farmers access land and credit scheme to enhance production?
- What is the land tenure status and security of smallholder farmers involved in urban agriculture?
- What types of training and extension services do smallholder farmers receive?
- Who do smallholder farmers consult before starting any form of urban agriculture?
- Where do you farm? (in plots, off plots, in periurban areas)
- What are the practical experienced strength and opportunities from smallholder farmer than can help change?
- What are the problems facing smallholder farmers? (including those involving in amaranths production)

Inputs/Resources

- What are the smallholders' assets?
- How are financial mobilisations for the practise done?
- What are the external supports present?
- What quantities are used for production purposes? (Land, chemicals, fertilizers, water etc)
- How do smallholder farmers access services (including water and land for improving their productivity)
- What is the implication of the quantities of inputs on environment/risks associated with the form of urban agriculture based livelihoods including amaranths production?
- Do you access any financial institutions for credit scheme support?

Market and marketing

- Who are the buyers of urban agriculture products including amaranths
  - Domestic market? (rural, urban, region, income classes)
  - Export market
- Who are the sellers of smallholder farmers' products?
- Who are consumers of smallholder farmers' products and what are their perceptions?
- What is the market information situation and how is handled at different levels?
- Which strategies are used for communication and information flows?
- What technologies available to facilitate the practise?

Benefits

- How do you benefit from urban agriculture products? (including amaranths leaf vegetables)
- What activities do you perform other than urban agriculture in the area?
- Who owns the products and how do you share among the family members?

Costs

- What costs, associated with urban farming, do you experience in the area?

Theme 3: Understanding planning institutions, policy and decision making process

- Which institutions are responsible for urban agriculture land allocation and implementation and monitoring?
- How are smallholder farmers organised and what is the status of the working class?
- Is there a legal framework guiding urban agriculture implementation?
- What are the processes involved in acquiring land for urban agriculture?
- What are the suggested modes in which land acquisition can be sustainable for effective urban agriculture implementation?
- What are the factors hindering the practise?
- Who are the key actors?
- Who are the stakeholders?
- Is there demand for ideas among actors and stakeholders?
- What is their agenda/voices of planning institutions?
- How do smallholder farmers influence policy and the political context?
- How do different stakeholders perceive the problem?
- What key opportunities, threats, and constraints does the urban agriculture sector face?

Theme 4: Understanding urban land governance

- How does policy and decision-making take place in practise?
- How do different stakeholders act?
- How are the divergent are local practises and the actual policies in place?
- What are the weakness/ opportunities?
- Are the stakeholders voices relevant?

Theme 5: Integrated aspects

- How can urban agriculture production systems be developed and promoted in urban settings with reduced negative externalities?
- How can the legal and policy frameworks', budgeting and information mechanisms be coordinated and integrated into urban land governance?
- How can land use planning and urban agriculture be coordinated and controlled for sustained poverty reduction, environment, health, and urban land competitiveness?
- How best can urban agriculture be accommodated into urban settings for sustainable land governance?
- Who are the stakeholders?
- What networks already exist?
- Who are the connectors, salesmen, and consumers?
- What is the best way to transfer the information and resources?
- How does the geographical setting influences actors?