

Integrating and Implementing Urban Agriculture in Public Space into Land Use Planning: Sustainable Assessment, Cape Town, South Africa

Arch. GLORIA GAVIRIA SANCHEZ



Role in City's Development Agenda

Productive Green Infrastructure

Livelihood Strategy

Multifunctional Infrastructure

Official Recognition

Tool for Decision-making

Sustainable Infrastructure

Productive Public Space

Bottom Up Initiative

Strategic Urban Planning

Reconnecting City

Green Hands

URBAN
AGRICULTURE
IN

PUBLIC
SPACE

IN
CAPE TOWN

Integrating and Implementing Urban Agriculture into Spatial Planning and Land Use Management:

A Sustainable Assessment of Urban Farming in Public Space in
Cape Town, South Africa

Arch. GLORIA GAVIRIA SANCHEZ

Supervisor: Prof. MArch. Renato D'Alencon

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STATEMENT OF AUTHENTICITY OF MATERIAL

This thesis contains no material which has been accepted for the award of any other degree or diploma in any institution and to the best of my knowledge and belief, the research contains no material previously published or written by another person, except where due reference has been made in the text of the thesis.

Gloria Gaviria Sánchez

Berlin, Germany 2013

“Education is the most powerful weapon which you can use to change the world”

“Let freedom reign. The sun never set on so glorious a human achievement”

Nelson Mandela

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“When you let your own light shine, you unconsciously give others permission to do the same” Nelson Mandela

God has blessed me with this magic learning journey in many senses.

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Gloria Gaviria Sánchez
Technische Universität Berlin

DEDICATION

*This thesis is dedicated to my marvelous family:
My mother Gloria Sánchez, my father Augusto Gaviria
and my brothers Camilo Gaviria Sánchez and Cesar Gaviria Sánchez*

My family has taught me how to be a courageous woman able to conquer my goals

Gloria Gaviria

“I learned that courage was not the absence of fear, but the triumph over it. The brave man is not he who does not feel afraid, but he who conquers that fear”

Nelson Mandela

Abstract

Growing food in Northern and Southern cities has different connotations and dimensions. Within the global North, urban agriculture is developing social cohesion, building community and ecology. In the Southern perspective the discourse generally focuses on livelihood generation, food security and poverty alleviation. The on-going economic and food crisis have made cities and national governments realise that urban food security is a major issue that requires an action-oriented policy intervention, urban planning strategies and inclusion in city’s development plans. Urban agriculture plays a sustainable crucial role as productive green infrastructure with the capacity to ensure food at urban households and community level. Its inclusion into the city’s strategic agenda can be a complementary strategy in response to the growing urban challenges; tackling high unemployment rates, urban poverty, low economic development, environmental degradation, climate change, as well as playing an important role in actively engaging and empowering community in city’s development and decision- making process.

Urban agriculture is a sustainable infrastructure that urgently requires being included as an integral part of policy framework, urban planning agenda, and land use management. It has been facing challenges regarding lack of policies, strategies and plans that encourage its legal inclusion into urban systems, lack of enforcement of policies, regulations and programmes. Other issues affecting its implementation are competition for land with other urban functions; closely followed by access to land and proper infrastructure, lack of identification, zonification, allocation and designation of land for sustainable purposes.

Although urban agriculture is gaining momentum in the spatial planning and land use management discourse in Cape Town, South Africa; due to its inclusion in the legal framework and main planning tools, it is important to address the gap among policy’s formulation, planning instruments and implementation process in order to increase the scope and scale; as well as tackling the main city’s urban challenges. Urban agriculture can play the sustainable role to reconnect the city distinguished by social and spatial fragmentation.

This study aims to analyse the effective process, planning tools and strategies to integrate and implement urban agriculture into the policy framework; urban spatial planning agenda and land use management in Cape Town, clarifying the sustainable vision of urban agriculture in productive public open spaces. The research examines and analyzes; first, policies, regulations, programmes, development plans, spatial land use, planning instruments, stakeholders involved, status quo, benefits, constraints, challenges ahead and general urban agriculture practices. Secondly, case studies as bottom up sustainable initiatives which are actively supported by NGOs that play key role from planning and management perspective. Thirdly, strategies to proper integrate and implement urban agriculture, including bottom up and top down approaches which should converge in multi-stakeholders participation, creating interesting dynamics among institutional and non-institutional participants, enabling to formulate policies, strategies and actions based on the real needs, while improving or creating new and innovative planning tools.

This research contributes to build up mechanisms to assess the integration and implementation of urban agriculture in public open spaces to provide City of Cape Town with relevant tools for decision-making; through determining a set of sustainable urban agriculture indicators that can be used effectively to assess this multifunctional infrastructure, to make determinations regarding policy formulation, planning tools, strategies and action plan in order to assist in the process and future interventions throughout the city. Moreover, the study provides some guidelines for an urban agriculture action plan for assisting to bridge the gap among mandate, planning instruments and implementation process.

Key Words: Urban agriculture, public space, integration, implementation, spatial planning, land use management, planning tools, sustainable urban agriculture indicators, Cape Town, South Africa.

TABLE OF CONTENTS

	STATEMENT OF AUTHENTICITY OF MATERIAL	I
	ACKNOWLEDGMENTS.....	II
	ABSTRACT	V
	TABLES, FIGURES AND APPENDICES.....	X
	LIST OF ACRONYMS	XIII
1	INTRODUCTION.....	1
2	METHODOLOGY RESEARCH STRUCTURE AND RESEARCH DESIGN	4
	2.1 Research Area.....	4
	2.2 Topic and Case Study Rationale.....	4
	2.3 General Objective.....	5
	2.3.1 Specific Objectives.....	6
	2.4 Scope and Limitations of Research.....	6
	2.5 Problem Statement.....	7
	2.6 Research Question.....	8
	2.7 Hypothesis.....	9
	2.8 Research Design.....	10
	2.8.1 Literature Review.....	11
	2.8.2 Data Collection.....	11
	2.8.2.1 Qualitative analysis.....	12
	2.8.2.2 Quantitative analysis.....	13
	2.8.3 Diagnostic survey.....	14
	2.8.4 Data analysis.....	14
	2.8.5 Testing of Hypothesis.....	14
	2.8.6 Conclusions.....	15
	2.8.7 Recommendations.....	15
	2.9 Research Content.....	15
3	REFERENCE FRAMEWORKS: LITERATURE REVIEW.....	18
	3.1 Theoretical Framework of Urban Agriculture Phenomenon	18
	3.1.1 Spatial Approach.....	19
	Integration of urban agriculture in spatial and strategic planning	
	Integration of urban agriculture into policies: land use policy, environmental policy, food security and health policy	
	Urban agriculture in planning process	
	3.1.2 Social Approach.....	25
	Community development, Food security and nutrition, Training and extension	
	3.1.3 Environmental Approach.....	27
	Urban agriculture as a Climate change mitigation and adaptation strategy	
	Health and environmental risks associated with urban agriculture	
	3.1.4 Main Benefits of Urban Agriculture.....	30
	3.2 Geographic Framework of Cape Town.....	32
	3.3 Demographic Framework Cape Town.....	32
	3.3.1 Historical background.....	32
	3.3.2 Social Aspect.....	33
	3.3.3 Economic Aspect.....	35
	3.3.4 Health Aspect.....	36
	3.3.5 Environmental Aspect.....	37

3.4	Recap Research Gap, Problem Statement, Research Question and Hypothesis.....	39
4	PLANNING TOOLS AND LEGAL FRAMEWORK OF URBAN AGRICULTURE IN CAPE TOWN.....	42
4.1	Legal Instruments for Urban Agriculture	42
4.2	Urban Agriculture Policy	43
4.3	Spatial Development Framework	50
4.3	Integrated Zoning Schemes.....	56
4.5	Open Public Space System.....	58
4.6	Dignified Places Programme: Violence Prevention through Urban Upgrading	60
5	URBAN AGRICULTURE IN CAPE TOWN	63
5.1	Main Challenges of Urban Agriculture.....	67
5.2	Urban Agriculture Unit.....	70
5.3	Urban Agriculture Assistance Programme.....	72
5.4	From Seed to Table Programme: Harvest of Hope.....	75
5.5	Criteria for Identifying Land for Urban Agriculture.....	78
5.6	Urban Food Security.....	80
5.7	The Role of Urban Agriculture in Public Open Space	83
6	STAKEHOLDERS INVOLVED: ROLES AND FUTURE RESPONSIBILITIES IN THE STRATEGIC PLANNING.....	85
6.1	NGOs Level.....	87
	Soil for Life, Abalimi Bezekhaya Association	
6.2	Institutional Level.....	96
6.3	Academic Sector.....	104
6.4	Private Sector.....	107
6.5	Community Level.....	110
7	CASE STUDIES: Sustainable Assessment of Urban Agriculture in Public Open Space and Urban Planning Vision.....	116
7.1	Selection Criteria for Case Studies.....	116
7.2	Introduction of the Case Study Areas: Cape Flats District.....	117
7.3	Spatial Planning Vision for Urban Agriculture and Public Space in Cape Flats	119
7.4	Home Food Gardens: Lavender Hill.....	121
7.5	Sustainable Assessment Home Gardens.....	124
7.6	Community Food Garden: Fezeca – Gugulethu.....	126
7.7	Sustainable Assessment Community Gardens.....	129
7.8	Urban Planning Vision of Philippi Horticultural Area.....	135
8	RESEARCH FINDINGS, ANALYSIS AND DISCUSSION.....	144
8.1	Legal Framework and Planning Tools in a Different Discourse.....	144
8.2	NGOs and Private Initiatives: Strategies to Facilitate Planning and Dignify Communities.....	147
8.3	Spatial Planning and Land Use Management: Positive and Negative Effects to Integrate Urban Agriculture into the Strategic Planning in Cape Town.....	149
8.4	Urban Agriculture Projects as Sustainable Strategies to Reconnect City	153

8.5	Planning Vision of Urban Agriculture: PHA from Urban Planning Perspective.....	156
8.6	Discussion.....	157
8.6.1	The Impact of Urban Agriculture as Land Use.....	157
8.6.2	Tools for Integrating Urban Agriculture into the Spatial Planning, Land Use Management and Policy Framework; Supported by International Perspectives.....	160
8.6.3	Main contributions of successful international case studies in correlation with the main challenges ahead in urban agriculture in Cape Town.....	163
8.6.4	Multi- Stakeholders Participation: Future Institutional Actors Involved.....	166
9	SUMMARY AND CONCLUSIONS.....	170
10	RECOMMENDATIONS	177
10.1	Assessing Urban Agriculture Urban Agriculture Sustainable indicators.....	177
10.2	Visions for Strategic Planning of Urban Agriculture: Urban Agriculture Action Plan.....	180
	REFERENCES	188
	ANNEXES.....	194
	Annex 01a. List of Formal Conducted Interviews in Cape Town	
	Annex 01-20. Interviews at Institutional, NGOs, Private Sector, Academy and Community level	
	Annex 21. Survey Urban Agriculture Sustainable Indicators	

TABLE, FIGURES AND ANNEXES

TABLES

- Table 01: Formal Conducted Interviews in Cape Town
- Table 02: Benefits Urban Agriculture
- Table 03: Key Facts Population Aspect
- Table 04: Key facts Economic Aspect
- Table 05: Health Challenges
- Table 06: Key Actions Urban Agriculture Policy
- Table 07: Identification of Land for Urban Agriculture
- Table 08: Key Statistics related to Urban Agriculture in Cape Town
- Table 09: Main challenges urban agriculture in Cape Town
- Table 10: Type for Assistance per Category
- Table 11: Main challenges regarding food insecurity and urban agriculture in Cape Town
- Table 12: Role of Stakeholders involved and Future Responsibilities in the integration of urban agriculture in the spatial planning and Land Use Management in Cape Town
- Table 13: Sustainable Assessment of Urban Agriculture in Public Space
- Table 14: Statistics Philippi Horticultural Area
- Table 15: Summary main findings and future planning implications of Philippi Horticultural Area

FIGURES

- Figure 01: Research Process
- Figure 02: Research Design
- Figure 03: Research Structure
- Figure 04: Sustainable urban infrastructure
- Figure 05: Approaches for Integrating Urban Agriculture
- Figure 06: Integration of Sustainable Urban Agriculture into Policies and Decision-making
- Figure 07: Integration of Urban Agriculture into the strategic planning
- Figure 08: Food Security
- Figure 09: Ecological Footprint and Biocapacity
- Figure 10: Location Cape Town
- Figure 11: Population Size and Growth Rates 1985- 2031
- Figure 12: Cape Town population trends and projections: 1996–2031
- Figure 13: Gross domestic product of select metros for 2000, 2005, 2010, with 2005 constant prices, in Rand million
- Figure 14: Economic Activity
- Figure 15: Children Experiencing Hunger
- Figure 16: Cape Town average daily water use per capita in litres, 1995–2010
- Figure 17: Benefits of urban agriculture
- Figure 18: Channels of Services and Development Assistance
- Figure 19: Existing Situation and Future Land Use management System
- Figure 20: Conceptual Development Framework
- Figure 21: Climate Change Impact on Biome
- Figure 22: Conceptual Development Framework
- Figure 23: Priority Public Open Space System
- Figure 24: Violence Prevention through Urban Upgrading Projects
- Figure 25: Urban Agriculture Protected Areas
- Figure 26: Harvest of Hope process
- Figure 27: Harvest of Hope Community Gardens
- Figure 28: Lived Poverty index by Food Security Status
- Figure 29: Food Security Strategy to tackle Food Insecurity
- Figure 30: Productive Public Space

Figure 31: Stakeholders Urban Agriculture in Cape Town
 Figure 32: Location Urban Agriculture in Cape Town
 Figure 33: NGO Soil for Life
 Figure 34: Training Section
 Figure 35: Soil for Life means Everything for the Community
 Figure 36: NGO Abalimi Bezekhaya
 Figure 37: Disable Urban Farmer
 Figure 38: Water Harvesting
 Figure 39: Community Gardens in Public Space
 Figure 40: Fish Farming Prototype
 Figure 41: Strategic Focus Areas
 Figure 42: Philippi Fresh Product Market
 Figure 43: Philippi Agricultural Project
 Figure 44: Kayelitsha Garden, Harvest and hydroponics
 Figure 45: Kayelitsha Garden, Biogas plant and kitchen
 Figure 46: Kayelitsha Garden, Water supply and Carrot Harvest
 Figure 47: Case Studies Location
 Figure 48: Cape Flats District
 Figure 49: Public Open Space Cape Flats District
 Figure 50: Biodiversity Network
 Figure 51: Home Gardens: Royce Peters and Charles
 Figure 52: Recycle Materials Available
 Figure 53: Organic Methods for growing food implemented by NGO Soil for Life
 Figure 54: Fezeca-Gugulethu Garden in Cape Flats
 Figure 55: Community Garden: Fezeca- Gugulethu Garden
 Figure 56: Social, Economic, Environmental, Health and Spatial categories
 Figure 57: Results Matrix Framework
 Figure 58: Urban Agriculture Areas of Significant Value: Location Philippi Horticultural Area
 Figure 59: Urban Agriculture Areas of Significant Value: Philippi Horticultural Area
 Figure 60: Aerial Photomap Philippi Horticultural Area Historically
 Figure 61: Sub-District 4 Philippi Horticultural Area
 Figure 62: Formal Recognition of Urban Agriculture as a land Use
 Figure 63: International Models of Urban Agriculture's Integration
 Figure 64: Multi-Stakeholders Participation
 Figure 65: Urban Agriculture Sustainable Indicators
 Figure 66: Urban Agriculture Action Plan
 Figure 67: Components Strategic Urban Agriculture Action Plan

ANNEXES

Annex 01: Interview Urban Agriculture Unit: Agronomic Engineer Stanley Visser
 Annex 02: Interview Economic, Environmental & Spatial Planning, Metropolitan Spatial Planning and Growth Management: Urban Manager Claus Rabe
 Annex 03: Spatial Planning and Urban Design
 Economic, Environmental and Spatial Planning: Town Planner Peter Gray
 Annex 04: Interview Urban Agriculture Unit from Roof tops Canada: Environmental Educator Spencer Fowlie
 Annex 05: Interview Land Use Management: Schalk De Jager
 Annex 06: Interview City Parks: Bradley Burger
 Annex 07: Interview Property Management Department: Development Manager Andre Human
 Annex 08: Interview Environmental Department: Janeth Bodenstein
 Annex 09: Interview District Spatial Planning: City and Regional Planner, Environmental and Geographer Vernon Moonsamy

Annex 10: Interview Spatial planning and Urban Design: Landscape Architect Sonette Smith
Annex 11: Interview Spatial Planning, Southern District & Cape Flats District: Spatial Planner Kier Hennessy
Annex 12: Interview Human Settlements Department: Architect Brian Verwey
Annex 13: Interview Soil for life: social Anthropologist and Psychologist Louise Vaughn
Annex 14: Interview Abalmi Bezekhaya, Harvest of Hope, the Farm and Garden National Trust: Engineer Rob Small
Annex 15: Interview Violence Prevention through Urban Upgrading: Educator Katharine Miszewski
Annex 16: Interview University of Cape Town: Urban Food Security and Contemporary Challenges Department: Urban Social and Cultural Geographer Jane Battersby Lennard
Annex 17: Interview Sustainability Institute: Gareth Hyasom
Annex 18: Interview Philippi Economic Development Initiative: Thomas Swana
Annex 19: Interview ARG Design: Gita Goven
Annex 20: Interviews Head of Gugulethu Garden: Abalimi Bezekhaya NGO Mama Philipina. Home Gardens: Royce Peters and Charles
Annex 21: Survey Urban Agriculture Sustainable Indicators

LIST OF ACRONYMS

AFSUN	African Food Security Urban Network
CoCT	City of Cape Town
CT	Cape Town
EFTE	Eat for the Earth
ERM	Environmental Resources Management
FAO	Food and Agriculture Organization
FSTT	From Seed to Table
GHG	Greenhouse Gas
GIS	Geographic Information System
HOH	Harvest of Hope
IPCC	Intergovernmental Panel on Climate Change
MDG	Millenium Development Goals
NGOs	Non Governmental Organizations
PHA	Philippi Horticultural Area
PEDI	Philippi Economic Development Initiative
RUAF	Resources Centers of Urban Agriculture and Food Security
SDF	Spatial Development Framework
SFL	Soil for Life
SIDA	Swedish International Development Agency
SLN	Sustainable Livelihoods Network
UA	Urban Agriculture
UAU	Urban Agriculture Unit
UAP	Urban Agriculture Programme
UN	United Nations
UNDP	United Nations Development Programmes
VPUU	Violence Prevention through Urban Upgrading Programme
WHO	World Health Organization
ZSR	Zoning Schemes Regulations

INTRODUCTION



1



Increase by 40%

**Exceeding
9 Billion by 2050**

7 Billion Alive Today

**1 Billion
Food Insecure**

15% Food Production

Urban Agriculture

1 Billion

**Actively
Engaged UA**

There is a worldwide on-going food and economic crisis within cities due to the rapid expansion that requires measures at the urban management and planning level to include and create strategies to face the future serious conflicts regarding food insecurity, urban poverty and low economic development (Zeeuw 2010). Cities are growing rapidly without developing sustainable infrastructures that support this urbanization process (Viljoen et al 2009). In this line, urban agriculture appears in the discourse as a multifunctional infrastructure, suitable to be implemented along cities to feed urban communities and to create sustainable dynamics in city's development agenda.

It is estimated that the Earth's population will increase by 40 percent, exceeding 9 billion people by 2050 (United Nations 2012). Of the 7 billion people alive today, 1 billion is permanently or intermittently food insecure, that means one in seven people are hungry (EFTE 2011). Global trade, industrial agriculture, irresponsible consuming are depleting and exhausting natural resources and soil; generating a global, economic and environmental crisis (Zeeuw 2010).

Rapid urbanization process goes together with increasing urban poverty and urban food insecurity (Petra et al 2000). This situation is often accompanied by high levels of malnutrition and hunger, leading many urban dwellers to engage in farming activities to help satisfy their food needs (FAO 2010). Moreover, the Earth's arable land will soon no longer be sufficient to produce enough food for the growing population (Gernard 2012, p.1). There is an urgent need to create innovated solutions on how to produce food inside cities to cope this serious global challenge (Zeeuw 2010).

Urban agriculture is a food system component, suitable to embrace sustainable concepts, tackle food insecurity and assist to reach healthy habits and nutritional standards among citizens (Taylor 2010). The role of food policies in urban agriculture is pursuing the Millennium Development Goals (MDG). In fact, with the

benefits derived from its implementation is possible to cope MDG No.1 (eradicate extreme poverty and hunger) and MDG No.7 (ensure environmental sustainability) (Zeeuw 2010). In addition, it has a clear link with the most relevant urban policy areas such land use, public health, environment, socio- economic development and food security.

It is estimated that around 15% of food production in the world comes from urban agriculture (farming, horticulture, animal husbandry, fish ponds, etc). Nearly 1 billion people are engaged in urban agriculture, 200 million producing food for markets (UNDP 2006).

Urban agriculture can result in social, environmental, spatial, and economic benefits when it is properly included in city strategies. It plays an important role in many areas focused on improving local economic development, reducing poverty, decreasing unemployment rates, empowering community, offering recreational services to urban citizens and promoting social inclusion of underprivileged communities (RUAF 2010). The implementation of urban agriculture contributes to climate change mitigation, reduction of environmental degradation, preservation of biodiversity, tackle waste issues and reduce the amount of energy used to produce and distribute food, reduction in greenhouse gas emissions from reduced food miles (Viljoen et al 2009), among others.

Although public awareness for urban agriculture activities in developing cities is slowly increasing, urban agriculture has not been included yet in many cases into the urban planning agenda (RUAF 2010) which leads in many land conflicts, non-suitable infrastructure, environmental and health risks. Urban land use management and spatial planning should aim to include urban land resources into eco-efficient and sustainable use (FAO 2000); through integrating and implementing urban agriculture projects.

The challenge for urban planners, policy makers lies on integrating urban agriculture into strategic land use planning in order to create some strategies for the urban poverty challenges

(RUAF 2010). This requires the definition of policies, regulations, rules and standards that enable to increase land accessibility and availability to land by the urban poor.

Urban agriculture is officially recognized as an urban strategy by some cities which through policy formulation and spatial planning strategies have integrated it as a land use component (Mubvami 2006). Many city authorities have been developed policies regarding urban agriculture and have launched programmes and concrete actions to facilitate the sustainable implementation of this urban infrastructure (Zeeuw et al 2010).

According to international perspectives, provide well defined regulation and formal status to urban agriculture in city's development strategies through proper policy formulation, land use designation, multi-stakeholders participation is a suitable strategy to confront the main urban challenges. Some developing cities have provided proper recognition, creation or adaptation of mandates focused on land, health, environmental and food as important steps to enforce proper implementation and avoid illegal use of land and health risk associated with the inappropriate reuse of waste and water. The aforementioned implies greater harmonization between urban agriculture's legal framework and policies to establish clear linkage with city's development programmes.

The recognition of urban agriculture into the city's strategic agenda requires involving a wide range of role-players such as community members, NGOs, private sector, academy and the governmental bodies involved in processes of effective planning, implementation, policy making and monitoring (Zeeuw et al 2008). The strategies and actions formulated by the stakeholders should be focused on assisting to access land, provide basic infrastructure, production inputs, tools, equipment, support, education, monitoring, skills development, and follow up (RUAF 2010).

There are few developing cities around the world that have officially recognized urban agriculture in the legal framework (UN 2009). Cape Town is the only South African city that

has provided legal recognition through a mandate and the inclusion in the main planning tools; Spatial Development framework and the Zoning Schemes Regulations. However, there is huge gap among policy formulation, planning tools, implementation strategies and political aspects, generating some serious shortcomings in the implementation process, affecting urban underprivileged communities.

There are some complexities around competition among land uses; access to land and infrastructure leading the main challenges; as well as, the encroachment of non-agricultural uses in areas considered of significant agriculture value. Lack of proper use of existing resources available such as vacant public open land, land in public facilities, lack of enforcement in mixed use developments, are key issues that require urgent attention in order to promote multifunctional land and to ensure land availability, access to water provision, electricity and security to the gardens. Land issues can be solved through proper mandate, mapping areas to ensure land availability and accessibility, registration, monitoring and evaluation; including tools and guidelines into zoning schemes regulations, spatial development framework and policy.

According to the policy, new vision of urban agriculture in Cape Town intends to achieve a more inclusive, productive, green and healthy city (CoCT 2012). Although, urban agriculture as a sustainable livelihood strategy for underprivileged communities is gaining momentum in the spatial planning discourse and policy making, it requires increasing scope and scale to properly response to the growing urban challenges and to build a more resilient city.

Urban agriculture has the potential to break the unbalanced situations that still alive and have marked the history of Cape Town throughout years. Reconnect, in a sense to build up the city from the grassroots level in a process that integrates all type of communities and assists to reduce disparities; as well as reconnecting in a sustainable manner; spatially, economically and socially.

Communities actively engage in urban agriculture are mostly located in poorer areas using public open space. They are generating workable strategies that can be replicated along the city. NGOs are playing the role of the leadership, creating the sustainable vision of urban agriculture and beginning to bridge the gap among policy formulation, strategic planning and implementation process, providing the management perspective, assisting communities with planning, training, education, skills capacity, monitoring and evaluation, agri-business capacity, among others. These successful NGOs initiatives can be replicated throughout the city as models of hope and cross the international borders.

Without political will in sustainability matters; as well as urban agriculture mandate and planning tools in different discourse are impacting the comprehensive implementation and generating serious shortcomings in access to land, infrastructure, monitoring, evaluation, lack of support to NGOs, among others. The effective integration of urban agriculture into the strategic planning and land use management is urgently required in a holistic approach, as well as more governmental support, budget, proper recognition, interaction and communication among departments, looking for linkages in the broader context of sustainable city development; with the aims to tackle the main challenges and foster urban agriculture in Cape Town.

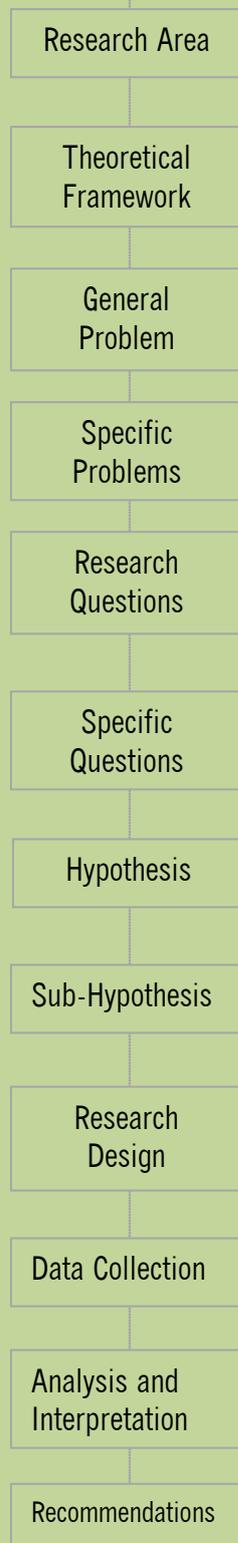
There is possible to integrate urban agriculture into the urban city's development agenda to tackle the main urban challenges, providing formal recognition to it; as well as implementing strategic and innovated planning tools, using existing resources available in the city and creating the most perfect scenario for developing it: public open space, a productive green infrastructure.

METHODOLOGY

RESEARCH STRUCTURE AND RESEARCH DESIGN



2. METHODOLOGY, RESEARCH STRUCTURE AND RESEARCH DESIGN



2.1 Research Area

The research area is focused on urban agriculture as sustainable infrastructure developing in productive public open spaces that requires effective integration and implementation into policy framework, urban planning agendas and land use management. This recognition should be reflected on relevant urban planning strategies, actions, programmes and plans, involving a wide range of role-players at different levels. Governmental bodies, NGOs, private sector, academy, urban farmers and community members should work effectively on decision making in policy's formulation, urban planning strategies, implementation process, and ongoing extension. The planning vision of this research seeks to develop assessment criteria to assist as tool for decision making in integrating and implementing urban agriculture in spatial planning and land use management.

2.2 Topic and Case Study Rationale

The on-going economic and food crisis has made city and national governments realise that urban food security is a major issue that requires an action-oriented policy intervention, urban planning strategies, inclusion in city's development plans and official recognition as land use. Ensuring food security and appropriate nutrition of the urban poor households has become a major challenge worldwide (Zeeuw 2010). The development of urban agriculture can be a complementary strategy in response to the growing urban challenges (CoCT 2012, p.1). In addition, there is a need for new solutions on how to produce food inside cities due to the scarcity of arable land near cities (EFTE 2011), food insecurity issues and other urban challenges. From the legal and planning perspective, Cape Town is not the exception on this discourse. Policy formulation has been set up by the local government as a strategy to tackle food insecurity, economic issues and reduce poverty.

The City of Cape Town was selected based on three main criteria. First of all, the inclusion of urban agriculture in the legal framework. A few developing cities around the world have provided formal and legal recognition to urban

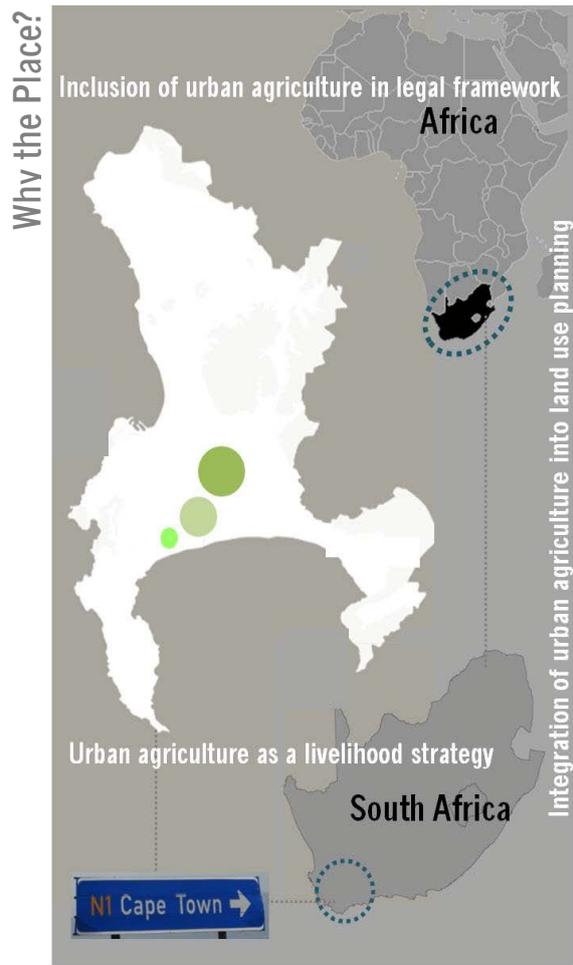
agriculture through policy formulation (UNDP 2007). In South Africa; Cape Town is the only city that has formulated a policy allowing its implementation and ongoing extension. It is expected that the new policy's version increases the scope and scale of urban agriculture in Cape Town; it will be approved around May 2013.

Secondly, the integration of urban agriculture in the spatial planning and land use management. Since 2012, urban agriculture was included into the two major planning tools in Cape Town Spatial Development Framework and Zoning Scheme Regulations. Multi-functional agriculture and food systems are a novel issue in spatial planning in developing cities.

Thirdly, urban agriculture as a livelihood strategy. City of Cape Town has an urgent need to generate food security, reduce poverty, overcome unemployment rate and environmental degradation. Urban agriculture is a means to tackle the main urban challenges and should be considered the new sustainable vision of Cape Town.

The Criteria considered for selecting three case studies in Cape Town

Three case studies are analyzed in this study from the sustainable perspective and urban planning vision. Home gardens, community garden and large scale urban farming area were selected based on their location on public open space, the proper support from NGOs or private sector, bottom up approach and the consideration as a land of significant urban agriculture value with spatial planning intervention. All these urban gardens are located in Cape Flats District which represents the city created during the apartheid; giving space to the social and spatial fragmentation in City of Cape Town. The factors that will be taken into consideration in this analysis are: location area, access to land, access to infrastructure, technical support, training, follow up, shortcomings and main benefits, as well as projects' assessment based on sustainable urban farming indicators.



2.3 General Objective

The main research objective is to analyze the integration of urban agriculture into the policy framework; urban spatial planning agenda and land use management; as well as understanding the implementation process in public space through conducting an assessment based on sustainable urban agriculture indicators as instruments for decision-making; and clarifying the planning vision for productive public open spaces as sustainable infrastructure.

Specific Objectives

Nine main specific objectives underpin this study

- To identify the main benefits, challenges and constraints of urban agriculture in Cape Town.
- To make a revision of the important policies, regulations and programmes related to urban agriculture such as urban agriculture policy, open space system, land use ordinance, zoning scheme regulations, spatial development

framework, water and waste policies, climate change strategies, Dignified Places programme, From Seed to Table Programme.

- To analyze the formulation of urban agriculture policy in conjunction with the integration of it into the spatial planning tool as an integral part of city's sustainable urban development; as well as analyzing the implementation process, strategies and programmes focused on tackling food insecurity, unemployment rates, and climate change through assessing the case studies.
- To analyze the new role and impacts of urban agriculture as land use in Cape Town; as well as identifying the positive and negative effects to integrate urban agriculture into the strategic planning agenda.
- To identify the role of the state and non-state actors involved in the integration and implementation process of urban agriculture in public open space in Cape Town.
- To assess urban agriculture in public space in the case studies through sustainable urban farming indicators.
- To examine spatial land use planning processes, structures, tools and strategies adopted to include urban agriculture into the spatial planning agenda by different planning institutions in developing countries.
- To identify the suitable Strategic tools for implementing urban agriculture into the spatial planning and land use management.
- To come up with workable recommendations at the management city level to effectively integrate urban agriculture into the policy framework, spatial planning and land use management.

2.4 Scope and Limitations of Research

This research provides better understanding about the role of integrating urban agriculture into the spatial planning agenda and land use management; as well as analyzing the implementation process in public open spaces. The study contributes to understand urban

planning approaches and management policies, institutions, programmes, key actors involved in the integration and implementation processes; identifying the main challenges ahead, benefits, constraints and impacts.

The aim is to identify the main gaps among policy formulation, spatial planning tools and practical process in regards to sustainable urban agriculture matters as a livelihood strategy that should be included in city's development agenda; focusing on spatial functions, food security, poverty reduction, unemployment, productive public spaces, improve local economies and empower community development among others.

Advantages and disadvantages of integrating urban agriculture into the strategic planning are exposing in this research in order to contribute to proper knowledge on the spatial planning agendas and management tools; towards understanding the future effects of giving formal recognition to urban agriculture as a land use.

New urban development strategies, planning tools, institutional links are examined to contribute with strategies that assist to face the main challenges related to access to public open land, guidelines to identify, allocate and designate land, infrastructure, education, training, monitoring and evaluation, among others.

The sustainable assessment was conducted through visiting many home, school, community urban gardens and large urban farming areas that have been driven by people on the ground as a bottom up initiatives supported by NGOs in which communities are connecting green hands in the soil as a potential strategy to reconnect city. Sustainable urban farming indicators were implemented in the field research to give support to the study and provide reliable information that can work as instruments which facilitates decision-making process.

This study reveals the whole perspective of urban agriculture in Cape Town. It collects the main visions with reliable first hand information from many key role players and recent and dated information based on this innovative and

comprehensive model supporting food production within the city using a combination of top-down and bottom-up approaches.

The main official departments will count with this information that will facilitate decision-making process, develop proper regulations, guidelines and criteria to allocate urban agriculture in public open space, as well as assisting in the integration and implementation process of urban agriculture into spatial planning and land use management.

In fact, this document will be relevant to many institutional departments, researchers, planning practitioners, urban farmers, and communities; in cities which are facing the legalization, inclusion and implementation process of urban agriculture into city's development strategies. Strategic planning in City of Cape Town as well as in developing cities will find in this document relevant information to assist in the assessment of urban agriculture as a sustainable infrastructure suitable to be integrated as productive public open spaces.

Successful international and local planning tools and strategies have been compiled in order to provide a broader vision about how urban agriculture as a livelihood strategy can be properly integrated and implemented. However, depending on the context, effective sustainable urban farming assessments should be conducted as instruments of decision-making.

The main limitations of this research process were conditioned by time constraints and insecurity issues in the case study areas. First of all, the time was managed as efficient as possible towards researching on bibliography identification, literature review, field research, data collection, observation process, conducting interviews, sustainable assessments analyse the information, generating conclusions and recommendations.

The information available at official level from the integration process is very recent, reliable and complete, however, at the implementation process level; the information is very poor due to the fact that they are working with NGOs as intermediary for implementing projects. For this

reason, this research takes into account as proper information the academic visions, NGOs perspective, private sector contributions, urban farmers experiences and own observations to enrich this research; as well as generating workable recommendations at the city management level.

2.5 Problem Statement

Rapid urbanization process goes together with increasing urban poverty and urban food insecurity (Petra et al 2000). Cities are growing rapidly without developing sustainable infrastructures that support this urbanization process. This situation is often accompanied by high levels of poverty and hunger, leading many urban dwellers to engage in farming activities to help satisfy their food needs (FAO 2010).

Currently, of the 7 billion people alive today, 1 billion is permanently or intermittently food insecure, that means one of seven people are hungry (EFTE 2011). South Africa has one of the highest rates of income inequality in the world. In 2010, 80% of household could not afford a basic nutritional basket (262 Rands per person per month) (EFTE 2011). It means that South Africa has a food security problem. Food insecure is living in hunger or fear of starvation without access to enough nutritious food to live a healthy life (World Food summit 1996).

In Cape Town 77% of households are food insecure; only 5% households obtain food by growing it themselves (Battersby 2011, p.30). Urban population in Cape Town has registered health problems related to improper diet. However, community gardens and urban farming contributes with 35% of food production (Palmer et al 2012, p.21). Access to food through local producers and small-scale methods of production are important keys to help to tackle food insecurity.

In this sense, the proper implementation of urban agriculture appears in the current discourse as a key strategy to cope with the most relevant urban challenges, tackling food insecurity, high unemployment rates, urban poverty reduction, economic development, climate changes mitigation and adaptation, as well as playing a crucial role in empowering

community in participatory process, the provision of training and skills capacity, among others.

The main challenges regarding urban agriculture are focused on the lack of effective formulation, integration and implementation of policies, regulations and programmes into urban spatial development framework and land use management as well as the competition for land with other urban functions, lack of formalization by law, lack of policies and plans that encourage the legal implantation into the urban system (zeeuw et al 2006). Most of the times, Urban agriculture is often informal and not included into the strategic planning (Petra et al 2000).

Although, urban agriculture as a sustainable livelihood strategy for underprivileged communities is gaining Momentum in the spatial planning, land use management discourse and policy making in Cape Town; it needs to increase the scope and scale in order to response to the growing urban challenges and help to build a more resilient city, as well as working as a strategy to reconnect communities that still living the history of a social and spatial distinction.

Taking into account the aforementioned this research has identified the main issues that City of Cape Town is facing that are affecting citizens' living conditions and city's sustainable development. *There is an urgent need to generate food security, reduce poverty, overcome unemployment rate and environmental degradation in Cape Town.* Urban agriculture is a sustainable strategy that assists to tackle the main issues aforementioned when it is implemented properly.

The *main problem* that this research intends to address is based on the current situation at the strategic planning level:

There is a need to integrate and implement effectively Urban Agriculture into urban spatial planning and land use management to tackle food insecurity, reduce environmental degradation, unemployment rate and poverty.

This problem is closely followed by three main considerations:

First of all, *there is a huge gap among policy formulation, planning tools and the comprehensive implementation of urban agriculture in public open space in Cape Town.*

Secondly, *there are complex limitations to get access to land and proper infrastructure to allocate urban agriculture in Cape Town.*

Thirdly, *there is a serious competition among land uses in Cape Town that is affecting the implementation of urban agriculture.*

2.6 Research Question

Established the main background and problem statement, this research aims to further this discussion by answering the following questions:

How urban agriculture in public space as livelihood strategy can be effectively integrated into the legal framework, spatial planning and land use management for tackling urban challenges and reconnecting City of Cape Town?

In order to conduct the analytical process the following guiding questions have been formulated:

- *Who are the state and non-state actors involved in setting the conditions for implementing urban agriculture in Cape Town? How are they organized and what are the relationships among different actors, at different levels?*
- *What are the main potentials and main challenges ahead regarding urban agriculture in public space in Cape Town?*
- *What are the tools and strategies to effectively integrate urban agriculture into the spatial planning, land use management and policy framework?*
- *What urban agriculture sustainable indicators can be used to effectively assess the integration and implementation process into spatial planning and land use management of urban agriculture in public space as instruments for decision-making process?*

2.7 Hypothesis

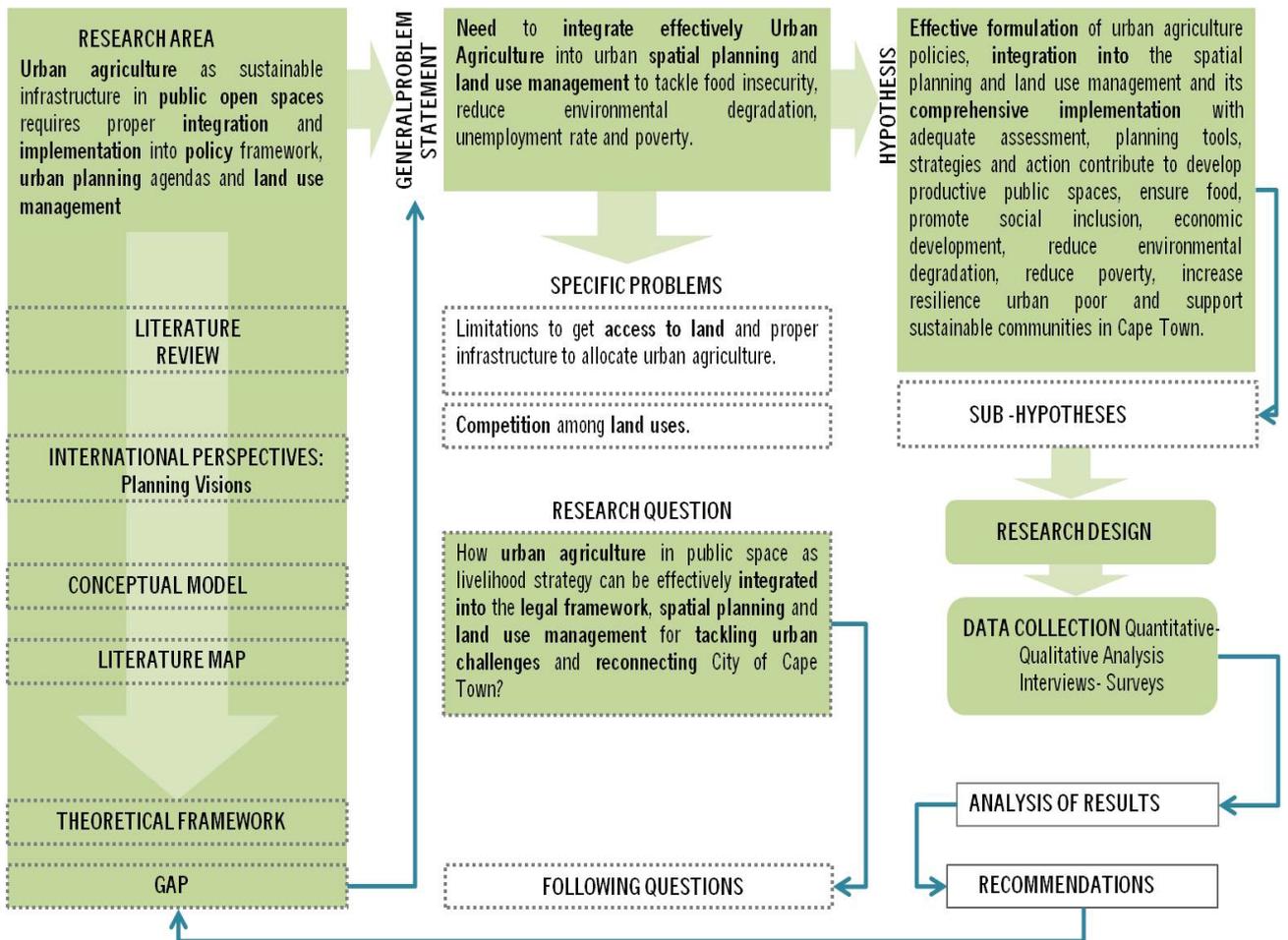
This research is guided by one main hypothesis and two sub-hypotheses. After identifying the main gaps from the literature review, this process conducted to formulate the following hypothesis:

The effective formulation of urban agriculture policies and regulations, integration into the spatial planning and land use management and its comprehensive implementation with adequate assessment, planning tools, strategies and actions, contribute to develop productive public spaces, ensure food, promote social inclusion, economic development, reduce environmental degradation, reduce poverty, increase resilience urban poor and support sustainable communities in Cape Town.

This hypothesis is followed by other sub-hypotheses addressing the fact that Communities can be benefited through using effectively public space for urban agriculture purposes:

The sustainable vision of urban agriculture as a land use can contribute to overcome some of the most serious urban challenges in Cape Town; as well as its formal recognition assists to integrate effectively into the strategic agenda of city's development plans.

The appropriate use of public space through the implementation of urban agriculture is a milieu to reconnect Cape Town; a city of social and spatial distinction.



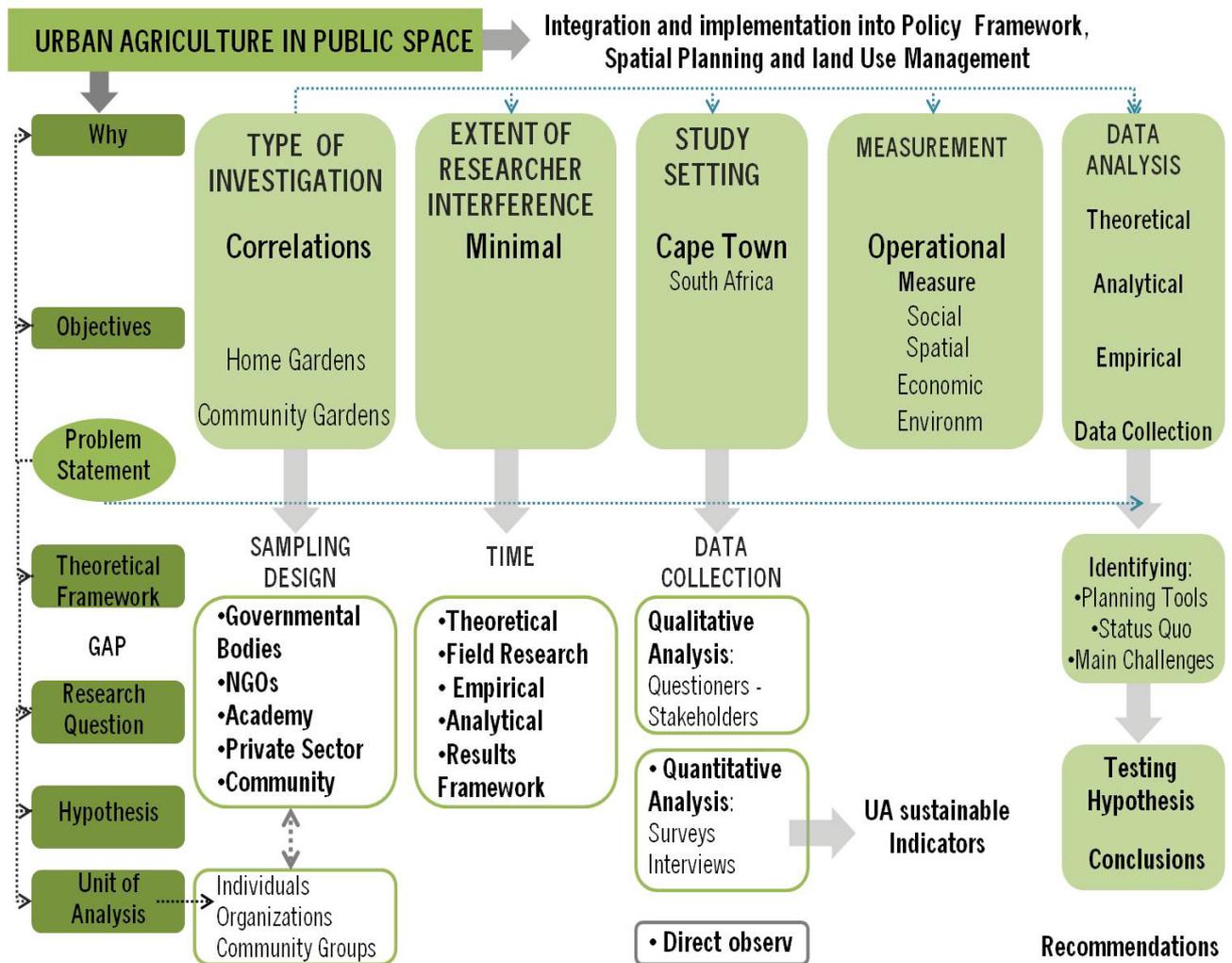
METHODOLOGY

In general, a methodology is divided into four steps. First of all, steps for scientific method: approach to the problem, formulation of hypothesis, data collection, data analysis and interpretation, testing of hypothesis, conclusions. Second, methodology of the scientific research which is refers to a Meta level of investigation. Third, the implementation of a method during the research process; it is determined by the hypothesis and the observations that should be tested. Finally, the techniques: a set of procedures, through which the results have been obtained. (Observation, analysis and interpretation) (Bunge, 1996 and Muñoz-Razo, 1998).

Figure No.01 Research Process, Source: Designed by the author 2012.

2.8 Research Design

The methodology implemented in this research was based on the scientific method; complemented by empirical assessment on urban agriculture in public open areas in Cape Town (See figure No.02).



The steps followed to carry on this research are described in detail as follows:

2.8.1 Literature Review

It provides a theoretical framework to understand the phenomenon of urban agriculture in a sustainable approach. In special this research focused the attention on the integration of urban agriculture into the spatial planning, land use management and policy framework; providing proper recognition to this new land use.

The literature review is divided into three sections: 1) the theoretical analysis of urban agriculture as a worldwide phenomenon in the sustainability framework: spatial, social and environmental approaches were identified in order

Figure No.02 Research Design, Source: Designed by the author 2012.

to support the research. The main benefits were considered in this theoretical framework as summary that compiles the sustainable vision of urban agriculture as a livelihood strategy in cities. 2) Geographic framework which provides the location and perspective of the main case study: City of Cape Town. 3) Demographic framework which provides a complete image regarding the historical background as well as special considerations at social, economic, health and environmental level, emphasizing in the current urban challenges suitable to be tackled by urban agriculture.

2.8.2 Data Collection

It was carried out under four empirical research methodologies: qualitative assessment, quantitative assessment, direct observation and

diagnostic survey in the field research. The main stakeholders involved were identified and some interviews were conducted in order to understand current situation of urban agriculture throughout the city. Some home gardens, school gardens, community gardens and large farming areas located in public space were visited to get the general vision and first hand information about the main limitations, challenges, processes and successful life stories behind these urban farming gardens. Four organizations facilitated to visit those gardens: Soil for Life, Abalimi Bezekhaya, Violence Prevention through Urban Upgrading and Philippi Economic Development Initiative.

Besides, it was possible to get the complete overview about urban agriculture in different levels; from the NGOs, private sector, community, academy and official institutions. All of the information provided by key role players, in conjunction with the observations at field research level enables to build up a comprehensive research and generate workable recommendations at the management city level.

The process for data collection for each methodology is described as follows.

2.8.2.1 Qualitative analysis

Collecting narrative and descriptive data is possible through a case study which provides all the information required to proper analysis. The instruments that were implemented to support this research are formal interviews with the main entities involved and casual interviews with community members and urban farmers in order to get the general vision of urban agriculture in the city.

The instruments implemented were interviews and questionnaires as a purposive sampling in regards to the main entities involved. Formal interviews were conducted among main official departments, NGOs, Private Sector and Academy in order to understand the perspective about urban agriculture, urban planning, legal framework and land use management in Cape Town.

The interviews were conducted with both individuals responsible for the planning area, as

well as field practitioners responsible for the implementation and monitoring of the intervention activities (See Annex 01a). The main authorities in charge of decision making at the governmental level and NGOs that are supporting the integration and implementation of urban agriculture projects were identified in order to conduct open-ended, semi-structured discussions.

The official entities and organizations that contributed with comments and perspectives at the institutional level were the Economic and Human Development Department, the urban Agriculture Unit, the Metropolitan Spatial Planning Department, the District Spatial Department, the Land Use Planning and Building Development Management Department, Environmental Department, Property Management Department, City Parks Department and Human Settlements Department. This category provides the main vision of planning tools, legal framework and the integration process in city strategies development.

At NGOs level: Abalimi Bezekhaya Association, Harvest of Hope, Soil for Life, and Violence Prevention through urban Upgrading. This category provides the most important vision regarding implementation process and current situation. Besides, in this level some surveys focus on assessment of urban agriculture indicators.

At the private level: Philippi Economic Development Initiative (PEDI) and ARG Design. This category contributes with the economic vision of urban agriculture.

At the Academy level: University of Cape Town at the Urban Food Security and Contemporary Urban Challenges, Convenor, university of Stellenbosch at Sustainability Institute. This category assists with reliable formal data and provides the real vision of food insecurity and food systems.

At community level some interviews were conducted in a representative sample of people that are working on urban agriculture projects and community members that have been intervened in urban agriculture matters. This

category contributes with the social dimension of urban agriculture.

The majority of the interviews were recorded and transcribed. Some digital visuals were taken in the context in which each interview took place. The transcripts were analyzed for consistent themes and differences across the interviews, with quotes organized to illustrate or explain the concepts being discussed. All the questioners and some sample transcriptions are included in the annexes.

Questioners

The main stakeholders involved in decision making at different levels were identified in order to conduct formal interview. At the governmental level, the criteria implemented for this selection was based on the literature review which clarifies the main entities involved in decision making process and implementation. At the NGOs level, two organizations were selected due to their strong role in urban agriculture matters in Cape Town. These ones have been working with home and community gardens during more than 20 years in coping issues regarding urban agriculture, giving support to communities in areas such as planning, training, implementation, monitoring, and education.

After the questioners was possible to identify the main constraints, benefits and stakeholders involved in order to assess their respective mandates, main area of operation, interests, and available resources, the potential contributors to the development of urban agriculture like financial and human development; as well as analysing relationships between various role-players, their fields and levels of cooperation, communication and conflicts.

The questionnaires were divided into categories according to the stakeholder involved governmental, NGO and community level (See annex 01 to 20)

Expert interviews (policy makers, responsible for planning interventions, researchers, drivers and practitioners); open-ended and structured discussions were conducted with the main authorities in charge of decision making at the governmental level, Academy, private sector and NGOs level. Expert interviews provided detail

information for understanding the integration and implementation process of urban agriculture into the spatial planning and land use management in all the sustainable categories, as well as clarifying status quo.

Community interviews; urban famers and beneficiaries were selected in a casual manner; according to the projects visited during field work in order to conduct casual discussions, taking into account their level of involvement in urban agriculture. Open-ended questions were formulated, allowing the respondent the opportunity to respond freely to all questions. All interviews were conducted inside or immediately adjacent to the urban farming area in order to minimize potential discomfort when discussing about urban agriculture matters.

Observational data information provided by the interviewees during the whole process and the correlation of some information gathered during the field work, enabling to get a new vision and perspective of urban agriculture based on own observations. Some digital images were taken for complementing the data analysis.

2.8.2.2 Quantitative Analysis

Assessing Urban Agriculture

A brief questionnaire and survey regarding sustainable urban agriculture factors were administrated to NGOs, urban farmers and community members. These ones were designed to gather information about the implementation process, the benefits and current constraints. In particular, the questionnaire sought to determine factors that enable to integrate and implement urban agriculture effectively.

The survey included sustainable urban farming indicators that were analyzed in selected case studies located in public open spaces. This assessment enabled to measure five categories regarding social, economic, health, environmental and spatial benefits and constraints of urban agriculture in public space in Cape Town.

Individual notes were recorded and some digital visuals were taken for each NGO and farming area visited. The results of this observational survey was coupled with qualitative data obtained during official departments and urban

farmers interviews to further assess the respondent's understanding urban agriculture projects and ability or willingness to properly maintain these areas.

In addition, the questionnaire and survey sought to assess implementation and integration criteria of urban agriculture in public space; as well as identifying specific elements that could potentially affect the whole process.

Indicators of sustainable development for measuring urban agriculture

The selected indicators are proposed to make the process of data collection and analysis accessible to anyone in the urban agriculture community, main governmental departments, NGOs, researchers, etc; in order to inform the condition of already implemented projects in regards to urban agriculture in public space; as well as working as tool for decision- making.

Indicators are signs of progress and change that result from an activity, project, or program (Cohen et al 2012). The indicators proposed for measuring urban agriculture in the case studies selected in Cape Town are based on sustainability concept. The idea is to measure social, economic, health, environmental and spatial dimensions of urban agriculture at home and community level.

The indicators for measuring urban agriculture based on sustainable development have been formulated according to the model of Five Borough Farm which is a Design Trust for Public Space projects in New York. This team developed a set of indicators for measuring sustainable projects regarding urban agriculture in public space. This set of indicators include the spatial category designed by the author that would serve as support for planning process, actions and policies related to eco- efficient use of public space; directly related to urban agriculture.

The main idea with the implementation of this survey is to understand the kinds of benefits and constraints that farmers, gardeners, and other key stakeholders link to urban agriculture. Through interviews and site visits was compiled

set of results that help to understand how urban agriculture is implementing in public space; as well as how home, community gardens and large urban farming areas are using land in an eco-efficient manner in order to cope with some social, economic, environmental and health situations.

See Annex 21 for understanding the indicators implemented by category in case study areas.

2.8.3 Diagnostic survey

The analyses is focused on how the indicators respond to the urban agriculture systems and on the possibility of using these indicators as instruments to support policy formulation and evaluation of the execution of master plan policies and strategic planning.

The survey identified important advantages and disadvantages of urban agricultural activity such as access to land security, water and energy affordability, healthy food, community engagement, recyclability, water quality, among others.

2.8.4 Data Analysis

After conducting the interviews, questionnaires and surveys, it was possible to determine a preliminary set of thematic topics in which the interviews were categorized like identification of challenges, issues, advantages, disadvantages, stakeholders involved; their roles and responsibilities, planning tools, polices related to, process of implementation, successful approaches, non- successful approaches, general perspective, future impacts, etc. The main idea was to identify specific issues to give context and examining those cross-cutting issues which appear consistently throughout the field research.

2.8.5 Testing of hypothesis

The hypothesis is verifiable; it is validated or rejected through four steps: 1) internal consistency, 2) logical structure, 3) contrast to hypothesis and existing theories and 4) predictions and empirical validity (Ruiz et al 1998). The hypothesis is verifiable in chapter number 10 with a discussion around the main topics that this research is addressed.

2.8.6 Conclusions

A set of conclusions are formulated according to the findings and the discussion of urban agriculture in Cape Town.

2.8.7 Recommendations

A set of workable recommendations at the city management level are developed in order to contribute to the effective integration and implementation of urban agriculture public open spaces into the spatial planning and land use management in Cape Town. As well as contributing to provide knowledge about the role of urban agriculture in urban development agenda as a sustainable initiative and potential strategy to tackle the main urban challenges at social, economic, environmental and spatial level in Cape Town.

The main idea is to build up mechanisms to sustainably assess the integration and implementation of urban agriculture in public open spaces into the spatial planning, in order to provide City of Cape Town with relevant tools for decision-making to develop a strategic action plan to bridge the gap among policy, planning tools and implementation.

Mainly two areas are considered in these recommendations; assessing urban agriculture with sustainable farming approaches and planning tools for the integration and implementation (Action Plan); using public open space as vehicle and scenario to create productive green sustainable infrastructure and use land eco-efficiently in Cape Town.

2.9 Research Content

The document is divided into four sections: the first section deals with the introduction and the research structure and methodology, chapters from one to two. Second section is the conceptual framework, providing the theoretical background, developed in chapter three. The Third section is the analytical and empirical framework, consolidated in chapters from four to seven. Fourth section is the results framework developed in chapters from eight to ten.

The two first chapters correspond to the introduction which provide the background; followed by research process in which the topic

and case study rationale, objectives, scope and limitations of the study are defined; as well as complementing by the problem statement, research question, specific question, hypothesis and sub-hypotheses. The research design is established in order to clarify the methodology implemented.

Chapter 4 *Reference Frameworks: Literature Review*. This chapter is divided into two sections. The first one focuses on the urban agriculture as a worldwide phenomenon from the urban planning perspective. It contains the most relevant factors that influence the integration of urban agriculture into the strategic planning and how social and environmental approach play an interesting role on it, as well as including a summary with the main benefits of urban agriculture. The second section refers to demographic and geographic framework of the study area, including historical, social, economic, health and environmental aspects.

Chapter 5; *Planning Tools and Legal Framework of Urban Agriculture in Cape Town*. It specifies in detail the main planning tools that are influencing city's development and the three legal tools that give recognition to urban agriculture in Cape Town. The urban agriculture policy is explained in detail with a discussion about its implementation and the role that is playing into strategic planning. The spatial development framework and zoning schemes represent the main planning tools; a discussion about lack of harmonization among them in terms of urban agriculture is analyzed.

Chapter 6; *Urban Agriculture in Cape Town*, shows the whole perspective of urban agriculture in Cape Town. In this chapter is presenting the operational details, as well as exposing main challenges identified by stakeholders and researcher. Role, strategies and actions that the entity who leads the process is performing and the main programmes launched by NGOs and supported by local government take part on this. This chapter has first-hand information based on stakeholders' perspective.

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Chapter 7; ***Stakeholders Involved: Roles and Future Responsibilities in the Strategic Planning.*** It explains in detail the roles of stakeholders involved are playing in integrating urban agriculture into the strategic planning; clarifying what they are doing, how they are contributing on it, what are the main responsibilities and what role they should play in urban agriculture as a strategy to be linked to main planning visions in Cape Town. The main actors are classified at the institutional, NGOs, academy, private sector, and community level.

8

Chapter 8; ***Case Studies: Sustainable Assessment of Urban Agriculture in Public Open Space and Urban Planning Vision.*** It contains three case studies selected based on the observations and information gathered in Cape Town. The criteria implemented for selecting these cases is explained. A summary of its geographic location is provided. The case studies (home garden, community garden and large scale urban farming) are analyzed from the urban planning perspective with an assessment based on sustainability indicators for urban agriculture.

9

Chapter 9; ***Research Findings and Analysis.*** This chapter contains main findings that expose the whole perspective of urban agriculture in Cape Town. It explains main findings at the legal framework and planning tools, clarifying why they are not in the same line. The institutional role; that is more reactive than proactive; the role of NGOs as models of hope in Cape Town; private sector and community are analyzed as well. The analysis and findings about the spatial planning and land use management, explaining the future positive and negative impacts of its integration into the strategic planning, the discussion around competition among land uses. The main findings from the case studies are analyzed as strategies to reconnect the city, sustainable vision as instruments for decision making process and planning perspective of urban agriculture.

10

Chapter 10: ***Discussion.*** After analyzing the whole picture of urban agriculture as a livelihood strategy in Cape Town, the discussion of how to integrate this into the strategic

planning arises. This chapter contains the tools for the integration of urban agriculture into the spatial planning, land use management and policy framework based on international case studies; as well as the impact assessment of future urban agriculture status as a land use. Finally, the benefits regarding multi- stakeholder participation process; and the identification of future actors at the institutional level that should be involved in urban agriculture in Cape Town.

Chapter 11; ***Conclusions.*** The main conclusions are developed in this chapter in order to summarize the findings and the discussion of urban agriculture in Cape Town.

Chapter 12; ***Recommendations.*** A set of workable recommendations in two main lines are developed: urban agriculture sustainable assessment and visions for strategic planning; in order to contribute to the effective integration and implementation of urban agriculture into the spatial planning and land use management in Cape Town.

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CONCEPTUAL FRAMEWORK	ANALYTICAL AND EMPIRICAL FRAMEWORK		RESULTS FRAMEWORK
<p>SPATIAL Strategic Planning Policies and Planning Process</p> <p>SOCIAL Community, Food Security, Training and Extension</p> <p>ENVIRONMENTAL Climate Change, Health Risks</p> <p>BENEFITS</p> <p>GEOGRAPHIC DEMOGRAPHIC FRAMEWORK</p>	<p>LEGAL FRAMEWORK PLANNING TOOLS</p>	<p>Spatial Development Framework Zoning Schemes Open public Space System Urban Agriculture policy</p>	<p>RESEARCH FINDINGS AND ANALYSIS</p> <ul style="list-style-type: none"> • Legal Framework • Planning Tools • Spatial Planning Land Use Management • Stakeholders • Sustainable Projects • Planning Vision
	<p>URBAN AGRICULTURE</p>	<p>Challenges Institutions Programmes Food Security Land Criteria Role in Public Space</p>	
	<p>STAKEHOLDERS' IDENTIFICATION</p>	<p>Roles Future Responsibilities</p> <p>Institutional Bodies NGOs Academy Private Sector Community Members</p>	<p>DISCUSSION</p> <ul style="list-style-type: none"> • International Perspectives Tools, strategies and Actions for integrating urban agriculture into policies and land use planning • Impacts Land Use • Multi-stakeholders Participation: Institutional actors involved
	<p>CASE STUDIES</p>	<p>Sustainable Assessment → Home Gardens Community Gardens</p> <p>Planning Vision → Large Urban Farming Area</p>	
SUMMARY AND CONCLUSIONS			
RECOMMENDATIONS			
Assessing urban Agriculture: Sustainable Farming Indicators		Visions for Strategic Planning: Planning Tools, Action Plan	



REFERENCE FRAMEWORKS:

LITERATURE REVIEW



3. REFERENCE FRAMEWORKS: LITERATURE REVIEW

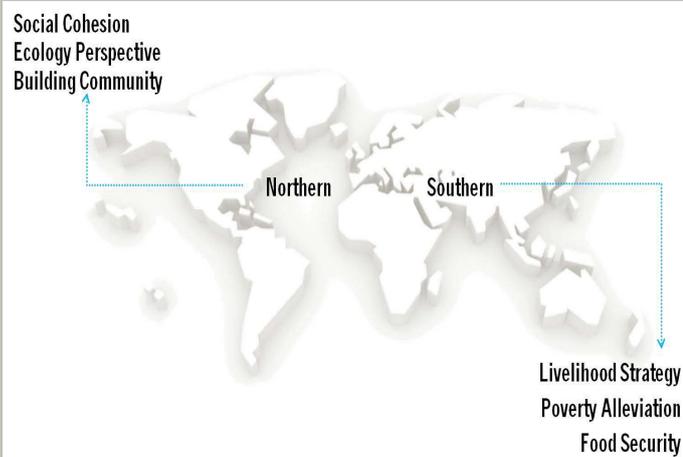
3.1 Theoretical Framework of Urban Agriculture Phenomenon

While urban agriculture in the global North is developing social cohesion, building community and ecology, in the Southern perspective the discourse generally focuses on livelihood generation, food security and poverty alleviation (Haysom 2012). Urban agriculture is included in three core areas: Ecological (green and healthy city), Social (inclusive city) and Economic (productive city) (Dubbeling et al 201, p. 192). There is a new category that will be explored into detail in this research; Spatial (strategic and democratic city) (see figure No. 04).

The history of including urban agriculture into the spatial planning dates back to 1898, when Ebenezer Howard had the vision to design plans for Gardens Cities in order to reunite the city with the country (Knowd et al 2006). Howard's Garden City proposals explore the concepts of agriculture in urban contexts; He created attractive garden cities through blueprints; trying to beautify the landscape in the urbanisation process, returning the nature to the city dwellers. In fact, gardens cities addressed many aspects of food system production, distribution, collective preparation and consumption, and waste recycling as integral development to the city (Pothukuchi et al 2000). 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).

The main idea in the globalization era is to seek a new vision of urban agriculture in urban context as a sustainable and productive urban infrastructure. The new role is focused on enhancing the lives of urbanites, working as a livelihood strategy and retaining the capacity of land to contribute to sustainable cities by integrating productive urban spaces into the spatial planning (Knowd et al 2006).

There is an increasing recognition of agriculture as a worldwide, desirable and legitimate form of long term land use (Zeeuw 2010). The main challenges in the Southern perspective are focus on the integration into spatial planning,



SUSTAINABLE URBAN AGRICULTURE

competition for land with other urban functions, Lack of access to land and infrastructure allocation, lack of formalization by law, lack of policies and plans that encourage the legal implantation into the urban system (RUAF 2010). For these reasons, urban agriculture is projected to be integrated into the strategic planning. This includes spatial, environmental and infrastructural planning, health, social and economic development, among others.

Urban planning instruments need to be adapted to the relatively new situation regarding urban agriculture as a sustainable land use (Dowall et al 2007). Many serious issues might be overcome by focusing research efforts in this direction and by educating the public about wide range of benefits from urban agricultural systems and its proper integration and implementation into the spatial planning and land use management (Taylor 2010). Productive public spaces are the new sustainable vision of urban agriculture that should be explored through the planning tools.

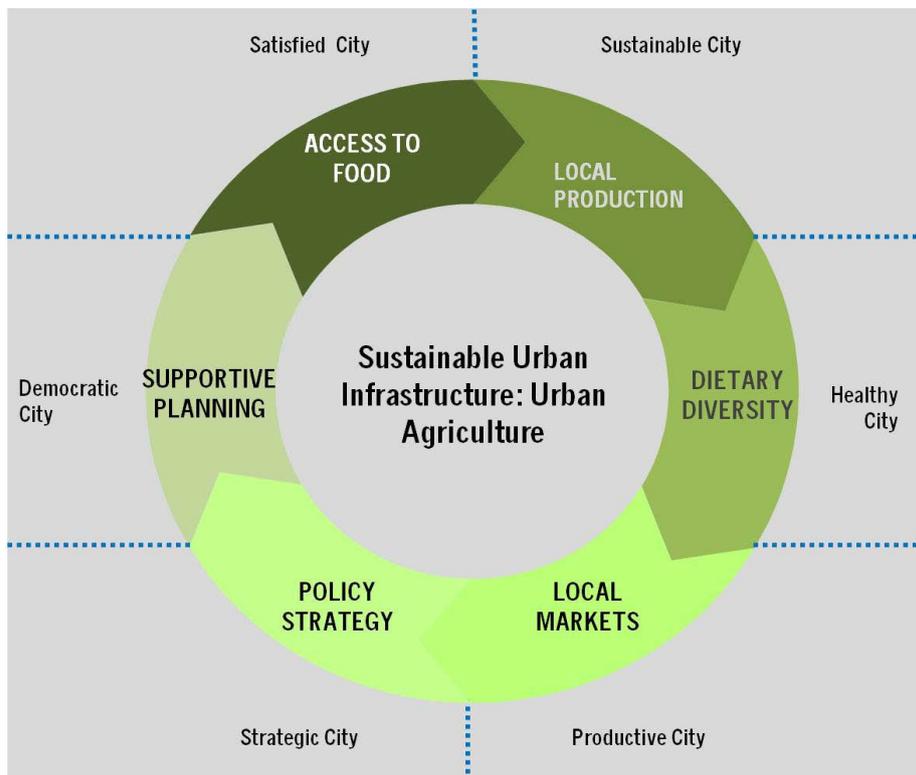


Figure No. 04 Sustainable urban infrastructure, Source: Own design based on Frayne et al 2009, Haysom, 2011 and complemented by the author

3.1.1 Spatial Approach: Planning vision

The sustainable perspective of urban agriculture suggests the importance of having farming areas

integrated into the city. It permits to follow the principles of sustainable development; allowing current and future generations the opportunity to connect with food production in its

fundamental forms without compromising its productive capacity (Knowd et al 2006). Ensuring the maintenance of the pillars of sustainability; economic, environmental and social. There is a fourth principle in sustainability, where all categories are combined; the spatial component that plays a crucial role in urban agriculture's implementation.

Integration of urban agriculture in land use planning

Urban agriculture initiatives are playing a role in the cities, but the integration into land use management, social economy, environmental agenda is lacking in today's urban planning approaches and policies formulation. Integrating urban agriculture requires the development of new planning practices, or the adaptation of existing ones, and supportive policies (Mubvami 2010). New approaches and tools towards urban policy making and planning related to urban agriculture are needed.

The role of urban agriculture in land use planning and food systems should be directly linked to environmental, social and economic issues. All of the different approaches to urban planning provide specific opportunities and linkages to facilitate and catalyse the integration of urban agriculture into urban planning (Mushamba 2010).

In fact, Cities that are thinking about food system strategies should consider urban agriculture as a comprehensive part of land use planning. Food systems are defined as the chain of activities connecting food production, processing, distribution, consumption and waste management, as well as the associated regulatory institutions and activities (Mubvami 2010). Land use planning is viewed as the process of organising the use of land and its resources to best meet the people's needs over time according to the land's capabilities (Chapin et al 1997 cited in Mushamba 2010). This definition focuses the attention on the appropriate use of land in urban environment; and how it is related to the sustainable development use of resources. Urban agriculture is an important component of food system strategy and it is important to create a wider

perspective and try to find out its role on the city.

There are some approaches developed by Chapin et al in 1997 for integrating urban agriculture towards a sustainable city (See figure No.05). First of all, the *Ecological approach*; planning is used as an approach to make cities healthy and disease free (Mushamba 2010). Urban agriculture is considered as a tool for environmental management through nutrient and waste recycling. Cities such as Dar es Salaam-Tanzania and Lusaka-Zambia have been applied this approach.

Second, *New Urbanism approach*; it involves design, engineering and architecture interventions to create a compact city. This approach is focused on learning from traditional urban development patterns, taking into account the trends of urban sprawl (Mubvami 2010). It promotes small plot sizes and building up open spaces within the city as multi-functional production areas that embrace urban agriculture. The approach is applied in many new cities like Lilongwe, Dodoma, and Abuja.

Third, the *Collaborative or Communicative approach*; it refers how planning should be done and promotes the regulatory framework for urban agriculture (Mushamba 2010). This approach addresses main issues and develops a vision for the city; as well as emphasizing in multi-stakeholders participation. The role of stakeholders, the levels of interaction and power are taking into consideration in this approach.

Fourth, *City perspective approach* in which democratic process takes place. Government and urban farmers make negotiations for the use of any open land available for urban agriculture activities; including negotiations for the legalisation of informal settlements and informal sector activities (Mushamba 2010). Taylor 2010 argues that most of urban agriculture activities have been inspired by bottom up approach. They have been established through grassroots efforts focused on larger scale interventions. Taylor further asserts that these efforts might work best through the coordination of urban

agriculture activities among stakeholders and the recognition of multifunctional benefits.

Finally, *New life model approach*; it implies the creation of new institutions for urban agriculture; linking it to different perspectives of urban development issues such as poverty alleviation, urban nutrition, environmental degradation, climate change, informal sector employment and gender among others (Mubvami 2010). Mubvami further argues that in this approach urban agriculture may attract a lot of international development assistance if it is properly organised and well promoted.

All the approaches aforementioned have adapted urban agriculture's dynamics in shaping the new vision, oriented to the emergence of a new land use or its proper integration in the urban forms. It is important to clarify the linkages among stakeholders, challenges, departments, programmes; as well as the potential role of urban agriculture can play in urban development agenda. Urban authorities and NGOs should identify the visions, challenges in which policies should be developed in common agreement. The integration into the spatial planning and land use management is possible when urban agriculture is articulated with all the urban development policies, urban farmers and city needs.

protecting open green areas from encroachment; creating buffer zones between conflicting land uses. Urban agriculture in these cases is working as a sustainable reserve area for future urban development interventions (Zeeuw 2010). There are other examples focused on land use combinations. The case of Vancouver, Canada which have entered into a partnership with producers to manage municipal open spaces that combine community gardening with other functions like green areas, parks or recreational areas (Zeeuw 2010).

Havana, Cuba is the most a successful case that should work as a model of integration of urban agriculture into the strategic planning; in special these countries that are looking to integrate urban agriculture as a sustainable infrastructure and an eco- efficient land use. Officially in 2000 urban agriculture was incorporated as a permanent use in Havana's development plan (Cruz et al 2003). It is estimated that urban agriculture provides about 60% of Cuban vegetable production (Bourque et al 2001) and about 30% of Havana's fruits and vegetables (Viljoen 2010). Vegetable production in Cuba was grown in urban areas by more than 30.000 people on more than 8.000 small farms and gardens in the city. Urban agriculture was introduced to Cuba as a consequence of the peak oil in 1989 (Viljoen 2010).



Some cities have integrated successfully urban agriculture into the land use management. The following cases are clear examples of multifunctional land use status. Dar es Salaam and Dodoma (Tanzania), Dakar (Senegal), Maputo (Mozambique), Bissau (Guinee Bissau), Kampala (Uganda), Rosario (Argentina), Habana (Cuba), Kathmandu (Nepal), Accra (Ghana) and Harare (Zimbabwe). These cities have integrated urban agriculture between residential and industrial areas. In fact, they are supporting and

Figure No. 05 Approaches for Integrating Urban Agriculture, Source: Own design based on Chapin et al in 1997 and complemented by the author

Integration of urban agriculture in land use policy, environmental policy, food security and health policy

Urban planning is undertaken under existing national and municipal policies. Therefore, analysing and influencing the process of policy formulation is paramount in seeking the integration of urban agriculture into sustainable

urban development (Mubvami 2010). A policy framework for urban agriculture would encompass planning policies, legislation and regulations that guide or regulate land use planning and management. However, in most cities, urban agriculture is not addressed in national and municipal policies or is not acknowledged as a valid urban land use (Zeeuw et al 2010).

The first step to integrate urban agriculture into the spatial planning is by providing official recognition in policy formulation process. The main role and functions of urban agriculture towards various policy goals are focus on tackling poverty, food insecurity, environmental degradation, waste issues, local economic development, integration of disadvantage groups, social and community development, as well as, promotion of participatory governance and democratic cities, community adaptation and mitigation to climate change (FAO 2010).

In terms of land use policy; the legitimization of urban agriculture as a use of urban land is a crucial step towards effective included into existing policies, programmes and plans (Zeeuw et al 2010). It should be incorporated in sector policies, regulations, norms and by-laws related to health, environment, education, waste, water, food and land use the urban agriculture strategies in order to elaborate a comprehensive network that support its implementation and integration into the strategic planning (see figure No.06). On the other hand, it is important to make some revisions on those policies in order to identify and subsequently remove legal restrictions that may exist to implement urban agriculture properly (Zeeuw et al 2010).

There are some current limitations at the grassroots, neighborhood and city level which can be solved with the integration of urban agriculture into land use policies. For instance, limited access to suitable land, lack of secure tenure on the property, insufficient infrastructure and supportive services, competition with other uses for open space, perceived and actual human health risks of growing food in the urban environment, and extensive skills necessary to manage a

multifunctional urban agriculture system (Taylor 2010).

According to RUAF 2010 the five main actions to take into consideration for policy making in regards to urban agriculture are: 1) Creating an environmental policy for urban agriculture and its formal acceptance as an urban land use. 2) Enhancing access to vacant urban land and land tenure security. 3) Delivering adequate support services to enhance the productivity and economic viability of urban agriculture. 4) Promoting gender equity and social inclusion. 5) Taking measures to reduce the health and environmental risks associated with urban agriculture.

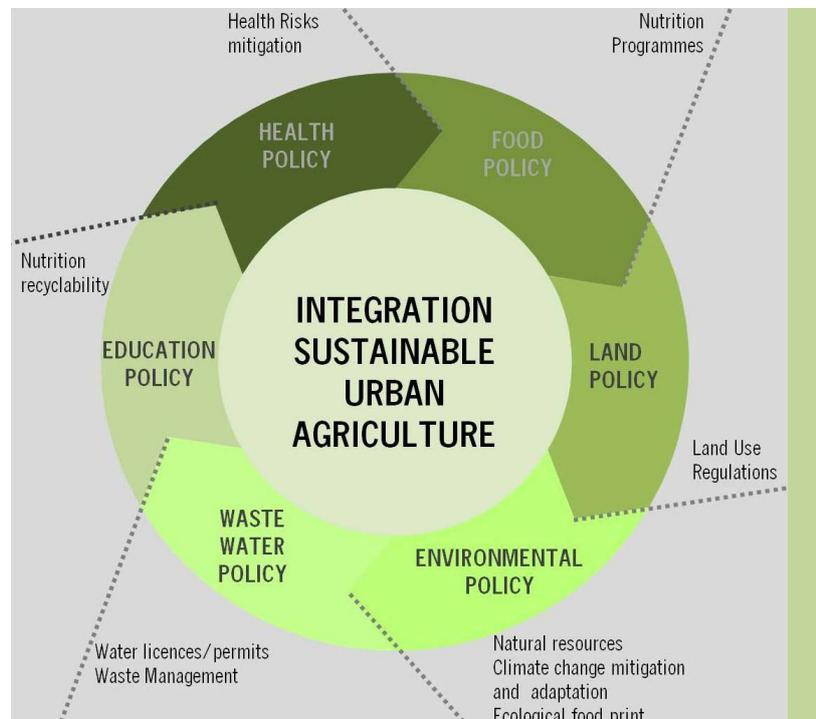


Figure No. 06 Integration of Sustainable Urban Agriculture into Policies and Decision-making, Source: Designed by the author

The role of food policies in urban agriculture is pursuing the Millenium Development Goals (MDG) and more specific the ones related to poverty reduction, food security and environmental sustainability (MDG 1 and 7). Food security is defined as giving populations both economic and physical access to a supply of food, sufficient in both quality and quantity, at all times, regardless of climate and harvest, social level and income (WHO Europe 2000). The vision of integrate food security policy into the city strategies is to attain universal and

sustainable access to a minimum daily, safe and nutritious food for healthy, active and better life to all people. Urban agriculture and food policy are cross-cutting issues often involving a wide range of departments for effective implementation and monitoring (Taylor 2010).

Some policy instruments that can be effectively used to achieve the integration of urban agriculture into urban land use planning are for instance, urban land use zoning, temporary use of vacant land (Mubvami 2010). These instruments should clarify guidelines and conditions per area to proper integration. An interesting example of these instruments' implementation is the City of Gaborone in Botswana (Ministry of Agriculture, Botswana, 2006).

Regarding the environmental policy, part of its role is focused on the identification and regulation of green fields, spots and spaces for urban agriculture purposes. In fact, this policy is a coherent tool for managing environmentally and socially sustainable urban growth without affecting the natural resources or compromising community well being. Green and productive spaces could be the structuring element around which the new city and neighborhood develops. For this reason, regulations and education must be in accordance to manage topics such as the use and reuse of waste, wastewater. In fact, recycling can be integrated in management of green and productive areas but clarifying the advantages and disadvantages related to its implementation (Cabannes et al 2002). The Case of Harare in Zimbabwe is a good example that manages waste and water for urban agriculture purposes (Toriro 2003).

In regards to health policy, coordination among urban agriculture and health departments to create mechanisms of close cooperation to monitor environmental and health risks associated with urban agriculture is required to provide environmental sustainability. Potential negative effects can be minimised when urban agriculture is acknowledged and subsequently properly managed by a health policy (Mushamba 2010). Policy formulation must be focused on designing effective prevention and mitigation

strategies for which the participation of all these sectors is required (Zeeuw 2010).

There are interesting initiatives that aims to analyze the implementation and integration of urban agriculture into strategic planning; and its future role as land use in developed and developing cities. For instance, the revision of available land is an interesting method to identify land for urban agriculture purposes. Cities like Cienfuegos (Cuba), Piura (Peru), Dar es Salaam (Tanzania), Rosario (Argentina) and Cagayan de Oro (Philippines), have implemented community mapping methods and Geographic Information Systems to analyse land suitability. It is a good starting point for enhancing access of urban farmers to land (Zeeuw 2010).

Urban agriculture is well distributed in Montreal with some garden spaces which are recognized for their contributions to community socializing, empowerment of individuals, and enhancing technical knowledge (Taylor 2010). In Beijing, certain numbers of greenhouses have emerged throughout the city; urban agriculture is playing a multifunctional role and it is a new trend for producing food (Taylor 2010). In Shanghai, many productive lands are retained for the specific purpose of growing food. Activities regarding urban agriculture are supplying 60% of the vegetables and 90% of the eggs consumed by the residents (Taylor 2010).

Urban agriculture in the planning process

The integration of urban agriculture into the urban planning agenda is a key component for city's sustainable development.

The first step to develop an urban agriculture strategic plan and policy is recognizing the interrelated nature of food, agriculture, health, use of land and ecology by creating a formal department that can deal with food issues from a total system perspective. The urban agriculture department should interact with the following departments: health, planning, environmental, local economic development, water management and waste management in order to seek for permanent support.

Second, policy formulation provides official recognition of urban agriculture into the

development agenda with the collaboration and participation of all key role players. This policy is in charge of establishing the guidelines and criteria for its implementation, land allocation, clarify types of urban agriculture, programmes among other support activities.

Third, the urban agriculture plan should be incorporated into the land-use planning system. This implies that urban agricultural activities are recognised as major components of green zoning systems (Deelstra et al 1999).

Finally, the integration phase into the spatial planning; that includes a set of strategies and action plan for its proper implementation; under the supervision of the urban agriculture department and support of policies, regulations, departments and stakeholders involved.

It is important that Local governments develop clear strategies and have serious commitment to integrate urban agriculture in municipal structures; mobilising existing local resources, allocating funds from the municipal budgets for carrying out urban agriculture initiatives and promoting policies and regulations in order to formalize it, as well as providing incentives, subsidies or grants that encourage community to implement it (Taylor 2010).

Urban agriculture is composed by some approaches that should be integrated. City approach that is explained by Viljoen et al 2009; it proposes open public productive landscapes as an economic, environmental and social strategy that should be developed as a network running continuously throughout the city and finally connecting to the rural area.

Urban Neighborhoods approach; neighborhood's scale can be very effective for land use planning and design to incorporate sustainable principles (Taylor 2010). It encourages the integration of mixed land uses, allowing the community to meet their own needs in a walkable distance. In this way, urban agriculture initiatives which would offer fresh food that could be directly consumed by residents of the neighborhood. From planning perspective, urban agriculture can include and implement urban agro-ecosystems using vacant lots, brownfield areas,

open public spaces, gardens, school gardens, facades and roof top infrastructures.

Household and community approach; community members can develop their own gardens at household level and contribute to produce their own food, improve their economies, contributes to local market economy or environmental conditions towards a sustainable city development.

While other land uses provide greater profit for the landowner, urban agriculture provide communitarian benefits at a lower cost for the urban farmers. The intense competition among land uses is one of the primary constraints related to urban planning for agriculture around the world (Taylor 2010). Urban agriculture is rarely compared to other alternatives for open space, because of the complexity in evaluating systems across multiple functions, including production of food and other materials. Taylor suggests that by cultivating some of the land, humans could reconnect with the natural environment. Land subdivisions could be designed with clustered housing, walkable neighborhoods, and designated agricultural zones in public open spaces.

In addition, the integration of urban agriculture into strategic planning is composed by four stages, taking into account the importance of the existing land uses: 1) Review in which is important to analyse the challenges to be addressed and potentials to be enhanced by evaluating the status quo and challenges ahead. 2) Plan projection in which the formulation of vision, goals, objectives, policies and key initiatives has to be defined. 3) Action plan that is refer to the integration implementation and allocation of resources. 4) Adjust focuses on the monitoring, evaluation, measuring, reporting and refinement (See figure No.07).

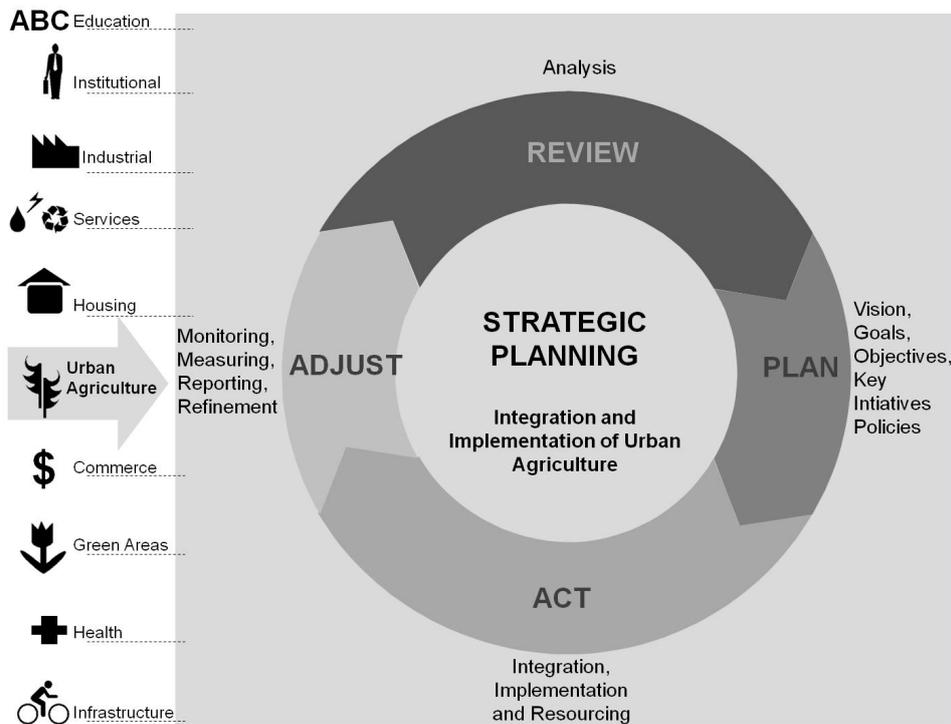


Figure No. 07
Integration of Urban Agriculture into the strategic planning, Urban Agriculture as land use, Source: Designed by the author

3.1.2 Social Approach

Urban agriculture would enhance social sustainability by providing less expensive and more nutritious food for the dwellers (Mendes 2006). The main benefit that encompasses a number of important dimensions of social sustainability is including community development, social inclusion and civic engagement. Urban agriculture can registered three crucial changes in the social aspect. First of all, empower, mobilization and engagement communities by giving training, education, skills capacities; as well as improving education and awareness. Secondly, enhance collaboration between city departments and other agencies. Finally, important impacts towards food security and food systems approach (Mendes 2006).

Community development

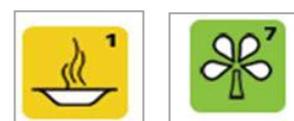
The integration of urban agriculture into the city development agenda improves food security and nutrition, assists in poverty alleviation, social inclusion, community building/social cohesion, HIV-AIDS mitigation (CoCT 2012). The integration is beneficial to community development in a sense that the production of foods in close proximity to the consumers, improve local market economies, training and education, gardening skills (Taylor 2010), as well as the production of healthy habits; food, spaces, healthy eating, food security and nutrition and encourages physical activity (Cohen 2012). Another important aspect is

related to empower and mobilization community and youth development (Cohen 2012).

Community gardens offer many benefits including neighborhood revitalization, avoiding dumping areas, reductions in crime and insecurity (Taylor 2010). The establishment of urban agriculture in public green space through community gardens is an advantage for community members that can launch their projects in neglected open public spaces near their dwellings and contribute to a productive sustainable development.

Food security and nutrition

The role of urban agriculture in food security is essential; especially in developing countries. Food security is taking a role in city's development agendas due to the fact that, it is important to develop strategies to tackle food insecurity issues and malnutrition. With the benefits derived from urban agriculture implementation is possible to cope two main Millennium Development Goals No.1 (eradicate extreme poverty and hunger) and No.7 (ensure environmental sustainability) (Zeeuw 2010).



According to FAO 1996, food security is a “situation that exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”. Food security is more than availability of food; at the household level means having equitable and affordable access to food according to various criteria of quality, quantity, hygiene and cultural preferences (FAO 2010).

There are some regions around the world that are in high risk in terms of food insecurity; in special Central Africa and South Asia (See figure No.08). Urban agriculture may improve both food intake and healthy quality nourishment (Zeeuw et al, 2010).

Food security is divided into four dimensions: availability, stability, safety and access (FAO, 1996). First of all, Food availability of sufficient amounts of food should be ensured for all inhabitants; this category is characterized by sufficiency of supply, public expenditure on agricultural, agricultural infrastructure, volatility of agricultural production, political instability. Secondly, Food stability requires that food can be accessed at all times. Thirdly, Food safety is linked to quality of food: it takes into consideration availability of sufficient amounts of food and its consume without risking health major problems; some features of this category are diet diversification, nutritional standards, micronutrient availability, protein quality. Finally, Food accessibility, associated with the resources than an individual or household possesses to obtain food require for a healthy diet (Schmidhuber et al 2007).

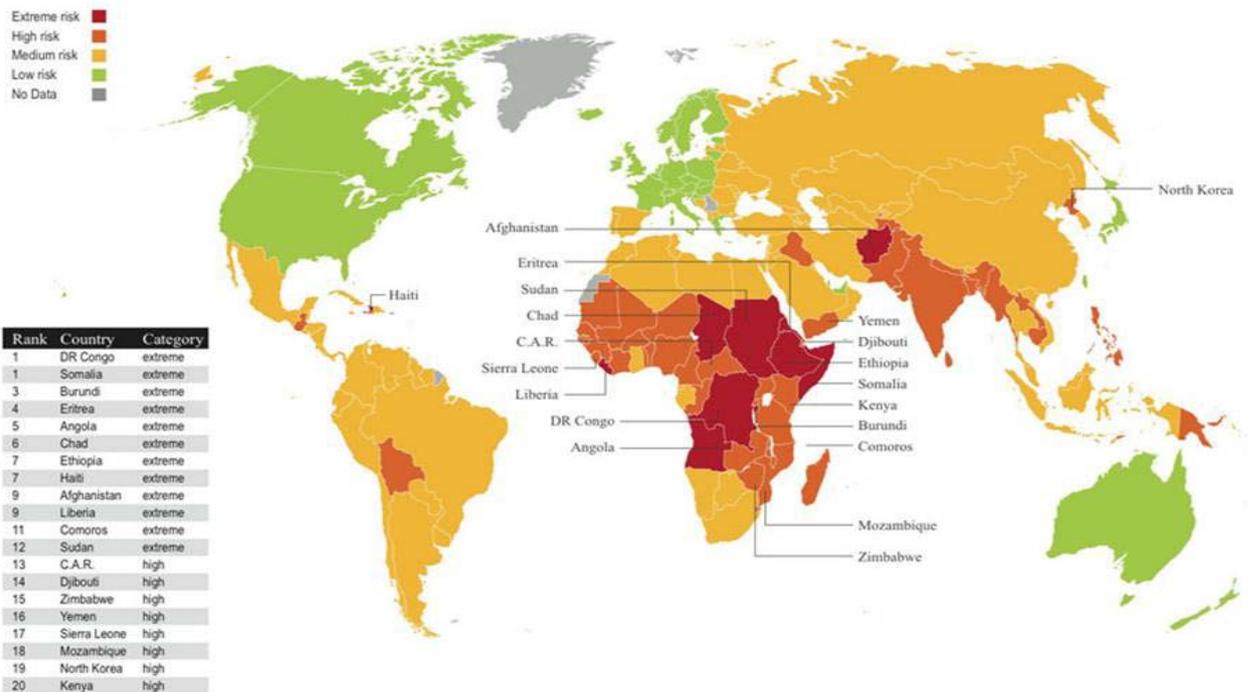
Urban agriculture might also be considered into the strategic agenda as an alternative or a supplement to existing public welfare or nutrition assistance programs. Empowering vulnerable communities in the production of their own food could improve their understanding of food and nutrition, as well as their skills in horticulture and gardening (Zeeuw, 2010). Investing in local economies and revitalizing urban communities are measures for addressing food insecurity and hunger issues.

Training and extension

The integration of urban agriculture into the city strategies should be accompanied by permanent training, skills capacity, monitoring and evaluation. The main challenges in regards to training and extension services are focus on provision of relevant advice to urban farmers in fields such as safe use of urban resources; organic waste recycling and the reuse of wastewater; as well as marketing trainings among others (SIDA 2003). It is important to take into consideration and adopted to urban conditions successful rural extension and training methodologies like farmer to farmer approach, farmer field schools and participatory technology development (SIDA 2003).

Increase capacities among farmers and urban agriculture micro-entrepreneurs is an important alternatives that goes beyond training. First of all, the engagement of policy development, action planning and implementation of urban agriculture requires organisation and implementation for training activities well adapted to the needs of different types of stakeholders such as Municipal Departments, farmer organisations, NGO's, research institutes, governmental bodies and private sector. They should develop strategies, create policy awareness seminars, and participate in training courses on diagnosis, assessment and planning, among others (SIDA 2003). Secondly, extension and training institutes and trainers are important elements in getting the proper knowledge for implementing urban agriculture at the household and community level. Finally, after the implementation, the key element is follow up through monitoring, assessment and evaluation in order to take corrective measures (SIDA 2003).

According to Taylor 2010, the educational component gives to the community the opportunity to improve the food security of the household and gain new knowledge and technical skills. Through school gardens and other community programs is possible to include knowledge development in cooking, nutrition, science, environment, business management, among others.



3.1.3 Environmental Approach

This approach is an important component of urban agriculture; it contributes to urban greening, recreational services (Sport and education), productive use of urban wastes and reduction of the urban ecological footprint and improved urban micro-climate, among others (CoCT 2012).

The ecological footprint of a city is greatly impacted by the food system (Taylor 2010). In fact, production practices, transportation distances, energy inputs, and management of organic waste products have a huge impact in the ecological footprint.

Worldwide population is using more resources than the Earth can provide. World Ecological Footprint of Consumption accounted by 2.7 gha total per capita in 2010 and its Biocapacity was 1.78 gha per capita (Global Footprint Networks, 2010). Currently less than 20 percent of the world's population living in countries that can keep up with their own demands (Global Footprint Networks, 2010). (See figure No. 09).

One of the alternatives to improve these factors and collaborate with ecological food reduction is urban agriculture (Taylor 2010). In fact, urban agriculture provides benefits including environmental sustainability by distance food heating needs, reducing storm water travels, management costs, and creating possible reductions in emission sand transportation costs (SIDA 2003).

Figure No. 08 Food Security, Source: Food Security Index, 2011

One of the alternatives to improve these factors and collaborate with ecological food reduction is urban agriculture (Taylor 2010). In fact, urban agriculture provides benefits including environmental sustainability by distance food travels, reducing the heat island effect, reducing cooling and heating needs, reducing storm water management costs, and creating possible reductions in emission sand transportation costs (SIDA 2003).

By producing food locally and balancing production with consumption, the embodied energy of food required to feed cities is reduced because of less food miles (transportation distance), less packaging and processing, and greater efficiency in the production inputs (Viljoen et al 2009). The implementation of urban agriculture assists to reduce energy consumption, decrease greenhouse gas emissions and global warming impacts (Taylor 2010).

Urban agriculture has positive and negative environmental impacts and ecological functions on the urban environment. Health benefits are extended by the potential of agriculture to clean up urban environments through reusing wastewater, solid waste and organic materials (Crush et al 2010). On the other hand, when it is implemented in poorly or under marginal

environmental conditions, it can cause health problems given contamination of produce through waste recycling or air pollution, disease transfer from animals to humans, and leaching of agrochemicals into soils and water sources (Crush et al 2010).

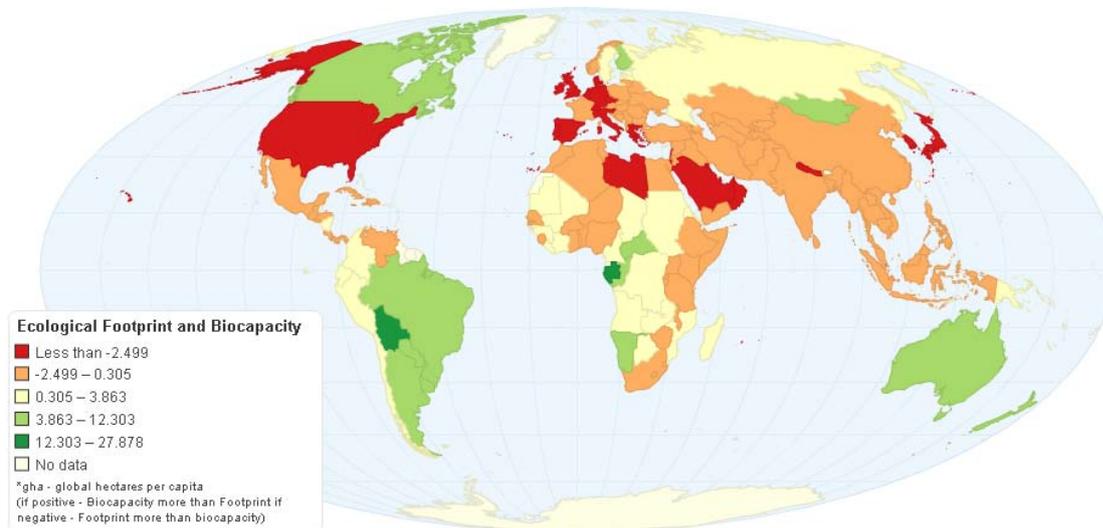


Figure No. 09 Ecological Footprint and Biocapacity, Source: Global Footprint Network's 2010

There are tracts of public open space or community green space that offer a great opportunity for establishing urban agriculture as part of the green infrastructure within urban neighborhoods (Lovell 2009). Parks, schoolyards, cemeteries, churchyards, and roadside right-of-ways might be considered for space to support food production (Taylor 2010).

Urban agriculture as a Climate change mitigation and adaptation strategy

Climate change affects rain patterns and rising cost of fuel drives up food prices; as well as impacting food security and local food supplies (Roux 2011). Most of the worldwide food systems are completely dependent on fossil fuel. Agricultural sector contributes between 28-33% of global GHG emission and 13.5% attributable to food transport, agriculture is the single largest contributor to global warming (IPCC 2007). Through climate change mitigation and adaptation strategies; cities are most actively experimenting with efforts to save the planet from harm caused by human beings as well as preparing cities to deal with the impacts and effects of climate change such as rising sea levels and changes in rainfall patterns (Roux 2011).

Urban agriculture is a strategy for climate changes mitigation and adaptation (Roux 2011). The main effects of climate change are affecting food, causing extreme heat, floods which make the growing of crops difficult. Through implementing urban agriculture people are challenge their demands in a way that they are able to benefit themselves, without compromising the environment.

Governments must take essential measures to assist in enhancing food production and access, scaling up social protection systems and improving communities' ability to prepare and respond to disasters by building climate resilient livelihoods and building sustainable urban infrastructure that tackle food insecurity issues caused by climate change (Roux 2011).

Health and environmental risks associated with urban agriculture

For the inclusion of urban agriculture as a land use planning is needed to develop a better understanding of relationship with human health (Taylor 2010). In regards to issues associated of growing food in contaminated soils or irrigating

with contaminated water have assisted to evaluate some risks in urban agriculture.

Avoiding the health hazards is one of the main objectives to integrate urban agriculture into the regulatory framework, decision making process and strategic planning (RUIAF 2010). In most of the cases urban food production has never been addressed properly by legal regulation and planning (Zeeuw 2010). The role of stakeholders involved is crucial in close cooperation with the regulatory, economical, technical and educational measures for managing reuse of waste and water.

The most important measure for preventing health issues is to improve the coordination between health, agriculture and environmental departments by assessing actual health and environmental risks associated with urban agriculture and to design effective preventive and mitigating strategies (Zeeuw 2010). Through farmer education on the management of health and environmental risks is possible to reduce substantially the current issues. There is a need to provide education to farmers to make well aware of these risks and proper methods regarding how to prevent them (van den Berg 2000).

Due to the lack of institutionalization and regularization, some negatives impacts have been registered in the inappropriate implementation of urban agriculture. "Although urban agriculture plays an important role in transforming urban wastes into valuable resources, urban farmers are increasingly using treated or untreated urban wastewater (including water from polluted rivers) for irrigation water and nutrients" (RUIAF 2010, p.5). Some health risk can affected community members when urban agriculture is not well monitoring by the main authorities or entities in charge of that. For this reason, it is important to provide technical assistance, training and education in reusing wastewater and organic waste material in the prevention of health risk.

Furthermore, the sustainability approach of urban agriculture is primarily by balancing inputs and outputs, reusing waste products, reducing energy use, and optimizing green infrastructure (Taylor 2010). The eco-efficient

use of land through implementing urban agriculture results in the conservation of energy by reusing urban waste products locally, both biodegradable wastes for compost, and wastewater (stormwater and greywater) for irrigation (Goodard 2006). Reusing wastes offers another benefit in reducing transportation for disposal and long-term management (Holmer 2005).

The cases of cities like Vancouver (Canada) Colombo (Sri Lanka), Kampala (Uganda), Rosario (Argentina) and Dar es Salaam (Tanzania) are promoting recycling of grey household wastewater for use in home gardens and educate farmers regarding prevention of health risks (Zeeuw 2010).

3.1.4 Summary Main benefits of Sustainable Urban Agriculture

Production	Community Socialization	Human Health	Economic Revitalization	Job Growth	Local Economic development
Production of fruits, vegetables, mushrooms, herbs, medicinal plants, meats, milk, cheese, eggs, and other products.	Community members often find gardening and farming to be a social activity through sharing food, knowledge, and labor.	Healthy food, Healthy eating and encourages physical activity. Food security.	Offering new jobs for neighborhood residents and vitality from improved economics of the community.	access to inputs and markets - amenity employment and poverty reduction	Promotion of sales at local level to provide food in local markets ensures income for urban farmers.
Cultural Heritage	Education	Empower	Food affordability	Enterprises development	Food Markets
Urban agriculture can provide access to rare ethnic foods that are typically not available in existing markets.	Training and skills development, agro-business, management. Children and adults learn about foods, nutrition, environment, economics.	Engaging and mobilizing community, youth development. Health spaces.	Accessible food required for a healthy diet and food safety net programs, access to urban farmer financing.	Urban agriculture is integrated to enhance the economic by launching community projects and local markets.	Build locally based self-reliant food economies, sustainable food production, processing, distribution, and consumption.
SOCIAL CATEGORY			ECONOMIC CATEGORY		

ENVIRONMENTAL CATEGORY			SPATIAL CATEGORY		
Microclimate Control	Urban Greening	Reduce Ecological Footprint	Land use	Strategic planning	Sustainable infrastructure
Urban agriculture can positively alter microclimate through humidity control, wind protection, and shade.	Community and backyard gardens contribute to the greening of urban areas, improving aesthetics and well-being. Recreation and Leisure, Parks and Landscape Management	Urban agriculture reduces food miles, heat island effect, cooling and heating needs, storm water management costs, and creating possible reductions in emission and transportation costs.	Land availability, demarcated zones and land tenure security for implementing urban agriculture as a sustainable land use, sustainable infrastructure that tackles main development issues.	Integration of local food systems in planning. Cooperation among departments (health, land, environment, education, etc) Formalization and regularization of urban agriculture, avoiding competition among urban systems (land uses).	Productive public open space in which community produces their own food. Effective and economic use of existing space available; using unproductive spaces such as vacant lots, rooftops, patio's, gardens, roadsides, idle public lands and empty lots (saving space).
Energy Conservation	Waste and water Management	Biodiversity-Habitat Improvement	Integration policies	Policy making	Sustainable space with less space
Producing food locally reduces the embodied energy resulting from inputs, transport, and packaging.	Organic waste products can be composted and used as a fertility resource for growing food. The reuse of wastewater (stormwater and greywater) for irrigation. Open loop system: saving waste and water.	Agricultural systems can support a wide range of species, including some native plants, as crops or associated plants.	Integration of policies, regulations, programmes and departments related to health, land, environment food into the strategic development framework to reduce health and environmental risks, reduce poverty, mitigate climate change, etc.	Recognizing the interrelated nature of food, agriculture, health and ecology by launching urban agriculture policy that regulates its implementation, encouraging community to set up projects, giving support, training and education as well as monitoring its proper operation.	Urban agriculture can include and implement urban agro-ecosystems using vacant lots, brownfield areas, open public spaces, gardens, school gardens, facades and roof top infrastructures.

Table No. 02: Benefits Urban Agriculture. Source: Adapted from Taylor, 2010 p.5 and complemented with; Zeeuw, 2010, p. 8 and Cohen, 2012, p.9. 97)

3.2 Geographic Framework Cape Town

Cape Town is located in South Africa, on the southern peninsula of the Western Cape. Its geographical area is 2461 km² (2% of the province's total size) and accommodates about 66% of the total population of the Western Cape. The land area is estimated in 2,455 square kilometers. It is larger than other South African cities, resulting in a comparatively lower population density of 1,425 inhabitants per square kilometer (3,690 /square miters) (CoCT 2010).

The urban geography is influenced by the contours of Table Mountain its surrounding peaks, the Durbanville Hills, and the expansive lowland region known as the Cape Flats. Cape Town's geography is divided into suburbs which have been developed historically together; characterized by common attributes in terms of language and culture. The suburbs are described as follows:

- 1) *City Bowl*: natural amphitheatre-shaped area bordered by Table Bay and defined by the mountains.
- 2) *Atlantic Seaboard*: characterised by its beaches, cliffs, promenade and hillside communities.
- 3) *West Coast*: It lies along the beach to the north of the Cape Town city centre.
- 4) *Northern Suburbs*: Afrikaans-speaking.
- 5) *Southern Suburbs*: wine-growing region.
- 6) *South Peninsula*: rural population of the area is growing quickly as new coastal developments, subdivided by plots in order to provide more new housing development.
- 7) *Eastern Suburbs*: new subsidized housing projects.
- 8) *Cape Flats*: designated by the apartheid government as non-White zone. The Race-based legislation such as the Group Areas Act and some pass laws; forced non-white people out of more central urban areas to live in informal settlements (CoCT2010) (See figure No.10).

3.3 Demographic Framework Cape Town

3.3.1 Historical background of Cape Town

Cape Town is distinguished by the history of social and spatial distinction. It is a fundamentally divided city; with many years of transition, trying to overcome social disparities and seeking inclusion and the reconnection of social, spatial and cultural dynamics.

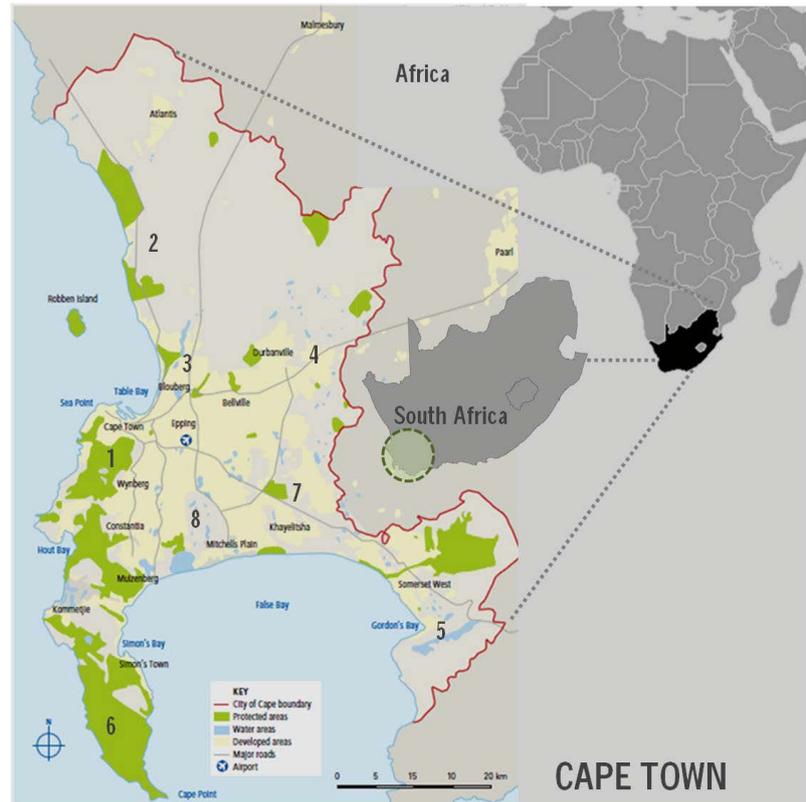


Figure No. 10 Location Cape Town, Source: It is adapted and merged from City of Cape Town 2010, Satellite map 2010 and Wikipedia 2010

The history of Cape Town dates back to 1488 with the European's colonization. First of all, the Portuguese were the first Europeans to discover Cape: Bartholomeu Dias who arrived in 1488 after journeying south along the west coast of Africa and in 1497, Vasco da Gama who was looking for direct connection from Europe to Asia. Secondly, In 1652 was registered the arrival of the Dutch, Jan van Riebeeck and the Dutch East India Company whom were looking to establishing a halfway station to provide fresh water, vegetables, and meat for passing ships travelling to and from Asia. They established the first European colony in South Africa and set up the trade Dutch monopoly (SAOH 2011, p.1).

By 1754, the population of the settlement on the Cape had reached 5,510 Europeans and 6,729 slaves. In 1806 was the war between France and Great Britain, in which the latter successfully invaded the Cape in the Battle of Muizenberg, announcing free trade (trading in slaves). Cape was returned to the Dutch in 1802 by a peace agreement between England and France. This period registered the main developments of

Cape Town. The native inhabitants were forced to declare a fixed residence and were not permitted to move between regions without written permission. Finally, in 1814 the war between France and England ended in favor of British (SAOH 2011, p.1).

In 1834, around 39.000 slaves were emancipated, leading to establish the Bo-Kaap by a Muslim community. The Great Trek (Afrikaans: die Groot Trek), began in 1836. About 10,000 Dutch families moved to new land, opening the interior of the country. In 1840 the Cape Town Municipality was established, giving way to further political development. At its inception, the population stood at 20.016, of which 10.560 were white. While Cape Town lost its position as the single dominant city in the region in diamonds and gold exploitation, it was benefited by its predominant harbor and the increased trade to the region (SAOH 2011).

In 1910, the landscape changed with the addition of huge buildings, giving a provincial and legislative status (Minty 2010). In 1948, the National Party stood for election on its policy of racial segregation, called apartheid. The voting rights of the Coloured community in Cape Province were revoked after some constitutional battles. In 1966, the once-vibrant District Six area was bulldozed and declared a white-only area. There are two theories for that situation. First, complex issues (Slum, prostitution, crime, gambling and alcoholism). Second, land's value issues and its strategic location (close to the CBD, harbor and mountain) (Minty 2010). Many declarations under the Group Areas Act resulted in whole communities being uprooted and relocated to the Cape Flats. Under apartheid, the Cape was considered a "Coloured labour preference area", to the exclusion of Black Africans. During the last decade, violence and bloodshed have brought a nation to the turning point of reconciliation. The 1994 election saw the inauguration of the first black State President, Nelson Mandela, who headed a government of national unity (SAOH 2011).

“2014 is a landmark year in South Africa’s history, making two decades of democracy. Apartheid was designated to divide. The history of Cape Town since 1994 has been about learning to reconnect” (Minty 2010, p.14).

3.3.2 Social Aspect

South Africa’s population has grown rapidly over the last years: 1990: 36.1 million, 2010: 49.1 million due to high fertility levels and immigration rates (World Bank 2010). Although the population is projected to continue growing over the next 20 years, reaching 52.2 million by 2030; it is projected that the growth will be slower than over the past two decades due to the impact of the AIDS epidemic (Statistics South Africa 2010) (See figure No.11).

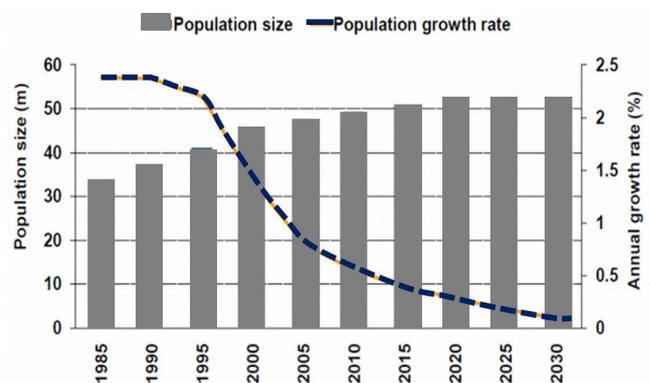


Figure No. 11 Population Size and Growth Rates 1985-2031, Source: Haldenwang, Institute for Futures Research, 2010

South Africa is a nation of diversity, with over 49 million people and a wide variety of cultures, languages and religious beliefs. “Black Africans constitute the majority, making up 79,4% of the population, while the white population makes up 9,2%, the coloured population 8,8%, and the Indian/Asian population 2,6%. According to the 2010 mid-year estimate, 51,3% were female and 48,7% male” (CoCT 2010, p.32)

According to City of Cape Town stats; Cape Town's population in 2011 was estimated at 3,82 million, with 1. 103.182 household units, and it is expected to grow to 4,25 million by 2030 (See figure No. 12). A rapidly growing metropolitan area with real geographic limitations on where development can take place and vulnerable communities are largely located on the margins surroundings of the city, without work opportunities (CoCT 2010). Between 1997 and 2007 all people had to move in Cape Town, 55,3% were black African, 32,2% were white, 9,9% were coloured and 2,6% were Asian.

The challenge for policy makers and planning practitioners is focus on managing this growth and come up with strategies for the city's future economic development as well as the well-being of all population. The challenge lies in keeping a balance in the needs of sustainability of vibrant economy, people and environment, advancing human development and establishing settlement patterns, conserving the natural environment enhanced (CoCT 2010).

In 2009, about 5% of the estimated total of 1.019.395 households in Cape Town listed social grants as their main source of income. As in the rest of the country, levels of poverty are highest amongst the black African population in Cape Town (CoCT 2010).

High rate of adult illiteracy is the main cause of high levels of unemployment rate in Cape Town, 24% in 2009 among working-aged people between the ages of 25 and 65. Youth population (15 to 24 years old) accounted by 47% of city's population in 2010; 49% were unemployed (CoCT 2010).

There is a need to integrate the city both socially and spatially. Cape Town's spatial structure remains fragmented, despite dramatic political changes and growth and development over the past 20 years (CoCT 2010). Cape Town is making some efforts in order to develop a compact city form; implemented mixed uses and giving priority to social development.

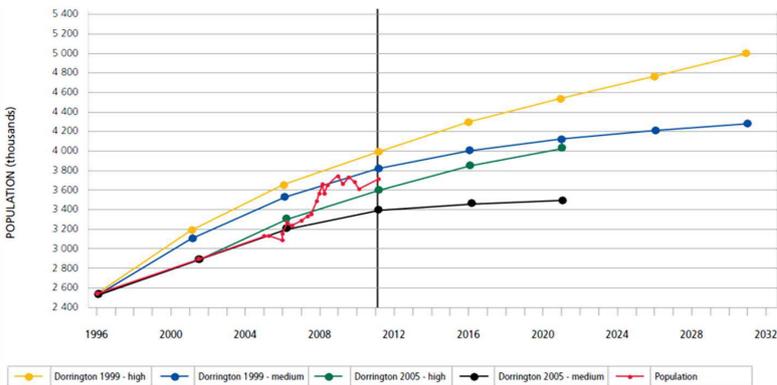


Figure No.12 Cape Town population trends and projections: 1996–2031, Source: City of Cape Town 2011.

Currently, Cape Town's average population density is low, at 39 persons per hectare, and varies between 100 and 150 in the shanty areas and between four and 12 in the former white suburbs. Middle-income and high-income households mostly live in low-density suburbs. In townships, the majority of households live in underprivileged situations and in some cases with complex diseases. These households are poorly situated in relation to flood hazards, and in marginal conditions. The most relevant issues in these areas are pressures on land for housing that compromise infrastructure, community facilities and public spaces provisions (CoCT 2010).

The main challenges included high levels of unemployment (especially among youth), high drug use and crime incidence, uneven access to social and municipal services, and limited uptake of (advanced) higher education, despite the city's proximity to four higher-education institutions (CoCT 2010).

Key facts Social Aspect

- Cape Town's population is around 3,7 million
- Although the population will grow to 4,25 million in the next 20 years, it will be slower than over the past two decades due to the impact of the AIDS epidemic
- There are around 1.060.964 household units

- Approximately 18% of the total population is living with HIV/Aids
- TB incidence has been fairly stable at under 900 per 100.000
- Cape Town's infant mortality rate declined between 2006 (21,4) and 2008 (19,79)
- About 65% of black African and 44% of coloured youth in the 15–24 age group are unemployed
- About 5% of households listed social grants as their main source of income
- Of the South African metros, Cape Town is the least unequal, with a 2010 Gini coefficient of 0,58.

Table No. 03 Key Facts Population Aspect. Source: Adapted from City of Cape Town, 2010

3.3.3 Economic Aspect

Cape Town is the second-largest economy in South Africa and makes the second-largest contribution to the country's economic output. While the city contributed 71% and 75% of economic output, as measured by gross value added (GVA) to the Western Cape's economy. It contributed 11,12% of national gross value added (GVA) in 2010, compared to Johannesburg's contribution of 16,57%, and eThekweni's contribution of 10,74%. Cape Town's contribution to the national economy has grown from 10,5% in 2001 to 10,9% in 2009 (CoCT 2010, p.12) (See figure No.13).

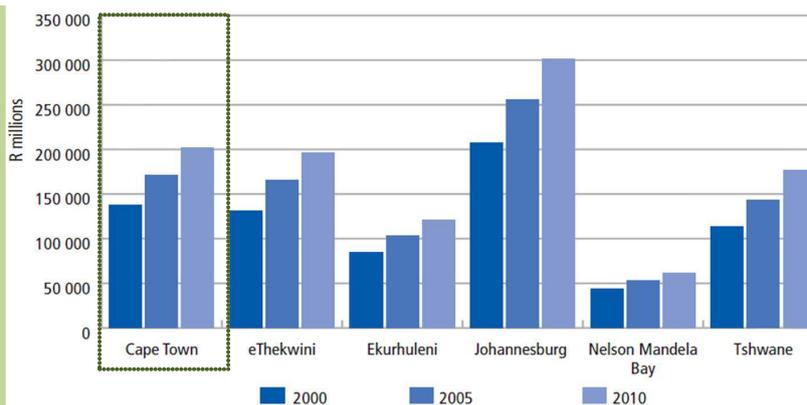


Figure No.13 Gross domestic product of select metros for 2000, 2005, 2010, with 2005 constant prices, in Rand millions. Source: Regional Explorer, Global Insight, 2011.

On one hand, Cape Town is a livable city with strategic economic infrastructures depicted with the international airport and harbor. On the other hand, its economy is supported by import and export industries. In addition, the city has world-status endemic botanical species with high quality and beauty of natural environment. The city has a special potential to attract high-skilled and creative labour; as well as

international and national companies. The economy is progressively shifting towards services industries, with the largest areas of growth being finance, business services, trade, catering, accommodation, tourism, transport and communication (CoCT 2010).

The largest proportion of working-age population in Cape Town is economically and socially marginalised. Cape Town's population grew by 22,26% between 2001 and 2009, which implies an increase in the demand for jobs (CoCT 2010). There is a high youth unemployment rate; approximately one in every two economically active Capetonians between the age of 15 and 24 is unemployed (CoCT 2010, p.12).

Cape Town's economy is featured by racial inequality and discrimination (CoCT 2010). While its economy has grown steadily, inequality has persisted, and the benefits of this economic growth have not embraced poorer communities. In fact, where the average annual income of a white household is roughly seven times that of a black African household, and nearly three times that of a coloured household (CoCT 2010).

Up to 75% of businesses in Cape Town are classified as Small and Micro- sized Enterprises. These ones account for 50% of the city's economic output. The informal economy in Cape Town entails activities like wholesale and retail trade, home-based catering and accommodation, and working in private households (See figure No.14).

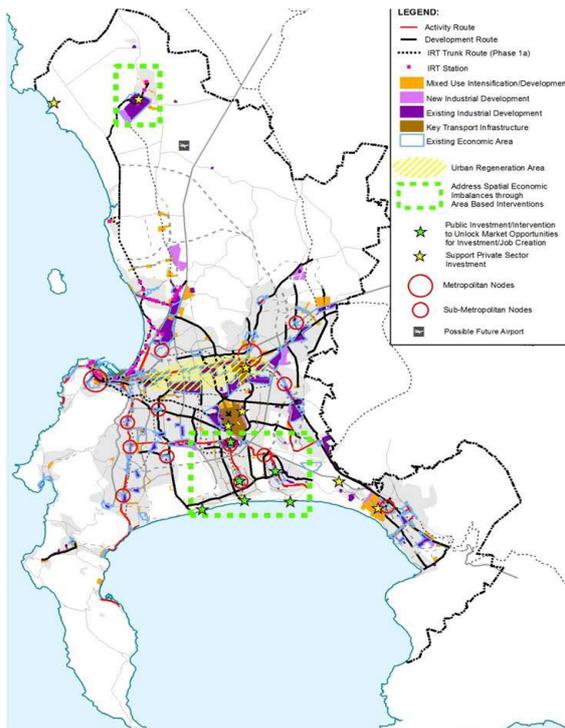


Figure No.14 Economic Activity, Spatial Development Framework, Source: City of Cape Town, 2012.

South African cities are the most unequal in the world registering high poverty levels and wealthy inhabitants (Regional Explorer, Global Insight 2011). While the Gini coefficient for Cape Town was 0,58 in 2010, Johannesburg and eThekweni (Durban) accounted by 0,62 and 0,63 respectively. Whereas Social assistance grants, the child support, disability and the old-age pension are helping to reduce the levels of inequality at small scale, these grants have been playing an important role in reducing poverty among the poorest households. High levels of unemployment contribute to increase inequality in Cape Town as well as increasing disparities in the income earnings of people in the labour market (CoCT 2010).

Key facts Economic Aspect

- Households in Cape Town living below poverty line was approximately 46% in 2009.
- Cape Town is second-largest economy of South Africa
- Cape Town’s contribution to the national economy is 10,9%
- The city’s economy is shifting towards the services industries
- There will be a decline in employment

- opportunities for semi-skilled and unskilled workers
- Cape Town lost close to 90.000 jobs from 2008 to 2010
- One in two economically active Capetonians between the age of 15 and 24 is unemployed
- Unemployed in the city increased by about 28% compared to the approximately 6% increase at national level
- Up to 75% of businesses in Cape Town are classified as small, medium and micro enterprises; these contribute up to 50% of the city’s economic output
- 93% of the small and micro-sized firms are low-tech operations in mature, traditional industries

Table No. 04. Key facts Economic Aspect. Source: Adapted from City of Cape Town, 2010

3.3.5 Health Aspect

South Africa has the largest burden of HIV/Aids globally. According to the figures, 5,7 million people living with HIV (UNAIDS Aids Epidemic 2009). It is estimated that HIV prevalence for the Western Cape was 16,8% of the total population (National HIV Survey 2009). At sub-district level, five of the eight sub-districts in the metropole had an HIV prevalence, with three sub-districts exceeding the city’s prevalence of 18,3 in 2009. In 2009 this rate improved slightly to 18,2 (Western Cape Department of Health 2010, p.36).

Cape Town has the lowest prevalence of HIV/Aids and STIs of all South African cities (CoCT 2010). It has had a prevalence and unchanged rate between 2004 and 2009, at an average of approximately 18% of the total population (Western Cape Department of Health, 2010). Cape Town shows higher HIV prevalence rates in informal settlements than in formal areas, with women in informal areas particularly at risk (CoCT 2010).

Regarding the Infant Mortality Rate (IMR), it is defined as the number of infants dying before reaching one year of age, per 1 000 live births and it indicates the level of health and development. According to World Bank 2011, South African’s IMR has been decline, from 48,2 in 1995 to 43,1 in 2009.

Health challenges

- HIV/Aids and TB are the key health challenges facing Cape Town residents.
- The Infant Mortality Rate across the city, which is used as an indicator of the state of health services. In 2009 the IMR was 43,1.
- The city's health infrastructure currently includes 82 clinics, four community health centers, 24 satellite clinics and four mobile clinics in Cape Town.
- women and child health services are required in order to prevent and promote services such as: family planning and immunisation and treating sick children under 13years of age)
- HIV/Aids/sexually transmitted infections and control is needed.

Table No. 05. Health Challenges Source: Adapted from City of Cape Town, 2010

Hunger

According to the Hunger index (National food Consumption Survey of 2005), 51,6% of the South African population experienced hunger; 28.2% at risk of hunger and only 20.2% appeared to be food secure. The percentage of hunger at household level is higher in rural areas that in urban areas 58.1% and 46.3% respectively. Only 14.4% were food secure in rural areas compared to 24.7% in urban areas. In addition, 10,9% of children under five years old are underweight and 17,1% of households live in informal settlements and 8% live in backyards.

According to the evidence, children are given food before the adults when there is not enough food for the entire family (Small 2007). In 2007, it is registered that 22.4% Children (17 years and younger) of backyard dwellings had gone hungry at least once a month, because there was not enough food; formal dwellings (15.3%) and informal dwellings (14.7%) (See figure NO.15); it is also possible that some of the children are involved in feeding schemes at schools (Small 2007, p.19). In addition, in higher percentage adults have gone hungry at least once a month 32.9% of backyard dwellings; 19.2% of informal dwellings and 18.6% of formal dwellings (Small 2007, p.19).

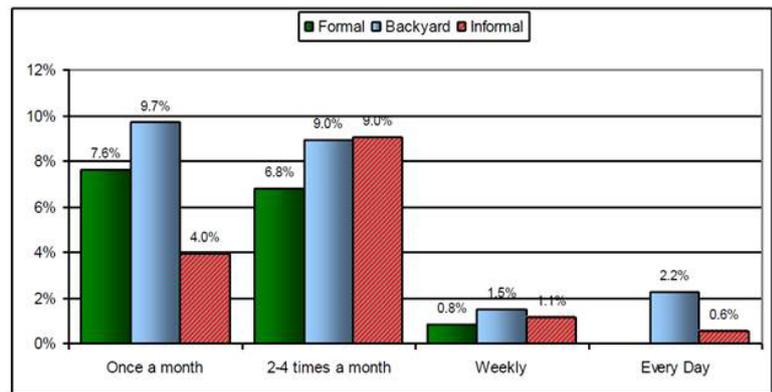


Figure No.15 Children Experiencing Hunger, Source: Small, 2007.

3.3.6. Environmental Aspect

The environmental challenges of Cape Town faces are climate change mitigation and adaptation, Conservation of unique natural landscapes or ecosystem and mitigation of resources depletion (CoCT, 2010).

Climate change adaptation and mitigation.

Due to climate changes effects, South African cities will register less rainfall, higher evaporation, higher temperatures less suitable for crops, unpredictable and extreme weather events (fires, droughts, floods) (Roux 2011). South Africa is one of the top 20 carbon polluters in the world; the national air quality standard is being met, PM10 levels 8; Cape Town far exceeds the recommended by the World Health Organization guidelines (Roux 2011). Cape Town's CO2 footprint was calculated at approximately 6,7 tons per capita in 2007. In fact, it is expected that by 2020 Cape Town source at least 10% of the metro's energy from renewable sources, thereby reducing its dependence on coal-based energy. In the future perspective, City of Cape Town has set a target of 10% use of renewable and clean-energy sources by 2020 with the development of renewal energy sources (Solar and wind) that facilitates energy generation and security in its provision (CoCT, 2010).

Conservation of unique natural landscapes or ecosystem.

The city has six endemic national vegetation types. Nearly 60% of the original extent of Cape Town's natural vegetation has been lost; it is one of the most threatened global biodiversity hot spots. Currently, approximately

40% of the Biodiversity Network is under formal conservation management (CoCT 2010).

Another important conservation issue is water quality, especially in the coastal water and inland water bodies. The quality of these water bodies is still poor due to polluted stormwater runoff from urban, peri-urban and agricultural areas (CoCT, 2010).

Mitigating resource depletion, the main challenges include rapid and accelerated demand for water and energy far exceeds natural capacity and the City's ability to supply these resources. The consumption of these resources is growing faster than the population growth rate; 3%. The scarcity of these resources affects the economy and quality of life, especially that of the urban poor (CoCT, 2010, p.88).

Water. According to per-capita figure for 1995 to 2010, the usage of water has remained stable; at 223,4 ℓ per capita per day, 16 or roughly 6,75 kℓ per month. It is expected if the current rainfall patterns persist; it will be run out of easily accessible water by 2016. The City of Cape Town has set an organizational target to reduce overall water usage to 290 billion ℓ per year, and to reduce per-capita usage to 180 litres ℓ per day (CoCT, 2010) (see figure No.16).

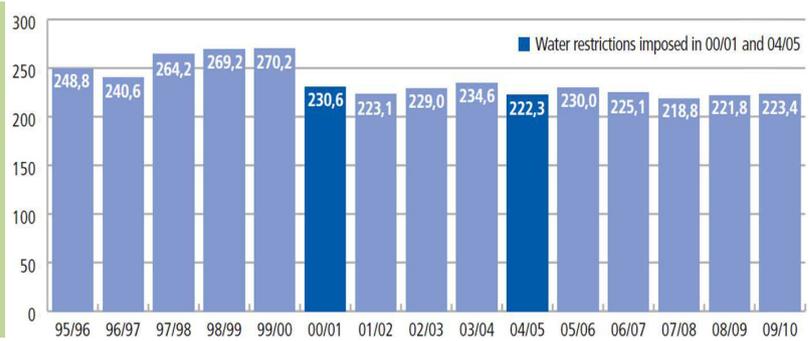


Figure No.16 Cape Town average daily water use per capita in litres, 1995–2010, Source: City of Cape Town Environmental Resource Management Department, 2010. Explorer, Global Insight, 2011.

Solid Waste. According to the figures, the amount of waste disposed at landfills has steadily declined in Cape Town. However, the period 2008-2009 showed a dramatic drop in the levels of waste disposed, with 1,56 million tons, or approximately 425 kg per person, having been disposed of during that year (CoCT 2010). Innovations in solid waste management technologies disposal are needed in order to

decrease the demand for landfill as well as generating energy solutions that offer the possibility to generate biogas from a renewable-energy product, by treating and recycling biodegradable waste into energy.

One of the biggest challenges is focus on recycling process. A number of waste recycling pilot projects have already launched in selected

neighborhoods, while the City has installed drop-off recycling depots. It is important to encourage the community to be involved in this process to reduce their carbon footprint at the household level by collecting recyclable waste as part of its regular municipal services and to create a system that could convert organic waste in such positive outcome for urban agriculture projects. Recycling has helped reduce the pressure on the City's landfills. According to water services authorities, Cape Town has scored the highest Blue Drop; 98% in 2010. Only 13% of municipalities nationally received an excellent rating in that year and City's public awareness and educational programmes on minimizing the impact on the environment have played an important role (CoCT 2010).

Food security. Resilient residents in Cape Town have to source food locally due to food shortages caused by climate change impacts (rain patterns). Community has to make a better use of land or roof space by planting and cultivating their own food in order to tackle high costs and fuel scarcity issues. In fact, the City's urban agriculture policy, programmes and measures should ensure the preservation of green spaces on the outskirts and promote the productive use of land. Currently, there are a few percentages of food gardens, 5% of Cape Town residents grow their own food, compared to 7% in Johannesburg and 13% in Msunduzi (CoCT 2010). Urban agriculture has the potential to create employment and control quality of fruit and vegetables in order to tackle food insecurity issues.

By implementing a multitude of approaches regarding awareness and change behavior at the household and business in terms of resource use and reuse; City aims to achieve positive results for improving Cape Town's natural wealth and provide healthy living environments for the community and its visitors. The idea is to promote efficiency and sustainability through introducing planning tools to contain the footprint and to promote mixed land uses within the urban system; taking into account economic activities, infrastructure, green areas and transport among others.

Environmental challenges
<ul style="list-style-type: none"> • Rapid urbanisation with a growing number of households that need access to basic municipal services, growing resource constraints • Encroachment on natural environments and biodiversity loss • Development pressure and the threat to unique cultural landscapes and productive land for urban agriculture • environmental pollution, carbon emissions from the increasing number of vehicles on the city's roads network and water pollutants from industrial waste • Water insecurity arising from changing rain patterns • Energy insecurity arising from global energy price shocks and the potential for electricity shortages • The looming prospect of food insecurity as climate change plays ravages with agricultural output, coupled with the inevitable rise in food (and other commodity) prices as the costs of transport increases together with the oil price.

Table No. 06. Environmental Challenges. Source: Adapted from City of Cape Town, 2010

3.4 RECAP RESEARCH GAP, PROBLEM STATEMENT, RESEARCH QUESTION AND HYPOTHESIS

Research Gap

After reviewing the theoretical framework; it is possible to determine that urban agriculture is officially recognized as an urban strategy by number of cities which through policy formulation and spatial planning strategies have integrated it as a land use component. Many city authorities have been developed policies regarding urban agriculture and have launched programmes and concrete actions to facilitate the sustainable implementation of this urban infrastructure (Zeeuw et al 2010).

Governmental bodies have provided legal recognition to urban agriculture in Cape Town through a mandate and the inclusion in the main planning tools; Spatial Development framework and the Zoning Schemes Regulations and the future official recognition as a land use.

However, *there is huge gap among policy formulation, planning tools, implementation strategies and political aspects, generating some serious shortcomings in the implementation process of urban agriculture, affecting urban underprivileged communities.* This gap is explained into detail in chapter number five.

Besides, the demographic framework reveals that City of Cape Town is facing serious social, economic, health, environmental and food security issues that can be addressed by implementing urban agriculture in public open spaces.

The main issues are: 1. High levels of undernourishment (CoCT 2010). 2. Households in Cape Town living below poverty line are approximately 46% without access to daily food. (CoCT 2010). 3. 28% of unemployment rate (CoCT 2010). 4. Low standards of healthy eating and physical activity; 43,1% Infant Mortality Rate (UN 2009). 5. Increasing environmental pollution (CoCT 2010). Encroachment on natural environments and biodiversity loss (CoCT 2010). Besides, In Cape Town 77% of households are food insecure, "only 5% households obtain food by growing it themselves" (Battersby 2011, p.30). Urban population in Cape Town has registered health problems related to improper diet.

The issues aforementioned reveal that *there is a gap in the formulation of proper strategies and the effective implementation of programmes and actions to tackle the main urban challenges in Cape Town.* Urban agriculture is a sustainable strategy that can result in social, environmental, spatial, and economic benefits when it is properly included in city strategies.

Problem Statement

City of Cape Town is facing serious challenges that are affecting citizens' living conditions and city's sustainable development. *There is an urgent need to generate food security, reduce poverty, overcome unemployment rate and environmental degradation in Cape Town.* Urban agriculture is a sustainable strategy that assists to tackle the main issues aforementioned when it is implemented properly.

Although, urban agriculture as a sustainable livelihood strategy for underprivileged communities is gaining Momentum in the spatial planning, land use management discourse and policy making in Cape Town; it needs to increase the scope and scale in order to response to the growing urban challenges and help to build a more resilient city, as well as working as a strategy to reconnect communities that still living the history of a social and spatial distinction.

The main problem that this research intends to address is based on the current situation at the strategic planning level:

There is a need to integrate effectively Urban Agriculture into urban spatial planning and land use management to tackle food insecurity, reduce environmental degradation, unemployment rate and poverty.

This problem is closely followed by three main considerations:

First of all, there is a huge gap among policy formulation, planning tools and the comprehensive implementation of urban agriculture in public open space in Cape Town.

Secondly, there are complex limitations to get access to land and proper infrastructure to allocate urban agriculture.

Thirdly, there is a serious competition among land uses in Cape Town that is affecting the implementation of urban agriculture.

Research Question

Established the main background and problem statement, this research aims to further this discussion by answering the following questions:

How urban agriculture in public space as livelihood strategy can be effectively integrated into the legal framework, spatial planning and land use management for tackling urban challenges and reconnecting City of Cape Town?

In order to conduct the analytical process the following guiding questions have been formulated:

- *What are the main potentials and main challenges ahead regarding urban agriculture in public space in Cape Town?*
- *What are the tools and strategies to effectively integrate urban agriculture into the spatial planning, land use management and policy framework?*
- *Who are the state and non-state actors involved in setting the conditions for implementing urban agriculture in Cape Town? How are they organized and what are the relationships among different actors, at different levels?*
- *What urban agriculture sustainable indicators can be used to effectively assess the integration and implementation process into spatial planning and land use management of urban agriculture in public space as instruments for decision-making process?*

is a milieu to reconnect Cape Town; a city of social and spatial distinction.

Hypothesis

The main gaps identified from the literature review conducted to formulate the following hypothesis:

The effective formulation of urban agriculture policies and regulations, integration into the spatial planning and land use management and its comprehensive implementation with adequate assessment, planning tools, strategies and actions, contribute to develop productive public spaces, ensure food, promote social inclusion, economic development, reduce environmental degradation, reduce poverty, increase resilience urban poor and support sustainable communities in Cape Town.

This hypothesis is followed by other sub-hypotheses addressing the fact that Communities can be benefited through using effectively public space for urban agriculture purposes:

Firstly, the sustainable vision of urban agriculture as a land use can contribute to overcome some of the most serious urban challenges in Cape Town; as well as its formal recognition assists to integrate effectively into the strategic agenda of city's development plans.

Secondly, the appropriate use public space through the implementation of urban agriculture



PLANNING TOOLS



URBAN AGRICULTURE

LEGAL FRAMEWORK

4. PLANNING TOOLS AND LEGAL FRAMEWORK OF URBAN AGRICULTURE IN CAPE TOWN



4.1 Legal Instruments for urban agriculture

The policy framework of urban agriculture should encompass planning policies, legislation and regulations that guide or regulate spatial planning and land use management (Mubvami 2006). The first step to articulate urban agriculture into the planning agenda is through providing it formal recognition in the policy framework. The inclusion requires development of new innovative planning practices, or the adaptation of existing ones, and supportive development policies (Muchamba 2006).

Urban agriculture needs to be recognised and included as part of development city's strategies (Mubvami 2006). For this reason, it is important to create dynamics around policy formulation, integration into spatial planning and implementation process. The creation of a common vision in regards to urban agriculture contributes to formulate or complement policies, regulations or by laws closely linked to it. Therefore, urban agriculture policy should be complemented by other policies such as public health, social, economic, food security or environmental policies to provide support to it. Policies on urban agriculture should address the following areas: poverty reduction; local economic development; environmental management; integration of disadvantaged groups; promotion of participatory governance and democratic cities among others (Muchamba 2006).

The main purpose of aforementioned is to set up objectives of equity entitlements to food and other urban area resources, especially land and water that need to be regulated and included into city's plans. In fact, urban agriculture in general is struggling with issues related to land accessibility and availability as well as water affordability; without the provision of these two elements, it is not possible to conceive the survival of urban agriculture and to foster other sustainable initiatives articulated to it.

City of Cape Town has launched some policies focused on regulating, addressing challenges and giving proper recognition to some areas such as urban agriculture. However, there is not

any linkage among policies that enable to give a comprehensive perspective of urban agriculture in Cape Town.

Recently, urban agriculture has been included into the two main planning tools. The first one, Spatial Development Framework that seeks to identify how the city should grow long term to achieve more balanced, inclusive and sustainable forms of living (Pieterse 2010). The second one is Zoning Schemes Regulations which is the document in charge of providing the land rights, working as a component of the policy-driven land use management system (CoCT 2012).

This chapter seeks to clarify how the planning tools work in terms of urban agriculture and the evident disconnection of these ones with the urban agriculture policy.

4.2 Urban Agriculture Policy

In general terms, the proper integration of urban agriculture formally in the city's governance is through establishing an urban agriculture policy in the Administrative Code (Cohen et al 2012). The policy should indicate the importance, contributions and constraints about urban agriculture in all sustainable dimensions; social, economic, environmental and spatial. As well as supporting its inclusion into spatial planning and land use management in order to clarify proper allocation and conditions for its implementation. The policy should synchronize with all departments involved such as environmental, water, waste, health, food, economic and human development, human settlements and so on.

Multi-stakeholders' participation is vital in two senses: policy's formulation and implementation process. The mutual commitment, cooperation and proper support among stakeholders, enables them to build up sustainable initiatives and perform in the common vision (Zeeuw 2010).

In the case of Cape Town, urban agriculture reached its formal status when the policy was launched and finally was adopted by the City council in 2007. This policy is mainly focused on tackling food security and economic

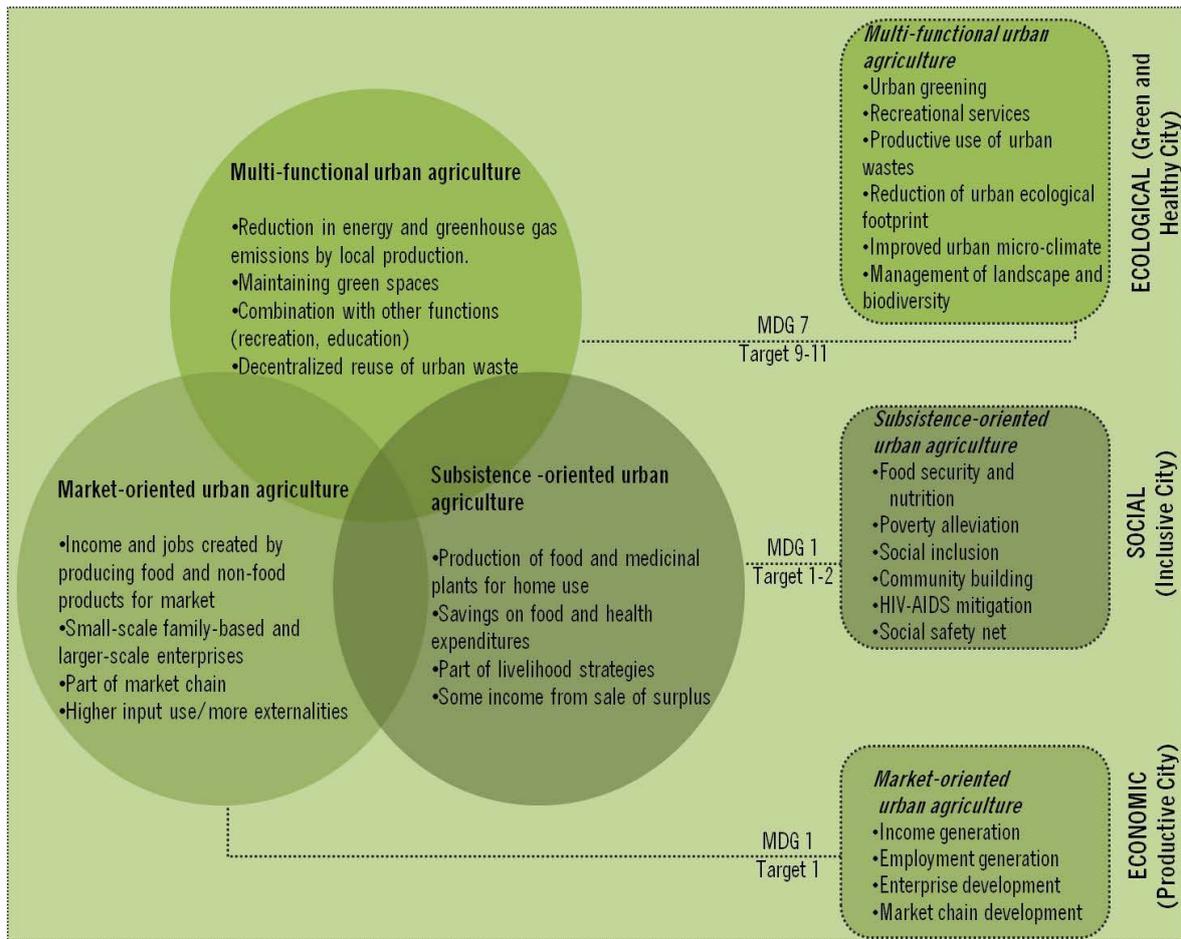
development. Currently, the policy belongs to strategic agenda of the Urban Agriculture Unit which is working on the second version that will be contemplated within the sustainability framework as a multi-functional activity with numerous cross-cutting benefits.

The second policy's version has as a major objective to increase the scope and scale; as well as putting together on it the strategy and implementation of the action plan¹; including economic approach: market oriented towards a productive city; social dimension: subsistence oriented focus on inclusive city and ecological category: multifunctional character in terms of green and healthy city (CoCT 2012) (see figure No.17).

Its main vision remains as in the first version: "A prosperous and growing urban agricultural sector" (CoCT 2012) developed in the following strategic goals: "To enable the poorest of the poor to utilize urban agriculture as an element of their survival strategy, to enable people to create commercially sustainable economic opportunities through urban agriculture, to enable previously disadvantaged people to participate in the land redistribution for agricultural development programme, to facilitate human resources development referred to technical, business and social skills training".

This policy aims to increase the importance of urban agriculture at governmental level to compete equally with other priorities for improved human and financial resource allocation; as well as establishing common vision, clarifying the role and municipal responsibilities in relation to other role-players and stakeholders, introducing a platform for multi-stakeholder consultation and participatory planning, expanding the urban agricultural support programme, enhancing an institutional framework that can facilitate the diversification and up scaling of urban agriculture in the City (CoCT 2012).

¹ Information provided by Spencer Fowle, Assistant Project Officer in Urban Agriculture unit, Development Facilitation Branch of the Directorate of Economic Development, City of Cape Town, in interview administered by Gloria Gaviria, on October 15th 2012 (Annex 04)



This new version's policy contemplates eight new key focus areas towards: Awareness of and advocacy for urban agriculture, policy, legal and regulatory framework, research, knowledge and technology transfer, Multi-stakeholder participation, communication and networking, Production and marketing horticulture, Production and marketing livestock keeping, Youth engagement, Urban Agricultural Unit Development (CoCT 2012). Another important point is the expectations on the policy as a guiding tool to align and synergise efforts to maximise the positive impacts of urban agriculture in the City with the support of all role-players (CoCT 2012).

In addition, the new policy is given an important step including one of the essential components of urban agriculture, livestock; currently considered illegal in urban areas. The policy based its integration on following definition: "Urban agriculture is the production, processing and marketing of crops vegetables, tree and other non-food crops, animals and fisheries within city boundaries or in the immediate surroundings." (CoCT 2012, p.3).

Figure No.17 Benefits of urban agriculture, Urban Agriculture Policy, Source: Adapted from City of Cape Town 2012, p.4. and Dubbeling et al 2006 p. 19.

It is expected that the Spatial Development Framework and Zoning Schemes adopt this definition in order to establish common vision on it.

There are some complaints from NGOs and community members concerning the disadvantages to not include animals as part of the urban agriculture development that were taken into account and included on it. However, if there is no a common definition among departments; policies and planning tools, the integration of urban agriculture into the spatial planning and its future consideration as a land use will not encompass a comprehensive vision in which livestock always will generate conflict in urban areas.

Although the new policy has broader dimensions in sustainability matters and livestock inclusion, it still being a non-inclusive policy, due to the fact that it is focused only on the poorest of the

poor within the urban (built) areas. In other words, it does not include the whole population; promoting unbalanced situations in this fragmented city. If the main goal is to create a holistic approach to complete food system, the inclusion of the whole population will be an advantage that benefits everybody in all the sustainability branches.

Besides, the policy does not include commercial farming and other agricultural activities outside the urban edge of the City. It means that the peri-urban agriculture is not considered on the priorities of this policy which can be a disadvantage in terms of linking social dynamics and economic viability that can benefit productively the city.

In relation to the aforementioned, the head of urban agriculture asserts that the main priorities of Urban Agriculture Unit are food security because the positive effect on underprivileged communities will be focused on the ability to grow their own food to eat and their capacity to produce it. Second one, survival income or empower and finally, micro farmers creation; the idea in this last priority is to assist farmers in how to farm or be commercial farmers².

However, it is expected that the new policy version of urban agriculture will be approved by May 2013. The Head of the Urban Agriculture Unit, Engineer Stanley Visser during interview explained that the important process to go through with the policy is first, to grant the support of the special policy unit in the main office. After that, the new policy's version will go to the legal department, the portfolio committee that is executed once a month, the major committee; and finally, to the chancellery committee which takes place every three months. If the entities aforementioned do not approve the policy, the process will be longer around six weeks more, approximately. One of the most important entities in this long process is the Legal department; if they refer back the

²Information provided by Agronomic Engineer Stanley Visser, Head of the Urban Agriculture Unit, Development Facilitation Branch of the Directorate of Economic Development, City of Cape Town, in interview administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

version, it will take 6 months more than expected to get a new urban agriculture policy³.

During the research process was possible to identify the core issues that are affecting the comprehensive implementation of current urban agriculture policy. First of all, the lack of support from the local government to the Urban Agriculture Unit; this situation is impacting the lack of human and financial resources that do not enable the Unit to be proactive, they are in a reactive momentum; working on strategies and policy formulation that will help them to gain recognition on the political scenario. Currently, there is no much more interaction among official departments and the urban Agriculture Unit to increase the implementation scope and the resources needed. The Unit is working with the Spatial Planning Department to identify land for urban agriculture purposes but the implementation process still without any exploration.

The second issue is that urban agriculture is not perceived as a critical issue; there is not yet sufficient information and understanding about the food security issue⁴. Although there is a need for a 'food security strategy', the policy is being applied in low scale in trying to support urban agriculture in the city for previously disadvantaged communities. There are other critical issues that are at the top of the priorities such as housing development demand.

The third issue is composed by two interrelated aspects, historical legacy and lack of political will. On one hand, historically, agriculture has not had a high status as a land use (part of modernist legacy); it is considered a consent use that can be implemented in specific areas. It has not reached the category of land use yet; the Zoning Schemes will enact in the new version the proper recognition of urban agriculture as land use.

On the other hand, there is also tremendous pressure to develop vacant land for housing;

³ See Annex 01

⁴ Information provided by Kier Hennessy, Principal Spatial Planner of Southern District & Cape Flats District, City of Cape Town, via electronic correspondence, on November 2nd 2012 (Annex 11)

therefore, this trumps agricultural land use from a political perspective⁵ according with the interests to achieve. There is any political intention to defend sustainability initiatives in terms of urban agriculture. This one cannot compete at the same level with other land uses such as housing, industry or commerce due to its current role as an activity or consent use. For this reason, housing is on the top of the priorities because its current demands, generating an important competition among land uses and favoritism among political intentions.

The policy stipulates that two of the main approaches in order to tackle the main challenges are primarily focused on the City as a facilitator and as catalyst. The former related to create an enabling environment for urban agricultural development through reducing red tape, introducing and exercising appropriate regulations and management systems. And the latter, refers to the provision of land, the construction of infrastructure and earth works; as well as the provision of inputs, project management and extension services (CoCT 2012). Currently, the Urban Agriculture Unit due to its reactive role and the lack of resources only provide inputs. Land allocation, training, evaluation and monitoring among others are the shortfalls of this policy implementation.

Regarding the policy imperatives that refers to this research; the inclusion of urban agriculture in land use management and spatial planning is listed as a one of the biggest strategies to be reached. In order to improve and make urban agriculture more sustainable it is necessary to give it a formal status. "This will be done through the inclusion of urban agriculture as a multifunctional activity in municipal planning and standard development processes concerning land use and environmental protection" (CoCT 2012. p.6). For instance, Spatial Development Framework, Zoning Schemes and site development plans will be integrating urban agricultural initiatives in the city. Furthermore, The City will ensure that urban agriculture will form an integral part of future development

⁵ Information provided by Claus Rabe, junior Officer of Metropolitan Spatial Planning and Growth Management, City of Cape Town, in interview administered by Gloria Gaviria, on October 11th 2012 (Annex 02)

planning. This includes apart of spatial planning; environmental planning, community development planning, human settlement planning, economic development and infrastructural planning, environmental health, among others (CoCT 2012. p.5). It works as a comprehensive strategy to unite common efforts in sustainable strategies that reconnect city.

The aforementioned is interesting in a sense that the urban agriculture will get recognition from the strategic planning but how is the implementation process; it has not been specified yet. This research intends to come up with some workable recommendations at the city management level that help to assist this process.

It is important to mention that the policy has the projection to develop the spirit of co-operative governance and the building of strategic partnerships through consultative forums. It contemplates the collaboration, sharing experiences, identifying and analysing problems and challenges that enable to re-assess the vision of urban agriculture with support to stakeholders involved such as citizens, urban farmers, civil organisations, private sector companies and other governmental entities in its drive to promote and manage the development of the urban agriculture (CoCT 2012).

Since 2007 the support to stakeholders such as NGOs and community members has been almost invisible; there is not much more interaction among them in terms of policy formulation and implementation process. They are not co-operating each other. They should align all efforts to build relevant partnerships and promote the elimination of contradictions, avoid overlaps and boost the common resource capacity. However, in the other sense, the city has actively created international interactions and it has participated in regional and international networks for urban agriculture that have been sought to establish working relationships and partnerships with international role-players like Rooftops Canada, Harare, Nairobi and Johannesburg⁶.

⁶ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

Another strategy that is urgently required is to link supplementary and complementary programmes with the urban agriculture development programme. Currently, the programme is working in isolation without establishing any integration with programmes such as the poverty alleviation strategy, urban renewal, new housing settlements, sector and business support, skills development, local area economic development strategies, HIV/Aids campaign, nutrition programme of the National Departments of Health and Education and the efforts of civil society and private sector.

As was mentioned before, the Urban Agriculture Unit is joining efforts with the Spatial Planning Department in identifying parcels of land available to prospective urban agricultural practitioners, taking into account location, size, accessibility, and cost to provide basic infrastructure, environmental impacts, typography, and needs of the surrounding community in the following ways: Disposal land, Lease land and Commonage land.

The Disposal of land in which the sale of land for urban agricultural purposes intends to avoid competition among land uses such as industrial development, housing, conservation, and infrastructure (disposal at market related prices) (CoCT, 2007).

The Lease of land works when the applicants do not want to or cannot afford to buy the land it can be leased out to them. Some pieces of land suitable for urban agricultural purposes cannot be disposed of, such as underutilized land around public facilities, road verges, etc. These pieces of land can also be leased out to prospective food growers/farmers (CoCT, 2007). The leasing works according to the permit system and the duration of the permit, the rental price and the type of agricultural activity will differ from site to site and will also depend on the intension of the applicants (e.g. private entrepreneur for own income or community group to provide food for old age homes, etc). It is required that the prospective lessee should be a legal entity with which the City can conclude a contract (CoCT, 2007, p.8).

The Commonage land will be acquired for the purpose of urban agriculture through the Land Reform Programme of the Department of Land Affairs. For instance, grant funding from the DLA will be used to purchase commercial farm land which will be made available (leased to) to the emerging city farmers through a permit system (CoCT, 2007, p.8).

However, there are some contradictions in which the policy stipulates and the Property Management Department allows. The head of Property Management Department Andre Human during interview clarified that the lease of land is not a viable alternative. The applications submitted by the departments for land designation only are applying for a reservation of piece of land. There is not a lease; there is an arrangement between Property Management Department and another department that is interesting in getting land. It means that the land is reserved for that purpose and time that was required⁷. This is a long process that makes difficult to get access to land in this competition of land uses.

The evidences reveal that there is non-affordable water for urban agriculture projects. The policy argues that the City will subsidize provision of water to the gardens of vulnerable groups. These include survival gardens of women, gardens for old age homes, gardens for HIV/Aids facilities, gardens for soup kitchens at schools and gardens at orphanages. The subsidy will include the provision of 10 kl of water per month for free per institution or group (CoCT, 2007, p.9). People have to apply to the water department to get the water subsidize. They will get 10 kl per month. In the moment that the gardens exceed it amount, the water will be cut off.

There is an interesting discussion around water affordability. On one hand, most of the urban farmers have complained about the cost of water, the difficulties to get a subsidy and lack of water for irrigating their gardens. On the other hand, the head of Urban Agriculture Unit

⁷ Information provided by, Andre Human, Head of Property management Department, City of Cape Town, in interview administered by Gloria Gaviria, on October 22nd 2012 (Annex 07)

argues during the interview that the water consumption and management in South African context is important and some gardens do not save water. He further asserts that “if people get water for free, they will never close the tap”. The idea with the subsidy is to control water consumption patterns and utilize water efficiently in order to reduce extra cost. There is fact that water is major issue that needs to be addressed in order to make real all the strategies formulated in the policy.

The Urban Agriculture Unit has developed a new scheme that clarifies their institutional framework and service delivery model to lead and facilitate the development of urban agriculture. This model provides a flexible approach which will minimize resource consumption and duplication, while increasing the ability to facilitate a wider range of initiatives to link all role payers (CoCT 2012). The new roles of the Urban Agriculture Unit which will enable them to give the first step in long way to change from reactive to proactive are: 1. A clearinghouse for all urban agricultural development assistance rendered by the City. 2. A mechanism to align and coordinate the development efforts of all role players (CoCT 2012) (see figure No. 18).

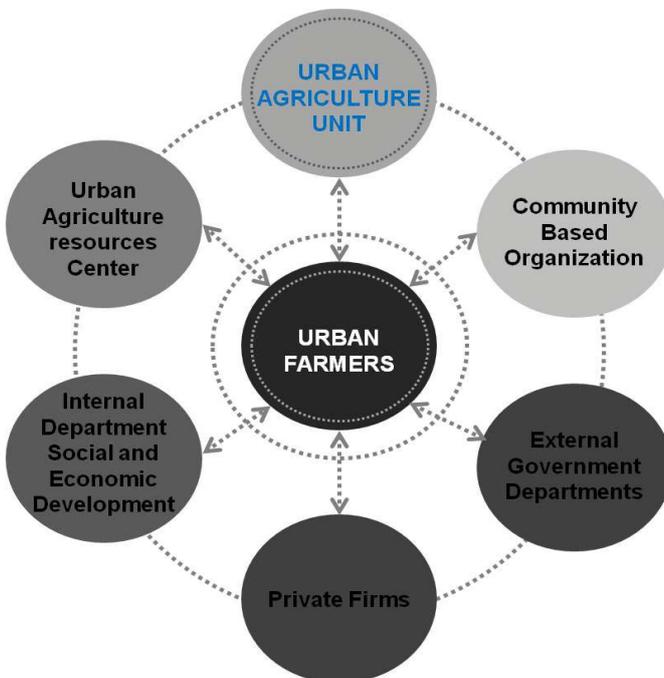


Figure No.18 Channels of Services and Development Assistance, Urban Agriculture Policy, Source: Adapted from City of City of Cape Town 2012, p.14

The policy is proposing some Urban Agriculture Resources Centers in which the city needs to make alliances to establish and operate these centers. The core ideas with these centers are that they work as service point for assistance, training provision, demonstrations and extension services, sell materials, tools and equipment, seeds and plants to the urban farmers, rent out tools and equipment to the urban farmers and provide project management where required (CoCT 2012). These centers should be operated by the Urban Agriculture Unit in order to support all stakeholders involved. To operationalize the centers is required some financial and human resources, some infrastructure, organization among others. The Urban Agriculture Unit does not have the capacity to handle this initiative; some alliances with NGOs and private sector that have experienced and manage this kind of concepts are the strategy to be considered for its proper implementation.

Some of the biggest criticisms of the previous version of the urban agriculture policy rely on three aspects: the lack of regulations or explanations about impacts and effects to the use and re-use of human and material resources, products and services found in and around that urban area for recyclability process (reuse of waste and water); in the case of some gardens that are implementing these eco-efficient initiatives, the regulation does not clarify any detail regarding the action or procedures to follow to do it properly. Second, the lack of regulations on health risks associated to urban agriculture due to the lack of training, monitoring and evaluation on urban agriculture practices. Finally, the implementation component. The policy does not clarify how will be achieved the formulation of the policy and who will be in charge of implementing actions on the ground.

The new version addressed important clarification of the implementation process through eight key actions and time frames in order to bridge the gap between the formulation and the implementation (See table No.06).

Concerning the impacts associated with reuse waste and water as well as health risk involved

in urban agriculture; these ones are still isolated in this policy formulation. The assistant project Officer of the Urban Agriculture Unit during interview discusses that the inclusion of these aspects is relevant and deserve some special attention in order to be included in the new policy. The Urban Agriculture Unit has to be more sustainable, flexible and dynamic in sustainability activities like reuse waste and water; organic gardening practices and so on.

Key Focus Area 1:	Awareness of and advocacy for urban agriculture
Strategic Goal:	To increase public awareness of the benefits of urban agriculture and the existence of support initiatives by the City and other role-players.
Programme 1.1:	Development, production and dissemination of information brochures and support materials Hosting information events/meetings/farmer days Develop urban agriculture branding, e.g. signage stickers etc.
Key Focus Area 2:	Policy, legal and regulatory framework
Strategic goal:	To create an enabling legal framework and administrative system conducive for the development and management of urban agriculture, i.e. enhancing the legitimacy of urban agriculture.
Programme 2.1:	Review all legislation impacting on urban agriculture (Acts, Ordinances By-Laws, Rules and Regulations).
Programme 2.2:	Develop and drive proposals to remove or change unnecessary legal impediment on urban agriculture. Develop an appropriate leasing system for City-owned land for urban agricultural practitioners. Include urban agriculture in spatial planning and land use management.

Key Focus Area 3:	Research, knowledge and technology transfer
Strategic goal:	To improve the understanding of the dynamics of urban agriculture in order to make more appropriate and effective adjustments to the policy and interventions.
Programme 3.1:	Establish and maintain a comprehensive stakeholder database. Identify challenges and opportunities and commission detail studies to find resolutions.
Key Focus Area 4:	Multi-stakeholder participation, communication and networking
Strategic goals:	To establish an all-inclusive ownership and responsibility for the growth and development of urban agriculture by involving residents, urban farmers, civil society organisation, private sector (business) and other internal and external government entities in the preparation, implementation, evaluation and review of the policy, interventions and action plans.
Programme 4.1:	Identify and analyse all strategies and interventions that could be linked to urban agriculture as multi-functional activity.
Programme 4.2:	Introduce multi-stakeholder action planning to achieve alignment co-ordination and integration. Participate actively in programmes and activities of other role-players (e.g. Food Security Working Group of Dept. of Agriculture)
Programme 4.3:	Create linkages between rural

	and urban agriculture.
Key Focus Area 5:	Production and marketing - horticulture
Strategic goal:	To improve the technical and entrepreneurial skills and capacities of vegetable farmers in order to increase the volume and quality of their production.
Programme 5.1:	Establish and develop strategic partnerships
Programme 5.2:	Establish and sustain consultative forums for urban agriculture.
Programme 5.3:	Participate in joint local and international initiatives to promote and develop urban agriculture. Link urban agriculture with commercial farming industry
Key Focus Area 6:	Production and marketing – livestock keeping
Strategic goal:	To improve the technical and entrepreneurial skills and capacities of livestock keepers in order to increase the volume and quality of their production.
Programme 6.1:	Conduct a skills needs analysis amongst urban farmers.
Programme 6.2:	Develop a comprehensive technical support programme and delivery mechanism. Develop and introduce monitoring and evaluation system.
Key Focus Area 7	Youth engagement
Strategic goal:	To make urban agriculture an acceptable and feasible option in the livelihood strategies of the youth.
Programme 7.1:	Determine elements of assistance per type of urban agricultural activity
Key Focus	Urban Agricultural Unit

Area 8:	Development
Strategic goal:	To increase the capacity and skills of the Urban Agriculture Unit in order to execute the strategic development agenda for urban agriculture.
Programme 8.1:	Develop youth engagement programme for urban agriculture.
Programme 8.2:	Determine and enhance the role of urban agriculture in the food system of Cape Town. Develop a specific sub-strategy for the keeping of livestock in the urban areas

Table No.06 Key Actions Urban Agriculture Policy. Source: Adapted from City of City of Cape Town 2012, p.17-19.

4.3 Spatial Development Framework

Spatial development framework (SDF) of Cape Town seeks to identify how the city's long term growth can best be managed to achieve more balanced, inclusive and sustainable forms of living (Pieterse 2010). It contains a set of proposals for developing a more integrated, compact city form that will guide the city's infrastructure development over the next 20 years.

This is a primary tool for land use and development management already set up in May 2012. Spatial development framework and structure plans stipulate where development may or may not happen in future and provide an overview of land use in the city (CoCT 2012). Spatial planning in Cape Town works to do a more sustainable vision as well as guiding how to manage public and private development to ensure the best possible outcome for its inhabitants. It seeks to protect and enhance the economic, social and environmental resources and assets in order to provide equitable opportunities to all citizens.

The core ideas of this SDF are to guide and manage urban growth, and to balance competing land use demands, by putting in place a long-term, logical development path that will shape

the spatial form and structure of Cape Town (CoCT 212). In this dynamic, the SDF contemplates three key strategies that will enable to build up a resilient and non-fragmented Cape Town. First strategy is to plan for employment, and improve access to economic opportunities. Second strategy is to manage urban growth, and create a balance between urban development and environmental protection. Third strategy is to build an inclusive, integrated and vibrant city (CoCT 2012).

In order to avoid inconsistent and chaotic basics for land use decisions; this planning framework comprises outdated plans with inconsistent status and conflicting development objectives. This SDF is the main planning tool which is updating and rationalising all aspects of the current planning framework, guided by the Municipal Systems Act (MSA) (Act 32 of 2000), new draft national planning law, the Provincial Spatial Development Framework (PSDF) (2009) and the Provincial Government of the Western Cape's law reform project, which is reviewing the Land Use Planning Ordinance (LUPO) (No 15 of 1985) (CoCT 212, p.10). The conceptual framework enables planners and policy makers to come up with the proper guidelines to address the main development issue along the city (See Figure No.19).

Towards a rationalised, policy-driven land use management system, these set of planning initiatives promote a more responsive, flexible and policy-driven approach to land use management, in which a broader range of instruments and policies are the guidelines to decision making process (see figure No.20). Although this SDF seeks to assist in this process is too early for analyzing results. The Spatial Planning Department recognizes that the SDF does not have any substantial impact in Cape Town yet. At the local area, they have improved initiatives but there are some areas that need to prioritize in terms of public investment⁸.

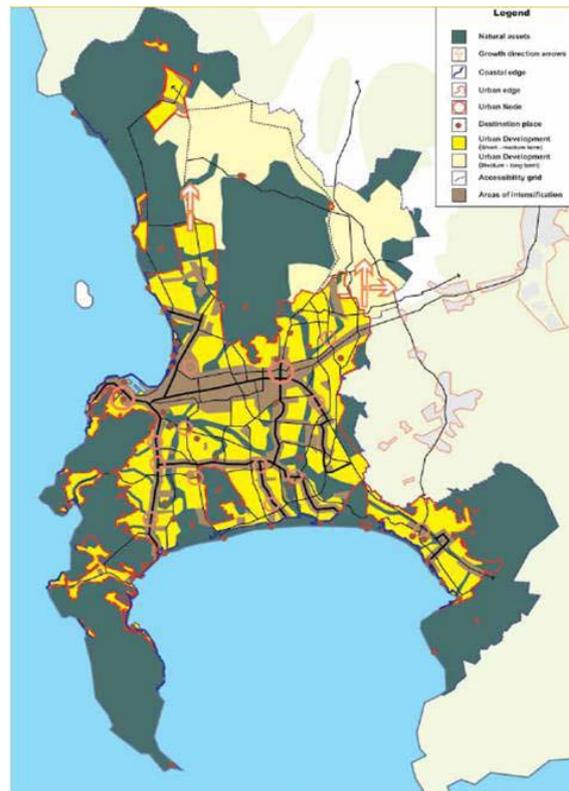


Figure No.19 Existing Situation and Future Land Use management System, Spatial Development Framework Source: City of City of Cape Town 2012, p.10.

⁸ Information provided by Vernon Moonsamy, Senior professional office of District spatial planning, City of Cape Town, in interview administered by Gloria Gaviria, on October 23rd 2012 (Annex 09)

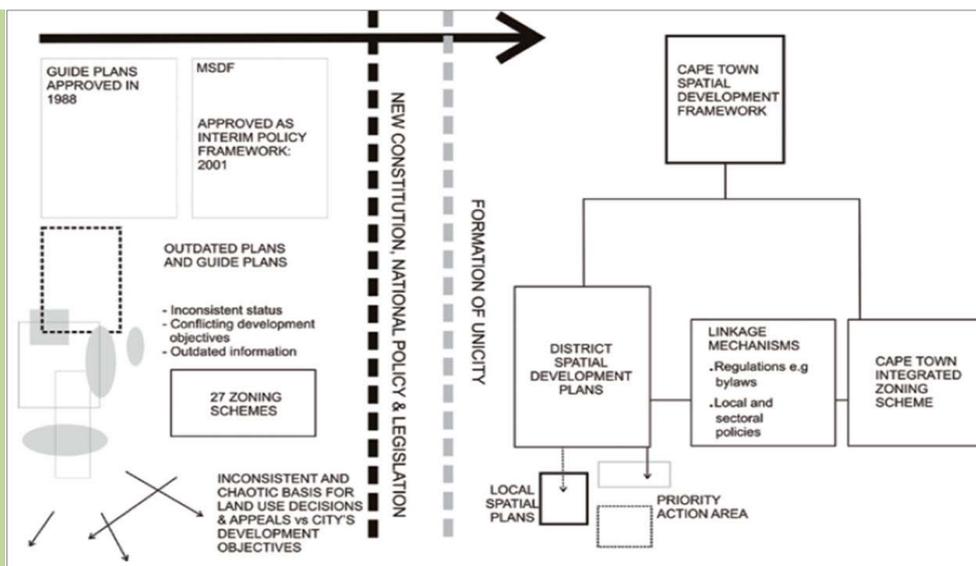


Figure No.20
Conceptual
Development
Framework, Spatial
Development
Framework. Source:
City of Cape
Town 2012, p.37

In line with this research, for first time in the Spatial Development Framework of Cape Town, urban agriculture plays a role in the spatial planning. Urban agriculture is gaining momentum at the institutional and planning level, policy formulation and strategic development in Cape Town. After the legal recognition provided to urban agriculture by the policy formulation; the second biggest step towards the implementation process and further development has been the important inclusion of urban agriculture into one of the most important planning tools in Cape Town. The last approval of land use planning was in 1998; document that did not take into consideration urban agriculture as a livelihood strategy to citizens. The new version of SDF has agricultural designations which promote urban agriculture and suggest activities that should be encouraged towards agriculture tourism facilities⁹.

The Junior Officer Town Planner of Project Packaging Unit of Spatial Planning and Urban Design Economic, Peter Gray during interview asserts that the City's planning policies are supportive of complimentary and flexible land uses such as integrated development with livelihood strategies such as urban agriculture¹⁰.

⁹ In interview with City and regional planner Vernon Moonsamy, administered by Gloria Gaviria, on October 23rd 2012 (Annex 09)

¹⁰ Information provided by Peter Gray, Junior Officer of Project Packaging Unit of Spatial Planning and Urban Design Economic, City of Cape Town, in interview

The second key strategy of the SDF that is to manage urban growth, and create a balance between urban development and environmental protection provides the guidelines and regulations to urban agriculture in Cape Town.

The strategy in which urban agriculture is included encourage the city to manage the future growth and development in a way that balances growth, human benefit and the environment, and addresses the impacts of climate change on livelihoods (See figure No.21), urban infrastructure and biodiversity networks (See figure No.22)(CoCT 2012), which in conjunction with the aquatic network and urban agricultural areas have to be protected and must be taken into consideration when planning for new development takes place in the city and in decision making process.

The Spatial Planning and Land Use Management Departments developed a set of sub strategies and actions that enclose the way to proceed with green productive areas. The sub strategy number 28 proposes to "Protect valuable agricultural areas, existing farmed areas and Horticultural areas from urban encroachment and support urban agriculture" (CoCT 2012). A set of policy guidelines and legislations are supporting the development of urban agriculture along the city such as Subdivision of Agricultural Land Act (No.70 of 1970), National Heritage Resources Act (No. 25 of 1999), Cape

administered by Gloria Gaviria, on October 11th 2012 (Annex 03)

Town Zoning Scheme 2012, City's Integrated Metropolitan Environmental Policy (2001), City's Philippi Horticultural Area Management Plan (2002) and Urban Agriculture Policy (2007).

The inclusion of urban agriculture into the SDF is based on the importance to ensure and promote food security and help to mitigate food prices increases (CoCT 2012). The SDF is proposing, First of all, the advocacy of agricultural areas which have high-potential and unique value. Second, the local protection of all agricultural areas of significant value; for example, the inclusion of heritage overlay zones or environmental applied through the relevant zoning regulations. Third, the inclusion of urban agriculture, particularly in areas where this can link to other economic activities, and livelihoods to provide 'vulnerable communities and provide for direct household consumption; including public or private areas. Finally, the development of management plans that prevent urban encroachment and land use in agricultural unlawful areas, negative minimise impacts of urban development on land farmed and manage use of water and other nature resources.

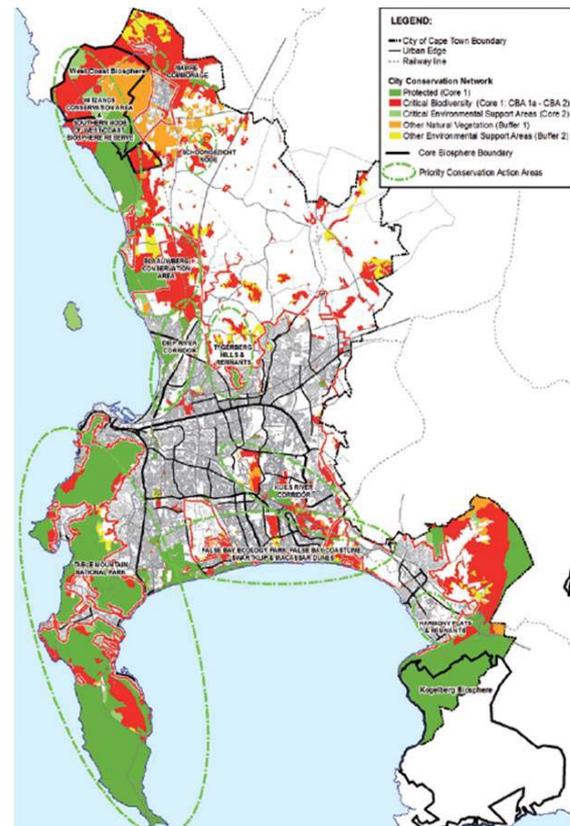


Figure No.22 Biodiversity Network, Spatial Development Framework Source: City of City of Cape Town 2012, p.37.

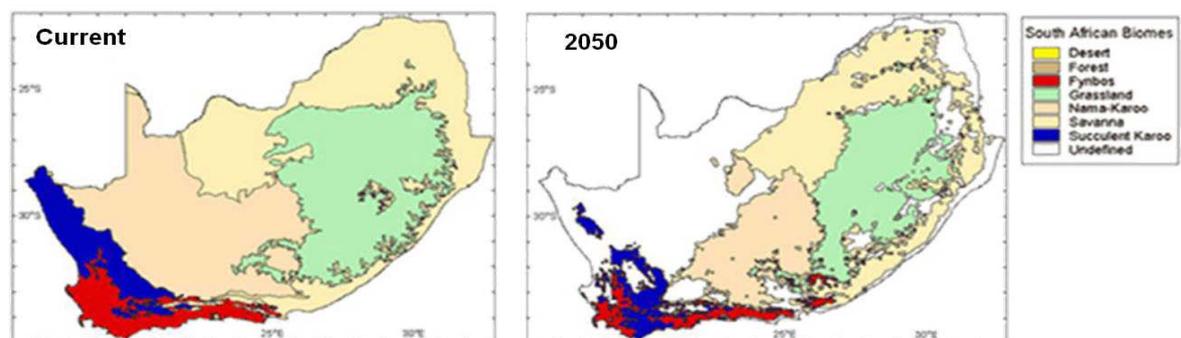


Figure No.21 Climate Change Impact on Biomes, Source: Govan 2010, p.10.

The specific actions proposed by the SDF in regards to urban agriculture are: 1. investigate the feasibility of 'high-potential agricultural areas and unique' being declared agricultural / cultural landscapes. 2. Conduct a research about the urban edge schaaakraal. 3. Actively police the development of non-conforming land uses, especially in the Philippi horticultural area.

Although the SDF is specifying these actions as tools to be taken into account in the way to proceed with agricultural areas of unique and significant value; the miscommunication among departments has not enabled to work together in

strategies that protect these areas for other uses such as housing development. Currently, there are some applications coming into for housing development proposals from the private sector in Philippi area; the main area of potential agriculture and urban agriculture land. Besides, there are other applications running in the Philippi Horticultural Area that are focused on legalizing illegal uses. However, the District Spatial Planning Department has recommended not changing the urban edge for housing

development due to the fact that this is an area of significant value and historical legacy for urban agriculture purposes.

In terms of policy guidelines that support urban agriculture, there are four main mandates: 1. all land use management decisions should be guided by the development guidelines in the relevant District Spatial Planning Department. 2. The section of the Philippi Horticultural Area that is excluded from urban development by the urban edge should be retained for horticultural purposes and the exploitation of silica in the long term. 3. Discourage the further subdivision of land in the Philippi Horticultural Area below what is permitted by the zoning and no further township development should be considered. 4. Discourage development that undermines agricultural activity in Philippi and Constantia, Lourensford and Durbanville winelands/cultural landscapes.

The District Spatial Planning Department has identified new development areas for housing. It is not clear what is the interest from Housing Department and private sector in Philippi Horticultural Area; there is other alternatives location for housing development which is an aspect on the governmental priorities. It does not make sense at all to put housing over this very productive area.

The SDF has established the criteria for identifying commonages and land suited to a broad range of farming activities as a means of supporting agriculture-related to land reform. The Framework to be used to guide the identification of land for urban agriculture purposes is clarified in the following criteria (See table No.07).

As is possible to infer from the criteria established by the Spatial Planning and the Land Use Management Department for identifying land for urban agriculture; keeping livestock is not allow in urban areas. This is a big issue that was reported by urban farmers who considered this Animal husbandry as an important economic source that should be included. Nowadays, it is illegal to keep livestock; but it is absolutely contradicted with the urban agriculture policy. It is important to encompass definition and common

understanding what urban agriculture means among departments, planning tools and policy. While the main planning tools both SDF and the Zoning Schemes do not allow animal husbandry, the urban agriculture policy includes and promotes this important category in its guidelines as well as the criteria already set up by the Urbana Agriculture Unit which takes into account this important component. There is a further explanation about this in chapter number six.

One of the positive arguments of this inclusion of urban agriculture into the land use planning is that this tool has the capacity to regulate, make agreements among departments on land issue; as well as working as a tool to inform decision making. This SDF is a planning tool that makes the arguments stronger. However, some tools should be developed by the Spatial Planning Department and the Land Use Department to focus on issues that refers to policy implementation, communication among departments to develop communal strategies; and to actively interact with the Urban Agriculture Unit in order to integrate and identify the real needs that refers to land, in regards to accessibility, availability, land identification, zonification, allocation and designation; water affordability; mapping existing urban agriculture areas and preserve agriculture areas of significant value.

CATEGORIES/SCALE OF FARMING		TYPE OF ACTIVITY	LOCATION				
			U r b a n	Small- holding/ large erven	Peri- urban (inside urban edge)	R u r a l	Locational Factors
Commercial (large-scale and medium- scale)	Commercial production	Plant production	✓	✓	✓	✓	<ul style="list-style-type: none"> •Availability and affordability of water. •Advantageous if flat. •Good soils required for plant production.
		Animal husbandry	X	✓	✓	✓	
Small- scale/emerging farming	Livelihood production	Plant production	✓	✓	✓	✓	<ul style="list-style-type: none"> •Close to where people live. •Availability and affordability of water. •Advantageous if flat. •Good soils required for plant production.
		Animal husbandry	X	✓	✓	✓	
Commonages (Publicly-owned and Publicly- managed)	Livelihood production	Animal husbandry	X	✓	✓	✓	<ul style="list-style-type: none"> •Extensive grazing/pasture. •Close to where people live. •Availability and affordability of water. •Advantageous if flat. •Good soils replant production.
		Plant production	✓	✓	✓	✓	
Community gardens/allotm ents (publicly owned and managed)	Livelihood production	Plant production	✓	✓	✓	✓	<ul style="list-style-type: none"> •Close to where people live. •Availability and affordability of water. •Advantageous if flat. •Good soils required for plant production.
Community kraals (publicly owned and managed)	Livelihood production	Animal husbandry	X	✓	✓	✓	<ul style="list-style-type: none"> •Outside urban area, and away from major transportation corridors and national roads, but as close as possible to residential area. •Work on minimum-grazing principle.
Aquaculture		Plan- specific	✓	✓	✓	✓	<ul style="list-style-type: none"> •Availability and affordability of water and advantageous if flat.
Trading of produce and live animals		Plan- specific	✓	✓	✓	✓	<ul style="list-style-type: none"> •Accessibility in terms of transport routes and pedestrian routes. •Demarcated trading areas.

Table No.07 Identification of Land for Urban Agriculture, Spatial Development Framework Source: City of City of Cape Town 2012, p.72.

Although the inclusion in the SDF is a big step in terms of policy formulation and regulation procedures, it is important to generate common agreements among departments and develop a set of strategies that clarify clearly how to

proceed with urban agriculture and how it should be implemented. There are some inconsistencies in relation to the urban agriculture policy, the SDF and implementation process. There is a formulation of these policies and planning tools but the gap is on the implementation, communication among department and common agreement on definitions and procedures. In terms of projects and guidelines for projects for public investment, they have to take into account public open spaces and how to integrate into open agriculture.

Commercial Farming



Emerging Farming



Commonage Public Land



Community Gardens



Aquaculture



4.4 Integrated Zoning Schemes Regulations

The Land Use Management integrates all urban system functions into a single standard zoning scheme for the entire city and with uniform regulations. This Zoning scheme is an important planning tool which determines the use rights and provides control over use rights and restrictions over the utilization of land in the area of jurisdiction of a local authority (CoCT 2012). This tool states that one property is suitable for a specific land use or activity according to some criteria. Currently, there are 27 zoning schemes in the city and urban agriculture is included as an activity or consent use that implies to apply to council for approval. However, there is a new version of Zoning Schemes Regulations in which urban agriculture is absolutely defined as a land use in certain zones¹¹. This version will be launched in early 2013.

Zoning Schemes Regulations (ZSR) is an important tool for the City because it has introduced new planning techniques in the form of the overlay¹² zoning category, whereby policy guidelines contained in the SDF may be translated into development rules after following a specific process (CoCT 2012). Furthermore, ZSR intends to work in conjunction with, and inked to, policy plans and other tools in the Land Use Management System, to enable Council to proactively manage land and development in the city; as well as establishing a common vision with the Spatial Development Framework, District Spatial Development Plans and local area or sector plans.

¹¹ Information provided by Schalk De Jager, Senior professional Officer of Land Use Management Department, City of Cape Town, in interview administered by Gloria Gaviria, on October 17th 2012 (Annex 05)

¹² overlay zone means a category of zoning applicable to a particular area or land unit which:

(a) stipulates development rules and/or use rights in addition to the base zone requirements, which may be more or less restrictive; and

(b) may include provisions and development rules relating to primary uses, additional uses or consent uses, provisions in the base zone, subdivision and subdivisional areas, special planning areas, development incentives, density limitations, urban form, urban renewal, heritage and environmental protection, management of the urban edge, scenic drives or local areas, or any other purpose, as set out in this zoning scheme or regulations promulgated in terms of the Municipal Systems Act.

After the legalization of urban agriculture through the policy formulation, the integration into the Spatial Development Framework; the third big step towards the comprehensive integration and implementation has been formulated: the new status of urban agriculture as a land use. For this research it is essential to analyze these three big steps, how they are complemented or contradicted each other in order to confront the challenges already identified and look for the strategies in its further implementation.

In theory, the inclusion of urban agriculture into zoning schemes should represent the protection of certain areas of the city that have significant agricultural value or can be suitable for developing these sustainable alternatives. Besides, the overlay zoning category enables to combine or separate certain land uses depending on the degree of conflict or synergy; including space for home gardens or community farms in public open space, social housing, and public facilities projects among others.

Urban agriculture is contemplated in the ZSR as an activity or consent use. The latter is defined as a "land use specified in a zone or subzone in this zoning scheme as a consent use which is permitted in terms of the provisions of a particular zone only with the approval of Council" (CoCT 2012). In this line, urban agriculture only can be implemented as a consent use in single residential zones, community zones, utility zones and public open space and as a primary use in single residential zones type number two which refers to incremental housing (CoCT 2012).

Basically, the inclusion of urban agriculture into the ZSR has represented for the Urban Agriculture Unit the allocation of annual budget; although it is not enough for being more proactive and assisting to solve the main challenges. This integration has influenced some departments to start the process for identifying land for urban agriculture; but in this process is essential to look at the integration of urban agriculture in new development dynamics and different possible scenarios; such as new housing development, mixed use development

and the proper use of private and public open space among others.

In reality, although urban agriculture has been included in the zoning schemes, it has not accommodated to any great extent in the city. Currently, there are zoning maps per district; in which the agricultural land of significant value has been identified but there is not specific zoning for urban agriculture. This is mainly due to the fact that it has not been designated as land use yet and it is considered an activity; urban agriculture does not belong to the same category to other land uses that demand attention in decision making and land zonification. There is an ongoing process on identification of land but this process is definitely not a land zonification.

One of the biggest contradictions among urban agriculture policy and Zoning Scheme Regulations is in terms of conceptualization. The definition established in the ZSR is less broad than the one formulated by the urban agriculture policy. The former is explained as follows: "urban agriculture means the cultivation of crops, on relatively small areas within the urban area or edge, for own consumption or sale in neighboring markets; provided that cultivation of a garden at a dwelling by an occupant shall not be regarded as urban agriculture for the purpose of this zoning scheme"(CoCT 2012, p.137). And the latter says: "Urban agriculture is the production, processing and marketing of crops vegetables, tree and other non-food crops, animals and fisheries within city boundaries or in the immediate surroundings" (CoCT 2012, p.3).

There are clear differences among Zoning Schemes, the Spatial Development Frameworks, structure plans and policy plans associated with forward planning to guide developers and decision-makers and declared strategies for environmental, economic, spatial, and social infrastructure development in terms of urban agriculture. It is possible to clarify the four main differences among planning tools and the urban agriculture policy; that in essence represents miscommunication and a difference among departments that is affecting the comprehensive implementation of urban agriculture.

First of all, it is very clear that the important component of animal husbandry is not considered in the ZSR. There are some urban farmers that are in an illegal position because the urban agriculture policy allows them to keep livestock and the planning tools for development management in the city prohibit this farming activity.

Second one, ZSR does not include home gardens developed by an occupant. There are some home gardens running at the township level supported by NGOs that do not receive the support of local government according to these ZSR.

Third one, urban agriculture policy does not conceive the commercial farming component and other agricultural activities outside the urban edge of the City. Peri-urban agriculture is not included while the ZSR promotes market oriented urban agriculture including commercial activities in the urban edge.

Finally, although the ZSR is not formalizing in its regulations plots size, the projects' dimension is being conditioned in the definition when it refers that urban agriculture activity is developed in relatively small areas. This definition put in risk the further implementation of urban agriculture in public open space. If a group of urban farmers want to have an agricultural facility in the open public space, they will have to apply in the city for consent use; this is a long procedure that will take more than two years.

According to the Land Affairs Department the zoning schemes should support urban agriculture in the following activities: Harvesting of natural resources, Intensive horticulture, Intensive animal farming, Plant nursery, Greenhouse (tunnel farming), Aqua-culture, Abattoir, Commercial agriculture, Agricultural industry (processing of produce), Informal trading, Open space and Public open space, ancillary (home garden), and land zonification. This support is not well established by the ZSR. It is important to establish common definitions, criteria and parameters to proceed with urban agriculture in Cape Town. In this way the inclusion of urban agriculture into the land use

management, spatial planning and its implementation in public open spaces will be more sustainable.



Single Residential Zone



Community Zones



Utility Zone



Public Open Space

4.5 Public Open Space system

City of Cape Town has the Metropolitan Open public Space System that is interconnected and managed as multi-use network that supports interactions between social, economic and ecological activities. The purpose of public open space in the city is focused on enhancing both ecological processes and human settlements (CoCT, 2010). Public open space seeks to be the sustainable vision of Cape Town to mitigate, adapt and be resilient to climate change conditions.

It is important to the research purposes; clarify the meaning of public open space in Cape Town, according to the planning tools established in the Integrated zoning scheme regulation. It is defined as follows: “public open space means land which is designated as public open space, under the ownership of Council or other public authority, with or without access control, and which is set aside for the public as an open space for recreation or outdoor sport, including a park, playground, public or urban square, picnic area, public garden, nature area; and includes ancillary buildings, infrastructure and uses” (CoCT 2012, p.132).

The importance of public open spaces provides an essential collective support system for the urban population. These places are the extension of the private life on the public area. In fact, communal facilities and public places of urban life could have a significant impact on people’s living conditions. City of Cape Town is creating strategies for a better quality green and public open spaces, such as the city’s biodiversity network and coastal areas, and well-maintained, City-owned attractions and tourism precincts will enhance people’s quality of life, and contribute to investment and tourism (CoCT 2012). But in reality there is much more to analyze in order to implement sustainable initiatives in public open areas along the whole city.

The Zoning Scheme Regulations contemplates three types of zones for public open space that fulfill different functions. Only in two of this type of public open space is allow implementing urban agriculture. Certain open spaces have particular importance as nature, cultural heritage or environmental areas and a separate zone facilitates the management of these areas. Other open spaces have a more active role in addressing the sporting and recreation community’s needs.

The first category of public open space is environmental conservation; it provides for the conservation of environmental resources, including cultural heritage resources. This category is mainly focused on environmental education, associated infrastructure and facilities for tourists and visitors with the

approval of Council (CoCT 2012). In this category urban agriculture is not included.

The second type is public open space; it provides for active and passive recreational areas on public land, as well as protection of landscape and heritage areas including woodlands, ridges, watercourses, wetlands and the coastline (CoCT 2012). And the third type is special open space; it provides for active or passive recreation and open spaces on land that is not designated as public open space. This land may be owned by private or public bodies, but does not have the status of public open space which requires particular protection (CoCT 2012). It is completely possible to allocate urban agriculture in these two categories but the city council needs to give approval on the applications submitted to this purpose.

The process to launch an urban agriculture project in public space relies on a political complexity. It will be a political decision to designate land for urban agriculture in a public space area. As it is a consent use, applications for urban agriculture have to go to a land use process; apply for the rezoning and finally a political decision will define to change or not the use. Rezoning can be a very long process; if there are not major objections from residents in the area, local authorities, official departments, land owner (City or province), it will be less complex but normally it is. Basically, when the process starts and the application is submitted, this is advertised for public participation process, in that process people have the opportunity to object or to make comments. If they object, it definitely makes the process longer. It is expected that with the new categorization of urban agriculture as a proper land use, process to get access to land for urban agriculture will improve. A set of criteria, zoning measures are needed to implement urban agriculture in a comprehensive manner as well as granting a productive use of some public open spaces in the city.

Furthermore, the biodiversity network is reflected on the public open space and urban edges are projected as ecological corridors linking natural environments (CoCT 2009) (See

figure No.23). The main representation of urban agriculture in Cape Town; Philippi Horticultural area is located in one of the urban edge that belongs to the network. Currently, it is not well protected and is in risk to be converted to housing development. According to the historical legacy of spatial distinction in the city, there is not sense of belonging on public open areas from citizens. The history of public open spaces has changed since 2007; with the successful interventions made by Violence Prevention through Urban Upgrading project which implemented a formal network of projects including public facilities into public open spaces to give character to those places and to defend community members against criminality and avoiding the association between public space and insecurity.

Sustainable public open spaces should be the new vision of urban agriculture in Cape Town in order to convert these spaces to productive safe areas; reducing criminality and giving a new green character. The core idea should be foster urban agriculture in these areas to create productive open spaces where people can develop an activity and generate economic gains from this open land, create a network of projects along the city that reconnect communities to a sustainable manner. Further explanations about this topic are developed in chapter number six.

4.7 Dignified Places Programme: Violence Prevention through Urban Upgrading

The Violence Prevention through Urban Upgrading (VPUU) project is a holistic approach to urban upgrading that is unique in the Cape Town context in the way that it has integrated all forms of development and not only the physical upgrading of urban spaces (CoCT 2012, p. 26). The principles of equity, integration and sustainable development are the realistic vision of this programme that started its implementation in marginalized areas since 1998. This programme is addressing inequality and fragmentation in Cape Town through a strategic plan that integrates public investment and catalyses the process of

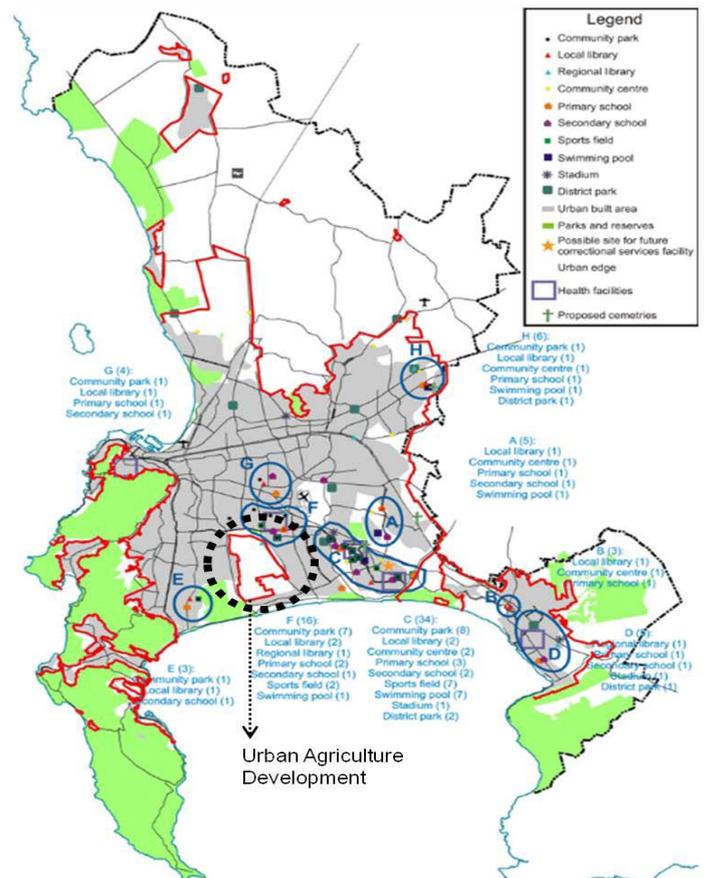


Figure No.23 Priority Public Open Space System, Spatial Development Framework. Source: City of Cape Town. 2012.

urban transformation in public space (CoCT, 2010). This provides identity to public space, while promoting spatial equity and social integration. Vibrant public spaces are means to embrace identification and create a sustainable future for Cape Town, tackling issues of inequity and social injustice (CoCT, 2010). Urban agriculture has been integrated into the programme as way to provide economic opportunities, using public space.

On one hand, through this programme, public space is playing an important role in the city at the strategic development, spatial planning, environmental and economic department. On the other hand, the programme is an integral part of the transport, housing, informal settlement upgrade, urban restructuring and economic development strategies (Sowthworth 2010). Sowthworth further agrees that is important to generate equitable access to resources and opportunities of the city. It implies to enable and

promote intensity, diversity and necessary complexity; as well as enabling a sense of place where facilities positive social interaction through positive place making.

The spatial principles that embrace the dignified programme are: First, equity that refers to the strategic location of public space with the potential to integrate the city, promotes accessibility, or established a new and positive sense of place. These public spaces are complemented by the second principle that is the organic style which refers to the protection during a period when community and urban management priorities are not participating on them in order to avoid vandalism, insecurity or being dumping areas.

The third component focuses on establishing a system of public spaces that communicated a sense of permanence and clear spatial definition, this principle is place making. Following this, the fourth principle is integration of sectoral, spatial and institutional benefits to improve accessibility, convenience and efficient management. The two last principles are minimalism and generation of product. The former related to the provision of security. The latter promotes the edges of both the spaces themselves and their relationship with surrounding land uses and activities. These spaces encourage active engagement with formal and informal activities (Sowthworth 2010).

In this frame, the Violence prevention through Urban Upgrading (VPUU) programme has been the most successful initiative developed in Khayelitsha Township to promote social engagement and town planning as tools in fighting crime (See figure No.24). This programme is a partnership between the city and the German Development Bank. It works mainly in three lines social crime prevention, institutional crime prevention and administration environment, situational crime prevention (Krause 2012).

The VPUU project' aim is to improve the living conditions for residents. VPUU looks at the whole area and analyze what the community need is and try to get a better space for

developing a project. The purpose of these is to eliminate existing crime hotspots and simultaneously create integrated human settlements (Palmer et al 2012). Through a series of "active boxes" the programme is providing security to the public space projects and these boxes work as community patrol bases. They are open 24 hours a day to provide protection to anyone that feel threatened.

VPUU project means community participation. VPUU actively engages the community and creates strategic partnerships in permanent cooperation to empower strong community leadership (Krause 2012). Community trusts in VPUU as a local authority because they have seen positive results trough their projects and they have contributed to build up their own security; as well as sense of identity with the public space. Therefore, an open and inclusive process has allowed the residents of the safe node areas to interact and engage with VPUU in order to take ownership of the urban environment and the social interventions of the programme (local people take ownership of spaces). There is the potential for the programme to be side-scaled in other areas with similar problems; it is already in the process of being replicated in other areas around Cape Flats such as Nyanga which has registered the highest levels of insecurity in Western Cape recently.¹³

VPUU is moving away from the old top down approach of development where the powers that be thought they knew what communities needed without approaching them. VPUU works in conjunction with the community to do spatial planning at grassroots level. Up to this point, most of what VPUU has been engaged in is the design and building of community buildings such as the library, the live work units, the business hub which includes the distribution centre and additional line shops, etc. All of this is done in close co- operation with the local communities from leadership down to those directly impacted. VPUU has a special community participation work stream that leads

¹³ In interview with Mrs. Katharine Miszewski, administered by Gloria Gavia on October 18th 2012 (Annex 15)

all community engagement; this is one of the main pillars of VPUU.

Based on the experience mentioned above and following in the line of the programme, VPUU is thinking strategically to stimulate economic activities and develop new interventions focus on supporting urban agriculture projects in public space¹⁴. They have the vision that urban agriculture is very beneficial to the community; in a sense that they can offer training, access to market and the land will be safer because there will be a sustainable activity. The main vision of VPUU is creating collectively an economic opportunity for marginalized communities around urban agriculture projects, in alliance with the NGO Abalimi Bezekhaya. This is one of the aims that VPUU, collecting urban farmers; to be able to make the supply available. VPUU is working to co-creating the future of Cape Town with the community through creating dignified public spaces.

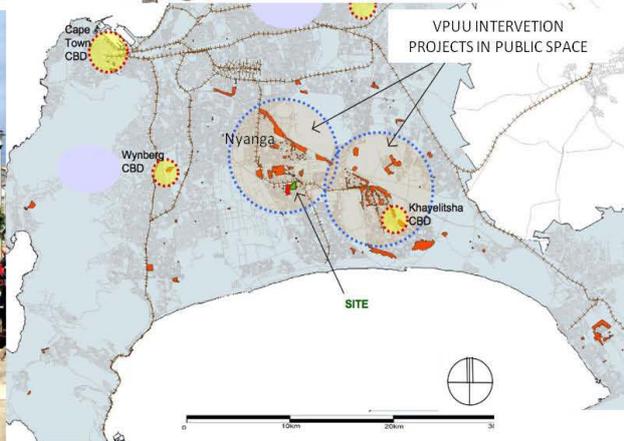


Figure No.24 Violence Prevention through Urban Upgrading Projects, Source: designed by the author: Map adapted from Goven, 2010 and Pictures from Bidbook CoCT 2012.

¹⁴ See Annex 15

URBAN AGRICULTURE

IN CAPE TOWN



Productive
Green
Healthy
City
Inclusive

The new vision of Urban agriculture in Cape Town intends to achieve major objectives towards a more inclusive, productive, green and healthy city (CoCT, 2012). Although, urban agriculture as a sustainable livelihood strategy for underprivileged communities is gaining Momentum in the spatial planning discourse, policy making and multi stakeholders' participation in Cape Town; it needs to increase the scope and scale in order to response to the growing urban challenges and help to build a more resilient city, as well as working as a strategy to reconnect communities that still living the history of a social and spatial distinction.

Since 2007 urban agriculture reached a formal recognition and increased a public political presence among city's departments and role players when the policy was developed by the Urban Agriculture Unit within the Economic Development Facilitation Branch and launched by the city council (CoCT 2007). After number of overlapping efforts from some departments in the city on successful and non successful projects; the Urban Agriculture Unit enters to lead the process to hold together those initiatives and formalizes urban agriculture in Cape Town as a strategy to cope economic issues, food insecurity and reduce poverty (Rogerson 2011, cited in Battersby 2012).

The emerging discourse of including urban agriculture in land use management and spatial planning is addressing in the new version of urban agriculture policy as an integral part of the city's future development; in which is important to include the main departments that will be in charge of supporting project's initiatives to achieve strategic goals and objectives of the City's Integrated Development Plan and Districts' Plans.

City of Cape Town (CoCT) declares in its policy that urban agriculture can contribute meaningfully towards a sustainable and resilient City (CoCT 2007). even though Non-Governmental Organizations (NGOs) have devoted major efforts to build a resilient Cape Town through the implementation and support

of number of urban agriculture projects in low income areas, last studies supported by the African Food Security Urban Network (AFSUN 2011) and based on three sample areas in Cape Town, clarifies the reality; few poor households in Cape Town are involved in urban agriculture as an element of their livelihood strategies; "only 5% households obtain food by growing it themselves" (Battersby 2011, p. 30). However, at community level the perspective is different, urban agriculture is considered an economic opportunity that is increasing significantly in last years due to successful models proposed by NGOs that have been implemented in public and private open land.

On the other hand, there is a clear competition among land uses that is affecting urban agriculture's implementation in Cape Town¹⁵. First, land allocation for urban agriculture projects is a big issue, second, priority to other land uses such as housing due to backlog of over 400.000 households is a reality¹⁶ and water supply for irrigation is not affordable¹⁷. Along the research process, the confirmation of urban functions' competition was reinforced by the majority of the interviewees within the official departments, private sector, NGOs and academy. There is very clear recognition of plenty open public spaces that are suitable for implementing urban agriculture but due to this particular competition get access to land for urban agriculture's implementation requires titanic efforts.

Housing demand has by far highest priority from the governmental perspective. Housing is a major social and economic issue, therefore political imperative¹⁸. For this reason, the major competition is registered between undeveloped, under-developed land and the need for land for public affordable housing. The competition between undeveloped, under-developed land and other urban development is largely managed by policy plans and zoning schemes which is

reasonably well enforced. Besides, the Senior professional Officer of Land Use Management Department, City of Cape Town, Schalk De Jager supports the argument that housing is a major problem in Cape Town but definitely there is a competition among land uses¹⁹. There is also tremendous pressure to develop vacant land for housing, and therefore, this trumps agricultural land use from a political perspective²⁰. There is a clear declare competition for land in Cape Town.

In the argumentation, it is difficult to say which land use has more value than the other ones because underprivileged communities who are living in these marginal areas require certain planning strategies that allow them to dignify their way of living in many senses. Housing development, recreation areas, industrial markets, green areas, commercial areas, transport systems and urban agriculture among others are shaping the new vision plan for these communities (CoCT 2012). Urban agriculture is one of the strategic components that bring to the discourse important sustainability contributions as is recognized in the spatial Development Framework, Zoning Schemes and Urban Agriculture Policy among other official statements.

Throughout the history of Cape Town there are not remarkable projects that support the development of spaces in between before 2007 (VPUU 2012). Housing development, public facilities or schools have been developed in a sequence without attention to public open areas suitable for embracing green concepts. Plan to long term in Cape Town is a complex issue due to the fact that there is no guaranty in the long term about specific use of land when the decision to make land available depends on owner (city or government)²¹. While the new

15 In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

16 Information sent by Principal Spatial Planner Kier Hennessy, via electronic correspondence, on November 4th 2012 (Annex 11)

17 See Annex 01

18 See Annex 11

19 In interview with Senior Officer Schalk De Jager, administered by Gloria Gaviria, on October 17th 2012 (Annex 05)

20 In interview with Urban Manager Claus Rabe, administered by Gloria Gaviria, on October 11th 2012 (Annex 02)

21 Information provided by Professor Jane Battersby Lennard, Researcher and professor of University of Cape Town in the programme Urban Food Security and Contemporary Urban Challenges, in interview administered by Gloria Gaviria, on October 23rd 2012 (Annex 16)

housing policy will plan integrated settlements and spaces in between according to the land use because there are not clear models regarding how to handle with these land areas, the urban agriculture policy promotes the inclusion of urban agriculture as a complement to be developed in these areas to tackle economic issues (CoCT 2012). The latter could trigger the development of productive public open spaces and build sustainable assets along the city.

Urban agriculture in public and private open space is on the strategic agenda of policy makers, urban planners, private sector initiatives and NGOs' visions. Currently, City of Cape Town is changing the Spatial Development Framework and zoning schemes in which some of the visions are focused on creating green productive areas in public open space. Urban agriculture will get major recognition in the public agenda by 2013 when the new policy will be launched officially and the Spatial District Department in conjunction with the Urban Agriculture Unit and the new land management schemes will be proclaimed urban agriculture as an official land use. The debate on optimal use of open public space for urban agriculture purposes in some areas in Cape Town such Philippi Horticultural area, Khayelitsha, Nyanga, lavender Hill, Guguletu, fezeqa among others conclude that urban agriculture is potentially viable with permanent support of NGOs, institutional departments, private sector and academy knowledge.

According to different perspectives this land use recognition will have major impacts on urban agriculture's forceful implementation. The main visions are focused on the clear understanding of urban agriculture with broader definition; it will include vegetables and animals livestock²²; Urban Planning Department will identify land for urban agriculture purposes base on specific criteria; Property Management department will consider land allocation based on clear criteria formulated by the Urban Agriculture Unit; urban agriculture would be taken into consideration as a complement for new housing development projects, public facilities and educative

²² In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

projects²³, NGOs will receive more support from Urban Agriculture Unit and the Urban Agriculture Unit will receive support from the local government to increase the human and financial resources in order to be more proactive and confront the new challenges that represents the new land use status in the spatial planning agenda. However, Professor Jane Battersby Lennard of The University of Cape Town in the Urban Food Security and Contemporary Urban Challenges programme argues that changing land use regulations it is not enough; no so much will happen without political will²⁴. City of Cape Town will materialise better results, better participation in planning and better promotional of the benefits of urban agriculture to the general population, if political will plays a crucial role on the scene.

Currently, the policy and planning framework emphasizes that urban agriculture is an activity, -non a land use- that can be developed in certain areas with certain features based on some environmental criteria. In fact, in the integrated zoning schemes there is a zonification regarding agriculture areas of significant value but there is no any land demarcation per district for urban agriculture purposes; the current status of urban agriculture reaches the category of consent use to be implemented in single residential zones, community zones, utility zones and public open space (CoCT, 2012). Furthermore, there is a list which contains outdated projects per district but without any digital mapping (UAU, 2011). This situation does not allow us to understand physical magnitude of urban agriculture, the concentration areas of implementation and the current development of initiatives undertaken by NGOs, private sector o community's engagement. As a result of all the facts mentioned above, major challenges and the lack of political will in sustainability matters are compromising the comprehensive implementation of urban agriculture. The lack of support among some departments is also a major issue to tackle in order to foster urban

²³ Information provided by Brian Verwey, Deputy Chief Architect, Human Settlements Department, Western Cape, in interview administered by Gloria Gaviria, on October 28th 2012 (Annex 12)

²⁴ See Annex 16

agriculture initiatives and give value to NGOs efforts.

Bloor 2011 asserts that it is important to share knowledge and experience among local and international experts, establishment consultative forums, building strategic partnerships, creating linkage with other strategies around urban agriculture. Zeeuw 2009 further argues that based on international experiences, the alternatives for articulate formulation policy with implementation in urban agriculture aspects can be the creation of an enabling institutional policy framework, diagnosis and prioritization, elaboration of action plans, institutionalization or upscaling, implementation and monitoring. In this line City of Cape Town has hosted three urban agriculture’s summits.

The first summit in 2002 when main stakeholders involved in this phenomenon claimed for the formulation of urban agriculture policy. The second summit in 2003 when was introduced the first draft regarding urban agriculture policy and introduce topics such as livestock keeping in the City and urban agricultural assistance programme. City’s urban agriculture Policy was adopted by Council in 2007; after these two important events that served as platforms for its development. Finally, in 2011 the third summit reviewed the policy in terms of appropriateness and effectiveness; and brought up in the discussion new topics according to urban challenges that have influences over urban agriculture (CoCT 2011). For first time the city touched topics related to the integration of food systems, urban agriculture and urban planning as an alternative to tackle poverty, unemployment and environmental degradation (CoCT 2011).

The vision formulated in the urban agriculture policy is supported by four strategic goals described as follows “*To enable the poorest of the poor to utilize urban agriculture as an element of their survival strategy, to enable people to create commercially sustainable economic opportunities through urban agriculture, to enable previously disadvantaged people to participate in the land redistribution for agricultural development programme, to facilitate human resources development referred*

to technical, business and social skills training” (CoCT 2007, pag.4).

One of the big issues with urban agriculture in Cape Town is that often it is closely linked to nutritional security needs or economic alternatives. For these reasons, this one is not contemplate, linked or integrated into planning and operational processes within the settlement governance structures (Haysom 2011). Haysom further argues that “urban Agriculture is a component within the urban planning processes that, if correctly implemented, can assist in addressing a variety of the urban planning and developmental challenges” (Haysom 2011, p.17).

In summary, there is a growing understanding amongst planners and decision-makers that urban agriculture can make a meaningful contribution to issues like food security, poverty alleviation, economic empowerment, a sustainable environment and a more resilient city. The urban agriculture policy gives to urban agriculture a formal status in the City as a legitimate consent use and an implementation plan/support programme that is currently been implemented mostly by NGOs. The future visions in the strategic planning agenda are focused on productive green spaces, the formalization of urban agriculture as a land use and the increase of the scope and scale of the policy that embraces sustainability concepts. Urban agriculture can be considered in Cape Town as a new vision to reconnect communities, reduce such unbalance situation and build resilient city through the creation of food systems that include urban agriculture as a core activity.

Key statistics related to urban agriculture in Cape Town	
•	Fresh produce consumption: 305493.5 tonnes consumed annually in Cape Town
•	Average distance food travels from farm to plate: 715 km
•	Total Transport Emissions [Tonnes Co2]: 10.663 tonnes CO2 saved annually
•	Waste emissions offsets if 10% organic waste diverted from landfills for composting: 94 500 tonnes CO2 saved annually
•	Embedded carbon of 302493.5 tonnes of fresh produce [packaging, storage,

machinery, chemical and fertilisers]: 564966

- Embedded carbon 10% offset if organically grown in urban allotments: 56.497 tonnes CO2 saved annually
- Emissions total savings [transport + waste + embedded]: 161660 tonnes CO2 annually [0.81% of CT total 20 Million tonnes CO2 annually]
- Breakdown: Waste 58%, embedded savings 38%, carbon miles 7%
- Up to half of food produced is lost or wasted before and after it reaches the consumer
- Up to 60% of waste produced in South Africa is organic waste
- 120.000 tons of organic waste produced in 2004; just 2% recycled biologically as alternative to landfill

Table No. 08 Key Statistics related to Urban Agriculture in Cape Town. Source: Adapted from Roux 2011, p.19.

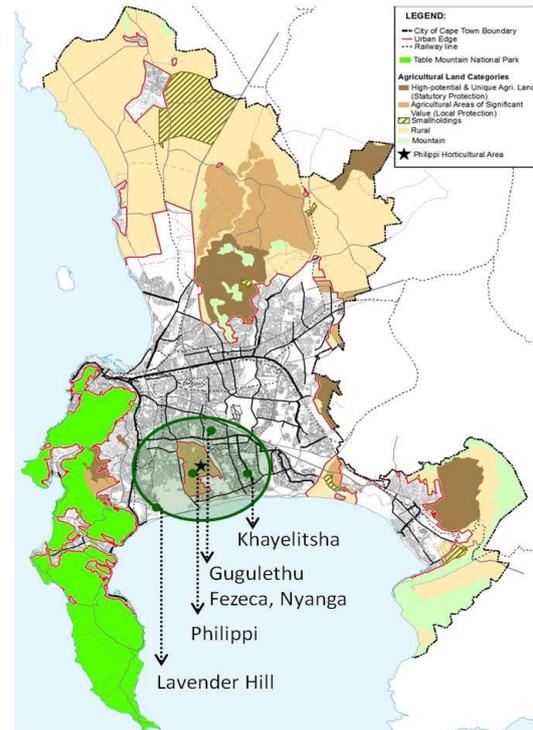


Figure No.25 Urban Agriculture Protected Areas, Spatial Development Framework, Source: City of Cape Town 2012.

5.1 Main Challenges of Urban Agriculture

There are many challenges in regards to urban agriculture from city, NGOs, private sector, community and academy perspective. Through research process, information gathered during the interviews, observations and visits to the projects was possible to get the perspective about the main challenges that different stakeholders involved are facing as well as clarifying into detail core issues that are affecting the comprehensive implementation of urban agriculture in Cape Town.

First of all, from city perspective the main challenges identified are: lack of culture for growing one's own food, lack of understanding the main concept of urban agriculture. Some people only understand vegetable gardens or livestock keeping but the concept implies both of them. There is not a common understanding about what urban agriculture means²⁵. Vegetable gardens are included in the legal framework but livestock keeping is not contemplated yet.

Some people keep animals over their own places and this situation does not combine with any law, so it is illegal.

This is a challenge that on the one hand, Urban Agriculture Unit needs to find the way to manage; the livestock keepers and to get them into a compliance of the legal framework. On the other hand, with the vegetables gardens it is important to diversify the scale. There are Horticulture / Vegetable Gardens, Home gardens, Community Gardens, Institutional Gardens in schools and clinics, churches, day care center, and Trading gardens but there is not enough, much more is needed in terms of growing their own food.

Access to land is a major issue as was mentioned before. The process is confusing in the sense of reserving land for urban agriculture; many departments are controlling the whole process; to get the council approval demands very long time. In addition, probably, when land assignation is issued, it is not located near the place that people interested in farming are living²⁶. Furthermore, the biggest problem is the operational process at the

²⁵ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

²⁶ In interview with Professor Jane Battersby Lennard, administered by Gloria Gaviria, on October 23rd 2012 (Annex 16)

institution level. The city and the Urban Agriculture Unit do not have the sufficiently resources to manage urban agriculture.

The Urban Agriculture Unit (UAU) has a support program that is focused on backyard gardens, community gardens and micro farmers. If a community group wants to use a piece of land, public land implies a long process to obtain the consent of land owner. If the community does not have this consent, UAU will not be able to support the project or the community interested in launching this project (CoCT 2012). There are also some issues surrounding the infrastructure system that protects or gives supply to the productive land like fencing or irrigation. In some cases the light and products are stolen²⁷. Lack of security is a risk because without this, projects cannot ensure their success and avoid the risk to convert these pieces of land into dumping areas.

Access to water is one of the key challenges and water affordability is one of the major complains at community level. When urban farmers do not have access to water, they need to look at other kind of alternatives such as water harvesting (Bodenstein 2012). Waste and water recyclability involve health risk issues that are not contemplated in the urban agriculture policy; however, Battersby 2012 indicates that some projects have been successful because farmers have been able to use water that have been used for other purposes. In addition, the poor soils allied to the growing season (summer) are not being aligned to the rain season (winter) it requires permanent water supply to crop the products (Henessy 2012). Some home gardens have stopped gardening activities because they are not able to get water on the ground, they have to get water from the tap. This is one of the biggest problems, they have to pay for the water and they are scare to pay for this²⁸. However, many people are interested in doing farming activities at household level but it is important to clarify the big question that arises

²⁷ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

²⁸ Information provided by Rob Small, Head of Abalmi Bezekhaya and Louise Vaughn, Manager of the training team of Soil for life, in interview administered by Gloria Gaviria, on October 16th and 12th 2012 respectively (Annex 13 y 14)

on the scene is focused on who will pay for the water provision when this one is needed to do farming and this one is not affordable for farmers and get the water subsidies is a long bureaucratic process? Local government needs to encompass strategies to cope this issue.

Lack of commitment by some urban farmers is a serious challenge²⁹. The reasons why there is not constant commitment based on a variety of social conflicts. People disappear from gardens activities because they get an informal job. Lack of commitment sometimes refers that people are disappearing from the project but some of them disappearing for good reasons. They are improving their own life. However, there are other challenges that are affecting urban agriculture sustainability. Firstly, there is a historical legacy and how the local government engages communities. The participatory planning interventions are extremely top down; the community engagement is too low³⁰. The second one, is that the population is very heterogeneous (black, white, colour) the combination of the lack of trust among people living in close proximity, in very dense areas and services are extremely poor. There is a huge lack of trust between people and there is a lack of the proper engagement from the government.

Other challenges; to less extent are lack of skills and the lack of commitment on skills, some farmers does not know how to manage the land³¹. Farming in Cape Town is not necessary easy when they use fertilizer and organic urban agriculture; it requires a certain amount of skills. But in general, it is easy to train people because training is available at the NGOs level. It is a situation easy to overcome. Urban agriculture projects are often initiated by NGOs. It means that they are in charge of providing skills development, monitoring and evaluation.

From NGOs perspective, the main challenge lies on finding the right people that want to put an

²⁹ In interview with Engineer Stanley Visser, Professor Jane Battersby Lennard, Urban Manager Claus Rabe administered by Gloria Gaviria, on October 11th, 23rd and 11th 2012 respectively (Annex 01, 16, 02)

³⁰ See Annex 02

³¹ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

effort on urban farming³². However, without a strong leader will be difficult the implementation going of urban agriculture; for instance, community gardens have their challenges in terms of management and organization, they require on a good leader, a good structure likes any other organization. Besides, there is a culture of expectation in which people are get use to receiving stuff without any effort. In fact, the issue that people are receiving funding from NGOs or Government Departments to undertake urban agriculture projects, but the situation gets serious when the sponsors decide to stop the support and cut off the financial resources. This situation forces to people engaged on urban agriculture to make the decision not to participate or devote their efforts on other commitments.

NGOs and community have identified that extreme climate change conditions and very poor soil (mostly sand) are challenges that they are able to overcome with strategies and suitable training that allow then to crop vegetables in these extreme conditions³³.

Urban agriculture is considered a survival strategy or economic opportunity (CoCT 2012). Basically, some people are involving in gardening for their own choice, others are doing that for economic reasons; they are forced to do so. Battersby 2012 argues on that area that in some cases urban agriculture has a negative perception because people who have migrated from rural to urban areas do not want to be involved in farming activities because they argue that this is a rural activity and they used to farm products and is time to make a change in their lives.

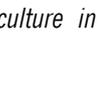
Another biggest challenge identified is the lack of communication and collaboration among stakeholders involved. There is not much more interaction among departments with the Urban Agriculture Unit, NGOs, urban farmers and community members. In fact, they are not planning on urban agriculture together. There is not a multi-stakeholders participatory approach to build the new policy. UAU is coming up with

the new version without consulting regularly with the other stakeholders involved. Comments and perspectives from other departments can contribute meaningfully to build the new visions on urban agriculture in Cape Town. For this purpose, it is important to create the space and establishes the leader with the contribution of all stakeholders. It is absolutely necessary to create this discussion around strategic planning in order not to overlap projects, reunite common efforts and come up with workable solutions at city management level.

Although Urban Agriculture Unit is doing a titanic effort in urban agriculture as a livelihood strategy in Cape Town, they do not have the enough human and financial resources to come up with all the solutions in regards to the challenge mentioned above. They have the valuable desire to be more proactive and to have the ability to hands on in a longer commitment. More than proactively is needed in integrating of urban agriculture into the strategic planning and handle new challenges acquired in the land use management. Governmental support, budget, political will, proper recognition, integration, interaction and communication with other departments, more specialists from different areas involve in urban agriculture management among others are needed to tackle the main challenges and to foster urban agriculture in Cape Town.

³² Information provided by Louise Vaughn, Manager of the training team of Soil for life, in interview administered by Gloria Gavia, on October 12th 2012 (Annex 13)

³³ See Annexes 13 and 14

Main Challenges Urban Agriculture in Cape Town	
<ul style="list-style-type: none"> • Lack of culture for growing one's own food, lack of understanding the main concept of urban agriculture High food vulnerability at household level in urban and rural areas. 	
<ul style="list-style-type: none"> • Lack of access to land for food production (get the council approval demands very long time). 	
<ul style="list-style-type: none"> • The Urban Agriculture Unit does not have the sufficiently human and financial resources to manage urban agriculture. 	
<ul style="list-style-type: none"> • Lack of security is a risk; without this, projects cannot ensure their success and avoid the risk to convert these pieces of land into dumping areas (theft and vandalism of crop production). 	
<ul style="list-style-type: none"> • non-affordable water for irrigation, Uncontrolled and illegal keeping of livestock in urban areas. 	
<ul style="list-style-type: none"> • There is not updated mapping which informs the scale of this activity in the city. 	
<ul style="list-style-type: none"> • There is not identification, zoning, allocation and designation of land for UA. 	
<ul style="list-style-type: none"> • UA in competitive disadvantage to the other land uses 	
<ul style="list-style-type: none"> • Lack of commitment by urban farmers to preserve their urban farming projects. 	
<ul style="list-style-type: none"> • Lack of trust between people living in proximity and lack of the proper engagement from the government. 	
<ul style="list-style-type: none"> • Lack of skills and lack of commitment on skills. 	
<ul style="list-style-type: none"> • Lack of communication and collaboration among stakeholders involved. 	
<ul style="list-style-type: none"> • There is not a multi-stakeholders participatory approach to build the new policy. 	

5.2 Urban Agriculture Unit

The urban agriculture unit is located in the Development Facilitation Branch of the Directorate of Economic Development. There are a number of functions listed in the urban agriculture policy that clarify the main functions of this unit. 1. Promote urban agriculture as an important element of poverty alleviation and economic development. 2. Carry out and support research for policy development and ensure its implementation. 3. Establish partnerships, liaise and interact with all stakeholders.

Table No.09 Main challenges urban agriculture in Cape Town. Source: Designed by the author.

4. Deliver support services, directly or indirectly, to urban farmers. Act as catalyst by providing basic appropriate infrastructure (such as land, water, roads, markets, etc). 5. Facilitate capacity building of all stakeholders. Co-ordinate and rationalize Council's involvement in projects (to forge common goals, integrated planning and teamwork) and 6. Manage and maintain areas demarcated for urban agricultural uses, including the issue of permits (CoCT,2007,

p.15). These ones are interesting strategies that are under development so far without major success due to some key issues; lack of support, human and financial resources among others.

The UAU has a network of cooperation with various departments but sometimes is difficult to implement projects together because in terms of priority small vegetables gardens are not on the top of priorities. However, nowadays the Urban Agriculture Unit (UAU) is linked with the Spatial Planning Department. They are trying to start a process together in one of the eight districts in Cape Town for identifying land suitable for urban agriculture³⁴. The UAU has set up the criteria required for establishing pieces of land for urban productive public spaces. They are not zoning land for urban agriculture purposes; they are identifying public open spaces suitable to grow vegetables.

The core idea with this strategy that stills under development is to be able to assist to community members, NGOs, private sector to implement a community garden and to introduce them some pockets of land available for launching urban agriculture's projects. Besides, they want to assist the spatial planning department in how to plan for agriculture strategy and also how to plan for food system; in particular they want to work with land department and water department to actively engage them on urban agriculture.

Nowadays the UAU is considered reactive, mainly they are revising the urban agriculture policy; developing a strategic development agenda on urban agriculture because they want to change into the proactive field. The future visions of this Unit are focused on developing the support program which includes access to land, produces inputs, infrastructure, training, as well as doing an urban agriculture network online; where basically, they will be posted all the information and digital mapping including the different type of gardens along the city. This blog is currently being developed by the Assistant Project Officer of the UAU who in order to fulfill some current gaps in terms of

³⁴ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

information. This editable blog will be an interesting tool that will be allowed to know more and understand urban agriculture dimension in Cape Town³⁵. Another important future vision is that the UAU wants to encourage more and more people to grow their own food, with organic production and improve nutrition patterns.

There are some key issues in this UAU in terms of human and financial resources. There are basically three people in charge of this Unit; they have a capacity problem that does not allow them to evaluate and monitor projects. On one hand, they are working on a set of strategies in order to assist to get land, water source, affordability of water, irrigation systems among others. On the other hand, they do not have any project as a city level. Private sector, NGOs or CBOs are in charge of setting up projects on urban agriculture in Cape Town.

The UAU does not get enough funding from the local government for urban agriculture purposes³⁶. The UAU divides the budget in some components such as assessment; acquire space, seeds, compost, and training. The UAU does not provide financial support to people to set up urban agriculture projects; they control their budget on its own site for the urban agriculture programme. More investment facilitation, budgets and support are needed in order to be more proactive and tackle the main challenges. For this purpose, UAU needs to show successful advantages in terms of urban agriculture in the last years. There are some successful gardens running by NGOs that could work as models to be replicated by UAU with the proper support of NGOs and other departments to hold efforts for supporting urban agriculture.

It is expected that this unit performed the role of food policy councils. It should act from the

³⁵ In interview with Assistant Officer Spencer Fowlie, administered by Gloria Gaviria, on October 15th 2012 (Annex 04)

³⁶ In interview with Engineer Stanley Visser, Assistant Officer Spencer Fowlie, Professor Jane Battersby Lennard administered by Gloria Gaviria, on October 11th, 13rd, 23rd 2012 (Annexes 01, 04, 16)

sustainable perspective, creating space for all the stakeholders involved in urban farming process. The food policy councils are structures that help governments to make decisions on food issues. Normally, these councils are composed by public and private sector, NGOs, hunger activists, urban farmers and community members that work in synergies to come up with sustainable urban agriculture ideas within the policy framework (Pothukuchi et al 2002, cited in Frayne et al 2009). Through this unit the local government intends to tackle the most serious issues related to community development and orient to future sustainability of urban agriculture matters in Cape Town.

5.3 Urban Agriculture Assistance Programme

The urban agriculture assistance programme is led by the Urban Agriculture Unit under the Economic and Human Development Department's umbrella. The main purpose of this programme is to enable the start-up and sustainability of urban agricultural ventures (CoCT 2012). It is important to clarify that this programme was launched in 2007 but the city has not seen major results in the last five years due to the lack of financial and human resources. For this reason, "NGOs in Cape Town are providing the technical assistance due to the lack of manpower at the Economic and Human Development Directorate" (RUAF 2009, p.1). The new vision plan for this programme is to establish cooperation with other role-players, including the following elements: assistance to access land, basic infrastructure, production inputs, tools and equipment, and capacity and skills development (CoCT 2012). Cooperative governance, strategic partnerships and collective action are the key areas that this programme intends to integrate in order not to overlap resources and give plenty coverage to different projects in an equitable manner.

Currently, urban farmers are supported only with small tools, basic production inputs and some extension services, but not with acquiring access to land, water subsidies or infrastructure as the urban agriculture policy and the Municipal Finance Management Act states (RUAF 2009, Visser 2012). In fact, the municipal budget is not invested to research on strategies to fulfill the policy statements.

There is a huge gap between the policy formulation and the implementation process. There is a gap between what the policy says and what the city structure allows and what works for people on the ground. There is a disconnect city structures that imagine people to be kind of stable, consistent and operating with the formal rules³⁷.

However, the last policy version does not contemplate an implementation component in terms of setting up gardens. Currently, the UAU is revising the policy and trying to put together on it; the strategy and implementation. The policy also clarifies the scope and scale of the programme. It is focused on the poorest inhabitants whom want to start an urban farming project. The programme provides a start-up kit for survivalist gardeners and supports the urban farmers with skills training and extension (RUAF, 2009). The implementation gap is clearly identified for some farmers who are affected by the lack of support from local government in the main elements for urban agriculture's implementation and follow up such as land, affordable water, subsidies for seeds and compost, start-up kit, skills, training, monitoring, evaluation, etc.

The basket of support for urban agricultural practitioners is one part of the new policy visions (CoCT 2012). The main objectives are to assist, guide, develop, mentor and provide skills development within the urban agricultural sub-sector (CoCT 2012). For rendering assistance the UAU has established a set of criteria to be implemented according to the type and scale of urban agricultural activities, objectives, feasibility, location, environmental impact, number of beneficiaries, compliance with integrated development planning and management, previous assistance received from City or from other role-players (CoCT 2012).

It is important to highlight that the UAU do not have the intention to render directly the types of assistance; they will be supported by all role-players' contributions. This assistance will be done within the legal framework of the

³⁷ In interview with Professor Jane Battersby Lennard, administered by Gloria Gaviria, on October 23rd 2012 (Annex 16)

Municipal finance Management Act (Act 56, 2003) which for example prohibits fix capital improvements on land other than City-owned. For this purpose, a comprehensive analysis will be done for each applicant and strategic/critical elements will be identified for assistance by the appropriate role-player (CoCT 2012). It means that NGOs and private sector are key elements in this strategy. It is needed that the communication and the cooperation channels improve among the UAU and all stakeholders.

The following table shows the types of assistance that the UAU will be able to provide in future time when the alliances among stakeholders will be solid and realistic. Basically, the assistance for home gardens is minimal in terms of key issues such as access to land, water supply and tools. They only will receive training assistance for capacity and skills development; this category must rely on NGOs or their own capacity to come up with successful home gardens because training and education are not enough to grow vegetables. While community gardens and micro farmers will receive complete support, small emerging farmers have to look for alliances with other farmers in order to survive and being successful in their intentions to grow their own food. The beneficial impact of this assistance programme will be a model to look at in future, if all the fundamentals are in place from an organizational perspective and the alliances with the stakeholders are constructive and formal established.

Type Of Assistance		Home Gardens	Community Gardens	Micro Farmers	Small Emerging Farmers
A Access to land					
	• Acquisition of land		X	X	X
	• Earthworks		X	X	
B Infrastructure					
	• Water supply including boreholes/well points		X	X	
	• Electricity supply		X		
	• Roads		X		
	• Fencing		X		
	• Irrigation systems		X	X	
	• Containers		X	X	X
	• Animal sheds		X	X	
	• Toilets		X	X	
C Tools / equipment / implements					
	• Hand tools (rakes, spades, pliers, etc.)		X	X	
	• Water pumps		X	X	
	• Power equipment (e.g. power hoes/rotovators)		X	X	X
	• Wheelbarrows		X	X	
	• Watering cans		X	X	
D Production inputs					
	• Seeds / seedlings	X	X	X	
	• Fertilizer / compost	X	X	X	
	• Pesticides		X		
	• Fuel		X		
	• Water		X		
	• Electricity		X		
	• Animal fodder (organic)		X	X	X

Type Of Assistance	Home Gardeners	Commu- nity Gardeners	Micro Farming Farmers	Small Emerg- ing Farmers
waste)				
• Veterinary products (animal health care)		X	X	X
E Capacity building and skills development				
• Technical skills training (e.g. how to plant)	X	X	X	X
• Business administration training (e.g. record keeping)	X	X	X	X
• Entrepreneurial training (e.g. business plan)	X	X	X	X
• Mentoring and continuous operational advice	X	X	X	X
• Information documents / data basis	X	X	X	X
• Marketing advice	X	X	X	X
• Environmental health advice	X	X	X	X
• Irrigation systems advice	X	X	X	X

Table No.10 Type for Assistance per Category, Urban Agriculture Policy, Source: City of Cape Town, 2007,2012.

Besides, some preconditions are required in order to provide this assistance: 1. project brief which indicates the background and purpose of the project, role players / partners, beneficiaries, etc. 2. written approval from the landowner that confirms the right to utilize the land – a formal lease, permit or letter of consent. 3. Confirmation of access to water

which should indicate the source of water available to the project (municipal, groundwater, etc.) and who will pay for the water consumption. 4. If a group of people apply they should be formally organized with a management structure – identify clearly a project leader that can promote the project and serve as a contact person (CoCT 2012, p.13).

The uncontrolled keeping of livestock in urban areas is a big issue in Cape Town (RUAF 2009). While the comprehensive concept of urban agriculture include this activity and the urban agriculture policy promotes it in the new version, the main planning tool; zoning schemes does not give this recognition. It is considered an illegal activity that needs to be controlled³⁸. This activity represents an important economic opportunity to urban farmers. In this line, the assistance programme develops three strategies to relocate animals from the residential areas to places and spaces where they can be kept under controlled and better conditions (RUAF 2010). First of all, *community kraals* (fenced areas) close to residential areas where small numbers of animals can be kept under zero grazing conditions. The activities are located on state-owned land; the city will provide all fixed infrastructure as well as the maintenance on commonage land, it will imply for urban farmers to pay an incremental rent which will reach a commercial rate within three years (RUAF 2010). It will give them the opportunity to become successful small commercial farmers.

Secondly, *commonage land* (a traditional form of land rights, where land belongs to the city and is meant for agricultural purposes) where larger numbers of animals can be kept under commercial farming conditions (RUAF 2010). This strategy has pros and cons as was explained before; it is not easy to get access to land for urban agriculture purposes.

Thirdly, *private farms* or *small holdings* through the grant funding system of the National Land Reform Programme. The Department of urban agriculture is proving extension services and financial support to farmers in alliance with some NGOs that give support in skills training.

³⁸ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

The Department of Land Affairs acquired commercial farm, which is used as commonage mainly by the urban livestock keepers (RUAF 2010). It does not happen so much in reality. It is expected that the livestock category will be developed into more detail, according with the governmental objectives and land priorities. The livestock present and immediate future remains on the rural areas.

5.4 From Seed to Table Programme: Harvest of Hope

The NGO Abalimi Bezekhaya is recognized as a partner by the City Urban Agriculture unit and is a founding partner of the Sustainable Livelihoods Network (SLN) which is convened by the Environmental Resources Management (ERM) Department partner. Abalimi implemented the programme “From Seed to Table” (FSTT) that is known as ‘Harvest of Hope’; it was launched in 2008. The main difference in this programme with the others already launched around the world is that this project was designed with no governmental involvement in the planning process and market identification (RUAF 2010). For this reason, the NGO Abalimi Bezekhaya is playing the most relevant role in urban agriculture in Cape Town. They are providing planning solutions, strategies to get land, water harvesting ideas, training and skills support, start-up kit, evaluation and monitoring. They have created a family of thousand farmers in the most underprivileged areas in Cape Town³⁹.

Harvest of Hope is a button up initiative. It is a complex logistical marketing business that encourages accessibility to small-scale producers to a new market as well as promoting the creation of food system in some townships in Cape Flats district. In addition, community gardens outside of the townships are benefiting through Harvest of Hope packshed and marketing system with agricultural and horticultural commodities.

Harvest of Hope (HoH) is an excellent model to be replicated around the world. The main axes is a real hope market for urban farmers, it is

one of the serious ways that urban farmers can marketer their products.

HoH does a formal food system; it is one of the formal axes to the market. This model represents the sustainable vision of urban agriculture in Cape Town; promotion of economic and human development, social inclusion, green productive areas, good quality of products, reduction in food miles, food security, health and education are the main benefits of this interesting approach. Harvest of Hope is the meaning of food systems with strategic city’s management vision in Cape Town.

The main objectives of this initiative have overcome the initial expectations that were focused on creating sustainable markets around Cape Town, working as an instrument for poverty reduction in marginal communities, giving customers fresh organic food and reducing food miles (HoH 2010). Nowadays, HoH means for the urban farmers and Cape Town a hope of change towards a sustainable perspective. Small, 2012 underpins that HoH is part of the job creation scheme that guarantees market with top quality and non-poisonous products. He further affirms that when you guarantee farmers in the market and in a good price for what they grow and stimulates farming and job creation, everything works well for everybody.

The scheme works based on the participation of all producers in agribusiness training. “All of the farmers have contracts to grow specified crops in a designated size plot for pre-planned yields at pre-determined prices, to be harvested on targeted dates” (HoH 2010 p,1). A label access represents the contract for farmers.

The producers are in charge of doing the quality control, harvesting, cleaning and bunching of vegetables themselves. After that, when all the products are ready, Abalimi buys the products that ensure the right quality. The price that Abalimi pays to the farmers is the same that people have to pay more or less on the street. They get a good price for the vegetables and they have to guarantee the best quality. Those products that do not have the right quality;

³⁹ In interview with Engineer Rob Small, Head of Abalimi Bezekhaya, administered by Gloria Gavia, on October 16th 2012 (Annex 14)

farmers have to consume them, sell them or give away by themselves. Between 20 or 25% of the production is substandard; this factor is depending on farmer's skills capacity to grow vegetables. Generally, this portion of vegetables is be eaten by people on the ground; what is happening is that poor people with low education are eating good food quality and improving the nutrition standards, it is something very positive for all the community members without any exception.

Harvest of Hope develops the process to organize the vegetables. Every week the organization picks up the vegetables from the gardens, delivering them to the packing shed. Basically the vegetables process is weighed (to record the amount of vegetables delivered by each garden), washed, cut and package do bundled, depending on the type of vegetable, packed, the same number per each box (See figure No.26). Besides, the producers have the opportunity to participate in the packed process in order to learn about the entire process of processing and marketing (HoH 2010). "After the packing, the Harvest of Hope staff delivers the boxes to the collection points, most of which are primary schools (about 15-20 in total) in the suburbs of Cape Town, but also some institutions and a retail outlet. Schools seem to be the best distribution places, as parents can combine collecting their children with picking up a food box" (HoH 2010 p.1). Abalimi represents top quality food⁴⁰.

The box scheme approach deals with various challenges; "distribution chain (access to markets outside their local community), cash flow and liquidity issues (getting cash monthly instead of having to wait an entire growing season), price fluctuations (a regular price is guaranteed), as well as seasonal fluctuations (contents of the box may differ)" (HoH 2010, p.1). The price of the vegetables is established on a comparative analysis of different supermarkets and whole sellers. Although producers get less than the normal price for

their crops, Harvest of Hope gives them a regular and secure price⁴¹.

According to the figures gathered Harvest of Food has successfully increased their capacity and production throughout the last years, from 8 to aprox 30 producers; community gardens in 2012. Abalimi supplies and supports around 3000 micro-farmers, mainly in most of the black township communities' including Khayelitsha, Nyanga, Gugulethu, Delft and Phillipi every year, who in turn feed at least around 15000 family members plus others. HoH provides modest regular cash incomes to around 160 micro-farmers at present (Small 2012). The number of vegetable box has risen considerably, giving provision to many underprivileged communities and schools in Cape Town (from 79 to about 180 in 2011) (HoH 2012). It is important to clarify that the amount of land needed to produce this vegetable boxes are for each 100 boxes produced is required 8,415m² of land. The total amount of land currently used by Harvest of Hope is around 3 hectares – around 30 community gardens using on average 1000 square meters of their arable land each. The income producer; per garden, per month is 500 Rands per 500 square meters minimum and 3000 Rands per 500 square meters per plot maximum (Small 2012).

The capacity and production of Harvest of Hope in supplies weekly boxes is to 350 – 380 members a week; regarding the type of boxes, they manage the big one and small box, the difference is the price 105 Rands and 72 Rands respectively (HoH 2012). "The products are potatoes, onions, carrots, a salad pack and bean sprouts. Other vegetables, depending on the season, include tomatoes, green peppers, butternut, baby marrows, sweet potatoes, beans, peas, pumpkins, spinach, Swiss chard and beet root. Boxes also usually contain a special and expensive vegetable, such as mushrooms, cherry tomatoes, red or yellow peppers, which are supplied by other farmers" (HoH 2012). One of the bonuses that contain the box is a different recipe every week whit nutrition balance vegetables, promoting healthy habits and

⁴⁰ In interview with Engineer Rob Small, Head of Abalimi Bezekhaya , administered by Gloria Gaviria, on October 16th 2012 (Annex 14)

⁴¹ In interview with Engineer Rob Small, Head of Abalimi Bezekhaya , administered by Gloria Gaviria, on October 16th 2012 (Annex 14)

balanced nutrition with good quality products that were farmed by grassroots communities in the poorest areas of Cape Town. Small affirms emphatically, the food produced by farmers that are integrating the HoH scheme; it is the food that deserves to feed to the nation.

At city level there are many lessons that are possible to learn from this model. Food system is a strategy to be integrated into the planning agenda. This approach is the proof that productive public space feed communities and people on the ground are working in the food system to build up a sustainable and resilient city. From the research perspective, people in Cape Town are been reunited through a food system that has been developed by people on the ground level, has been launched by a NGO and that is feeding underprivileged and wealthy communities in Cape Town.

START-UP: NGO ABALIMI

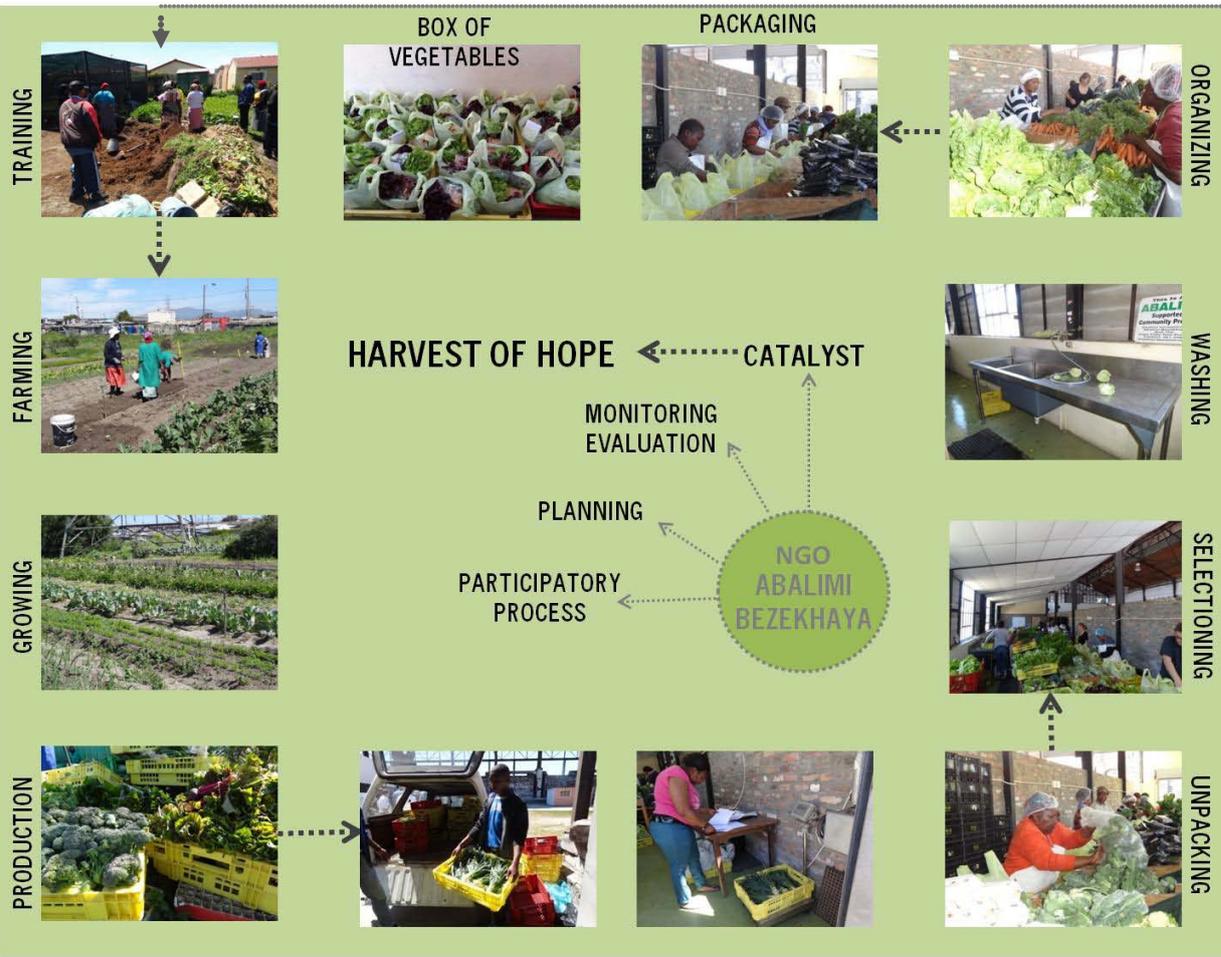
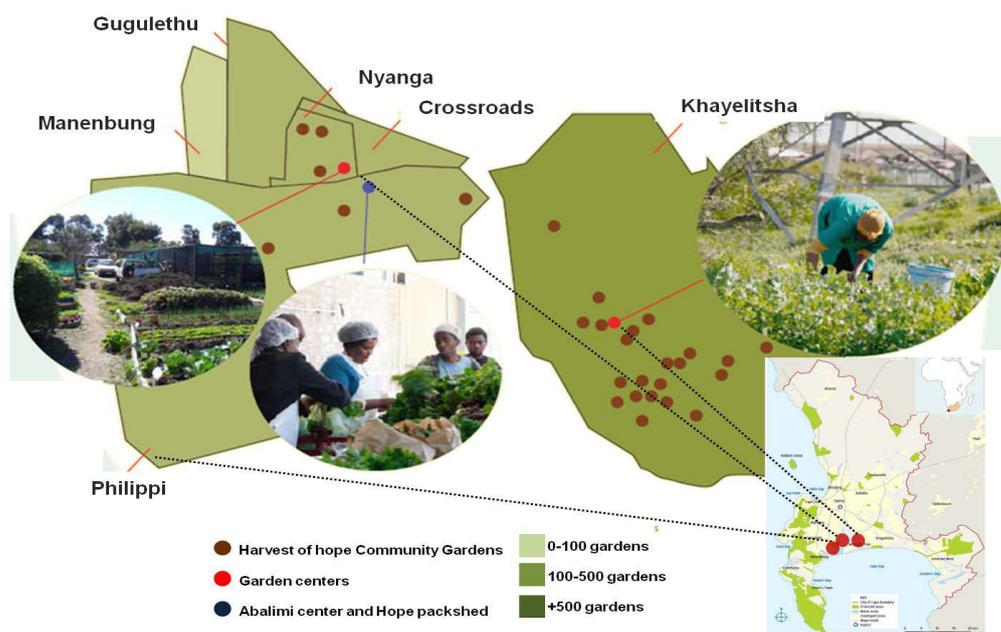


Figure No.26 Harvest of Hope process, Abalimi Bezekhaya, Source: designed by the author 2012. Photographies: Gloria Gaviria, Cape Town, Nganga, Fezeca, Guguletu, 16th October 2012.



5.5 Criteria for identifying land for urban agriculture

After realising that there are successful projects that have been implemented in public land and that there are plenty vacant public open spaces; the Urban Agriculture Unit has started-up a strategic plan to establish the proper criteria to identify suitable land for urban agriculture in all its categories; crop production and livestock keeping (Hewett 2012). For first time, Spatial Planning Department responds proactively to be involved in identifying pockets of public land to allocate urban agriculture. They will be actively engage to facilitate the process that could work as a catalyst the use of land in a productive green manner in Cape Town.

During the discussion with some departments; it was clear to understand why to allocate land for urban agriculture is a complex issue. Property Management is the department that manages the city's properties and assets. Even though the main priority is to allocate land for housing, they clarified that the stumbling blocks in the whole process to allocate land for urban agriculture are transfer regulations and the lack of clear criteria about the type of land that is required⁴².

⁴² In interview with Development Manager Andre Human, administered by Gloria Gavia, on October 22nd 2012 (Annex 07)

Figure No.27 Harvest of Hope Community Gardens, Abalimi Bezekhaya, Source: Adapted from Small 2012.

The former is related to legislation which guides the city in the way that the Property Management Department might sell or make the properties available according to city's needs and the applications submitted by the different departments. The latter refers to the process that the Urban Agriculture Unit needs to drive and set up. It is important to count with the continuous support of Spatial Planning Department and other departments in pursuing the efforts to allocate land according to city's needs.

The Urban Agriculture Unit has finished setting up the criteria for urban agriculture's land recently. The next step is to establish a commitment with Property Management Department in order to allocate urban agriculture projects in some pieces of city land. This process will be challenging if there are some applications running at the same time and most of them are for housing development. It expected that the process will be in favor of urban agriculture initiative thanks to the land demarcation that will be established by the Spatial Planning Department; in conjunction with the criteria already set up by the UAU. Property Management Department will assess

on the land availability and the new suggested areas and the land will be reserved for urban agriculture projects.

The land lease is not considered when the departments apply for reservation areas; there is an arrangement between Property Management Department and the other departments⁴³. This process ensures that the land is not going to be designated to another department and it will be reserved for the purpose required. The reservations apply to these land areas for the period of time that the departments want to use those. The discussion arises in two senses; how to integrate urban agriculture with housing development in order to trigger these sustainable initiatives and the process to use temporarily these vacant lots that are already reserved without any immediate intervention. These two alternatives will be discussed further into detail as strategies to foster urban agriculture within the regulations established.

Basically, the criteria set up by the Urban Agriculture Unit takes into consideration impacts on proper use of land in special in the case of keeping of livestock. If the criteria does not follow the standards to develop that activity, the bad practices of this type of urban agriculture could lead to several negative impacts; for instance, bad smells, the harbouring and transfer of diseases from animals to humans, noise pollution to surrounding residents, road and traffic infringements (CoCT 2012).

The most common crop production practices in Cape Town is vegetable gardening; the criteria for identifying vacant sites in the city suitable for vegetable gardening; as well as for livestock either temporary or permanent; include: locational considerations, practical requirements, regulatory considerations and impacts of the use of land (CoCT 2012).

The criteria to identify land for urban agriculture purposes are focused on poorer communities. In

this line, the land suitable for urban agriculture has to be located in proximity to these underprivileged communities which implies to reduce travelling cost for farmers to the gardens. The location criteria argue in favor of clustering the gardens close to public facilities (schools, clinics, libraries, old age homes, council buildings, etc) (CoCT 2012). It will ensure land availability, access to water provision, electricity and security to the gardens; some of the main challenges mentioned in a previous chapter can be solved with these location criteria.

Regarding the practical requirements the size of gardens consider for land allocation vary from 10m² to 10 000m²; with a minimum of 4-6 hours sunlight per day (CoCT 2012). These types of plots will be selected according to regulatory considerations already formulated within the zoning schemes framework. This document clarifies that when a public open space is earmarked for a garden an internal departmental consultation process with a resultant public participation process must be followed (CoCT 2012).

The criteria are contemplating the impacts and benefits of using vacant public open space; mostly are positive. The sustainable use of land through the implementation of urban agriculture has as main benefits to contribute to food security, limit illegal dumping on the site, contribute to greening the City and enhance the safety of the area (CoCT 2012).

In the case of livestock keeping the criteria are broken down according to the size of the animal; small animals (goats, sheep, pigs) and space tolerant animals (chickens, rabbits) and large animals (goats, sheep, pigs, cattle, horses, donkey). The main guidelines are focused on the location and proximity to poorer communities, public transport routes and source of water. In this case temporary use of land will be not consider because the impact of these activities are significantly more than those of vegetable gardens. In addition the capital investment for these types of projects is relatively high (CoCT 2012).

⁴³ In interview with Development Manager Andre Human, administered by Gloria Gaviria, on October 22nd 2012 (Annex 07)

Practical requirements for allocating land for this type of urban agriculture refer to dry sites and not prone to flooding; minimum size of plots 4 000 square meters in extent or larger, and additional 2 000 square meters per additional large animal and minimum size of plots 125 square meters for small animal housing including additional space to accommodate the distances required from property boundaries per the by-law of the City.

As was mentioned before the regulatory framework is very limited to land for livestock keeping; consent from Council is required. In the case of small animals for example, the Policy for the keeping of animals and poultry for the City of Cape Town (2005) stipulates that where applications for small animals are submitted; a minimum area of 25 square meters free space is required per single small animal, with a maximum of 5 animals. Space tolerant animals (chickens, rabbits) the policy prescribes that any poultry house must provide at least 0.36 square meters per hen with a maximum of 12 hens per site. Besides, the Environmental Health By-law of the City (2003) requires structures that accommodate animals have to be sited at least 15 meters from any boundary among residential areas, or 6m of any boundary of a road or public open space, or 4.5 meters from any dwelling or shop where food is processed (CoCT 2012).

The Department of Environmental Affairs and Development Planning will play an important role on this livestock land designation. They will be integrated into the process with a basic assessment in order to obtain environmental authorization to implement this type of urban agriculture. According to the regulations already established in the National Environmental Management Act (Act No. 107 of 1998).

The criteria to identify land for urban agriculture purposes argue in favor the new vision of urban agriculture. This is a second huge step to increase the dimension of urban agriculture in Cape Town; the biggest one was the urban agriculture policy which gave formal recognition to it, the second one is the criteria already set up, the third one will be the new version of the urban agriculture policy with the sustainable

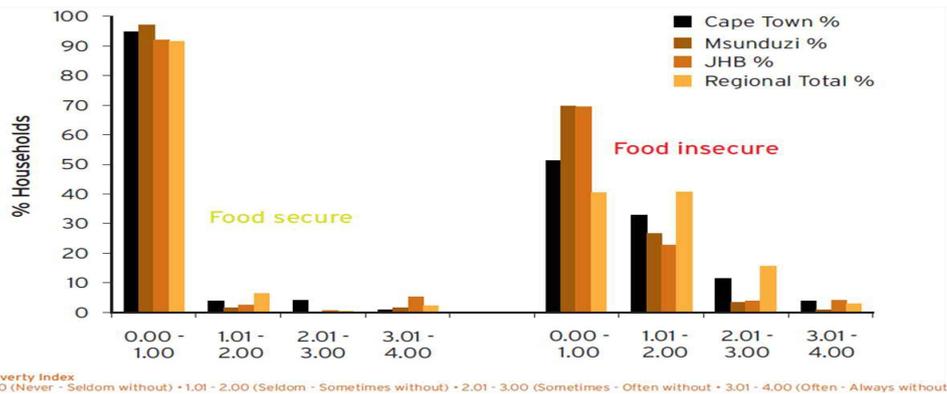
perspective; closely followed by the recognition of urban agriculture as a land use in the Zoning Schemes and Spatial Development Framework. Finally, the one that will work as a catalyst urban agriculture is its integration into the strategic planning agenda with permanent multistakeholders participation in all the initiatives.

5.6 Urban Food security

Sufficient food to everyone is recognized as basic right in the South African Constitution in the section 27. Battersby 2012 has worked on the assertion that food insecurity is an increasingly urban phenomenon with specifically urban characteristics in South African cities. "With the exception of urban food production, food is rarely on the urban planning agenda" (Battersby 2012, p.8). In this line, food insecurity in urban areas is not triggered by absolute food shortages. It is mainly caused by failures of households to be able to food accessibility and lack of an urban mandate that makes difficult to cities to respond.

There is a direct link between poverty and food security (Frayne 2009) (See figure No.28). According to the Hunger index (National food Consumption Survey of 2005), 51,6% of the South African population experienced hunger; 28.2% at risk of hunger and only 20.2% appeared to be food secure. The percentage of hunger at household level is higher in rural areas than in urban areas 58.1% and 46.3% respectively. Only 14.4% were food secure in rural areas compared to 24.7% in urban areas. In addition, 10,9% of children under five years old are underweight and 17,1% of households live in informal settlements and 8% live in backyards (See figure No.28).

After analyzing several documents and visiting the main official departments, it is possible to establish that the causes of food insecurity in Cape Town mainly based on political aspects, policy gaps and lack of integration into the planning agenda. Battersby 2012 suggests that the governmental responses to food insecurity tend to focus on technical solutions, such as increased crop production, price monitoring, food subsidies and others, but not on the broader causes of food insecurity.



Besides, Frayne et al 2009 assert that there is plenty evidence that support the assumption that urban poverty is associated with high levels of food insecurity at the household level in urban South African centers.

The historical legacy of Cape Town plays an important role in food security disparities. In fact, the apartheid and pre-apartheid policies systematically removed black populations to rural areas. Rural areas were therefore sites of great poverty and economic exclusion. “The urban development agenda has therefore been viewed as endorsing the status quo and doing little to address apartheid inequalities” (Turok and Parnell 2009 cited in Battersby 2012, p.13).

Food insecurity remains largely invisible to the politicians because it affects the poor who are also politically invisible (Maxwell 1999 cited in Frayne et al 2009). Besides, food insecurity in urban areas is predominantly a problem of access at household level (Frayne 2009).

The main limitations regarding access are: income, lack of land to farm, lack of water to irrigate, limited storage, refrigeration, cooking. Another aspect to be considered is spatial limitations related to location, structure of market and access to adequate public transportation. Urban food insecurity is the result between individual household capacity and socio-spatial processes and cannot be addressed simply through individual household strategies. Support from NGOs, private sector and local government is needed as well as political will and a good strategic plan at the city, provincial and national level that helps to reduce food insecurity in Cape Town.

Figure No.28 Lived Poverty index by Food Security Status, Source: Frayne et al 2009; Development Bank of Southern Africa 2009, p.14.

The strategic support to a bottom up approach can be interesting; as Frayne said “Cities are no longer there to be fed; cities must start feeding themselves” (Frayne et al 2009, p.9). Urban agriculture is a strategy that belongs to the food system but it is important to integrate it into the spatial planning development agenda and empower citizens to contribute with some initiatives.

The ways to cope food insecurity issues in City of Cape Town haven focused on developing and Urban Agriculture Policy and establishing an Urban Agriculture Unit (City of Cape Town 2007). Battersby 2011 argues that urban agriculture is being advocated as a main asset to reduce food insecurity of the urban poor in the city without major results. Battersby clarifies that at households level urban agriculture is therefore not a significant source of food in Cape Town, despite the existence of an Urban Agriculture Policy created by the city. 80% of households in Cape Town were food insecure and only 5% of them produce their own food in 2010 (Battersby 2011).

Although give formal recognition to urban agriculture from the policy framework is positive, planning, implementation; monitoring and evaluation are also needed. The integration of urban agriculture from the food system perspective into the strategic development can be the way to cope food shortages and malnutrition. Food systems are urban sustainable systems; chain of activities and processes locally-organised that works as a food planning alternative to ensure food sourcing,

food production, food processing, food marketing, food distribution, food preparation and food consumption (Miazzo 2011). The city has to encourage local production and make significant contributions to reduction of carbon and nitrogen footprints (Roux 2011).

There is a projected programme related to farmer support and development in Cape Town which is looking for supporting sustainable land and agrarian reform through provision of planning and settlement support services. Provide extension and advisory services to farmers, leverage investment from the private sector and commodity groupings.

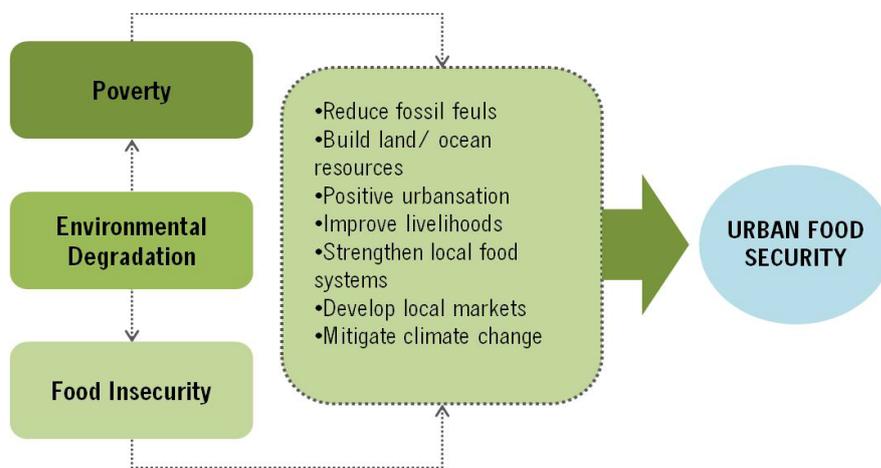


Figure No.29 Food Security Strategy to tackle Food Insecurity, Source: Frayne et al 2009; Development Bank of Southern Africa 2009, p.36.

As well as, facilitate access to affordable and diverse food through the delivery of agricultural projects at communal and household level and facilitate access to affordable and diverse food through agricultural production. But this programme is not taking place yet. For this reason it is important to break the poverty food insecurity cycle in Cape Town, there is an alternative proposed by the South African Development Bank (See figure No.29).

Main challenges regarding food insecurity and urban agriculture in Cape Town
<ul style="list-style-type: none"> • Poverty and urban food insecurity are directly related. • High food vulnerability at household level in urban and rural areas. • High ecological footprint; food makes up 41% of total footprint. • Lack of access to land for food production. • Non- affordable water for irrigation. • Lack of access to finance. • Theft and vandalism of crop production. • Urban gardens as dumping areas. • Lack of commitment of some urban farmers to preserve their urban farming projects. • Lack of integration of urban agriculture policy into the land use management system and strategic planning

Table No.11 Main challenges regarding food insecurity and urban agriculture in Cape Town. Source: Adapted from Sebopetsa 2011.

5.7 The Role of Urban Agriculture in Public Open Space

Public space is a sustainable urban infrastructure in which public life is developed. It is a crucial element in the sustainable infrastructure that complements the urban life and will provide more benefits if it is used properly and according to the strategic planning. The way that public space is defined in the spatial planning context of Cape Town is described as follows: “land which is designated as public open space, under the ownership of Council or other public authority, with or without access control, and which is set aside for the public as an open space for recreation or outdoor sport, including a park, playground, public or urban square, picnic area, public garden, nature area; and includes ancillary buildings, infrastructure and uses” (CoCT 2012, p.132).

The Spatial Development Framework of Cape Town is promoting the concept of open public space as way of build and scale to the city, allowing commercial, mixed-use developments for small-scale enterprises and home-based income generating options such as urban agriculture (CoCT 2012). The idea is to provide smaller and accessible residential courtyards with more sense of safety and belonging for the community, as well as creating an extension from the house to the public areas with sustainable activities that actively engage communities. public vacant lots are consider public open spaces suitable for some compatible land uses or activities such as green areas, housing development, infrastructure, urban agriculture, etc.

It is important to clarify that due to the legacy of history in Cape Town, the city does not registered much more sense of belonging for public open spaces. Mainly for this reason public space is conceived underutilised, neglected, vandalised and perceived as unsafe with lack of management and poorly maintained (Mammon 2005). Mammon argues that since the democratic period started, local people do not have sense of identity to these places. Since 2007, after some important interventions and workable projects made on public space by Violence Prevention urban Upgrading

programme, some people started to respect public open space and they are using them every day. The main purpose to these places is social engagement and town planning as tools in fighting crime (Krause 2012).

Currently urban agriculture is considered a consent use that is possible to be implemented exclusively in public open spaces that belongs to the zones number two and three. The first one related to public open space and environmental conservation use and the second one concerns to open space, private road and environmental conservation use. In single residential areas and community zones with public facilities is possible to implement urban agriculture in the public open space (CoCT 2012). There is plenty open public space in Cape Town suitable for implementing urban agriculture but some of these areas are not in proximity to the communities, or are considered to be of biodiversity importance, or not near a water source with good quality, or located in an insecurity area, or some of them are reserved for other purposes without implementing any temporary use.

The temporary use of vacant public and private land for urban agriculture in Cape Town is an interesting concept that has not been nor developed neither enforced yet. City of Cape Town could take into account this approach to use undeveloped land based on a negotiation between the owner and the user; the owner could be the City, the province or private; the negotiation also covered the departments that have already reserved this piece of land. Further, the City has the option of promoting multifunctional land use. This could be done through encouraging community participation in the management of open spaces, where food can be grown in combination with other urban functions such as recreation and city greening. The main issues registered on urban agriculture projects in public open areas are lack of commitment and security⁴⁴. Some gardens

⁴⁴ Information provided by, Janeth Bodenstein, Senior Officer, Environmental Impact Assessment Regulations, Environmental Department, City of Cape Town, in interview administered by Gloria Gaviria, on October 22nd 2012 (Annex 08)

already launched have been converted into illegal dumping areas; becoming in a serious public health issue that is affecting community members.

In order to prevent these problems, city has to develop strategic alternatives and take advantage of the flexibility that the zoning schemes permit on the use of public open space. Providing a productive and safe character to public space is possible to create trade infrastructures that enable community to work on it. With the implementation of urban agriculture in public space, these green productive areas should become in social, economic and environmental infrastructures. Certain comprehensive criteria are needed to ensure sense of belonging and security along the whole process. The main idea is to generate productive public space with sustainable and democratic character focuses on urban dwellers (See figure No.30).

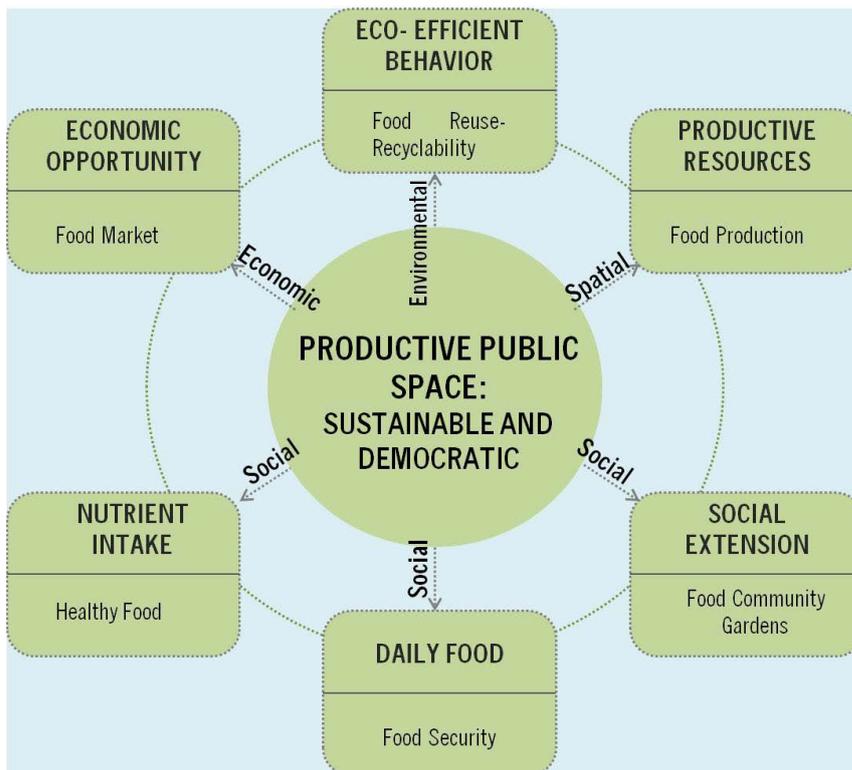


Figure No.30 Productive Public Space, Source: Designed by the author.

6. STAKEHOLDERS INVOLVED: ROLES AND FUTURE RESPONSIBILITIES IN THE STRATEGIC PLANNING



This chapter emphasizes, explains and analyzes all the key actors involved in urban agriculture from different perspectives; as well as identifying the new responsibilities in the integration and implementation of urban agriculture into the spatial planning and land use management. NGOs, official departments, academy, private sector and community have been playing a relevant role in the integration and implementation process (See figure No.31). It is expected that with the new status of urban agriculture as a land use and its proper integration into the spatial planning; the stakeholders continue performing strategic role and improve their responsibilities in order to implement urban agriculture in a comprehensive manner.

Urban agriculture in Cape Town came into being since 1982 when the NGOs started this sustainable movement. Since thirty years ago NGOs are playing the most significant and strategic role in urban agriculture. They are a model from planning perspective, training, education, skills development, follow ups, micro farming, and agro business.

Institutions are playing a crucial role in the inclusion of urban agriculture into the spatial planning tools and legal framework. The Urban Agriculture Unit has formulated the policy, the Spatial Planning Department has integrated it into the Spatial Development Framework, the Land Use Management Department has included it into the Zoning Scheme Regulations and the Economic and Human Development Department has included urban agriculture as a livelihood strategy for economic development and poverty reduction.

The academy in Cape Town is playing an important role influencing directly in decision making process and policy formulation on food security and urban agriculture. They are working on producing reliable data on urban food security issues; as well as gathering and analyzing the information in order to find out the gaps and contribute with the discussions and debate around food insecurity in the city. Basically, the academics argue in favor of creating a wider perspective of urban

agriculture; as well as identifying the role that this one is playing on food systems which have the potential to work as a strategy to reconnect people in Cape Town.

Private Sector is playing the role of the economic vision of urban agriculture with the commercial component. They are supporting programmes and projects in order to facilitate job creation and reduce poverty, foster economic empowerment and entrepreneurship; as well as facilitating training opportunities.

Community is playing the major role in implementing urban agriculture through bottom up initiatives supported by NGOs and private sector. Although there are many issues surrounding the implementation of urban gardens in public open areas, Cape Town has around 3.500 urban farmers working on growing their own food as a livelihood strategy or economic development.

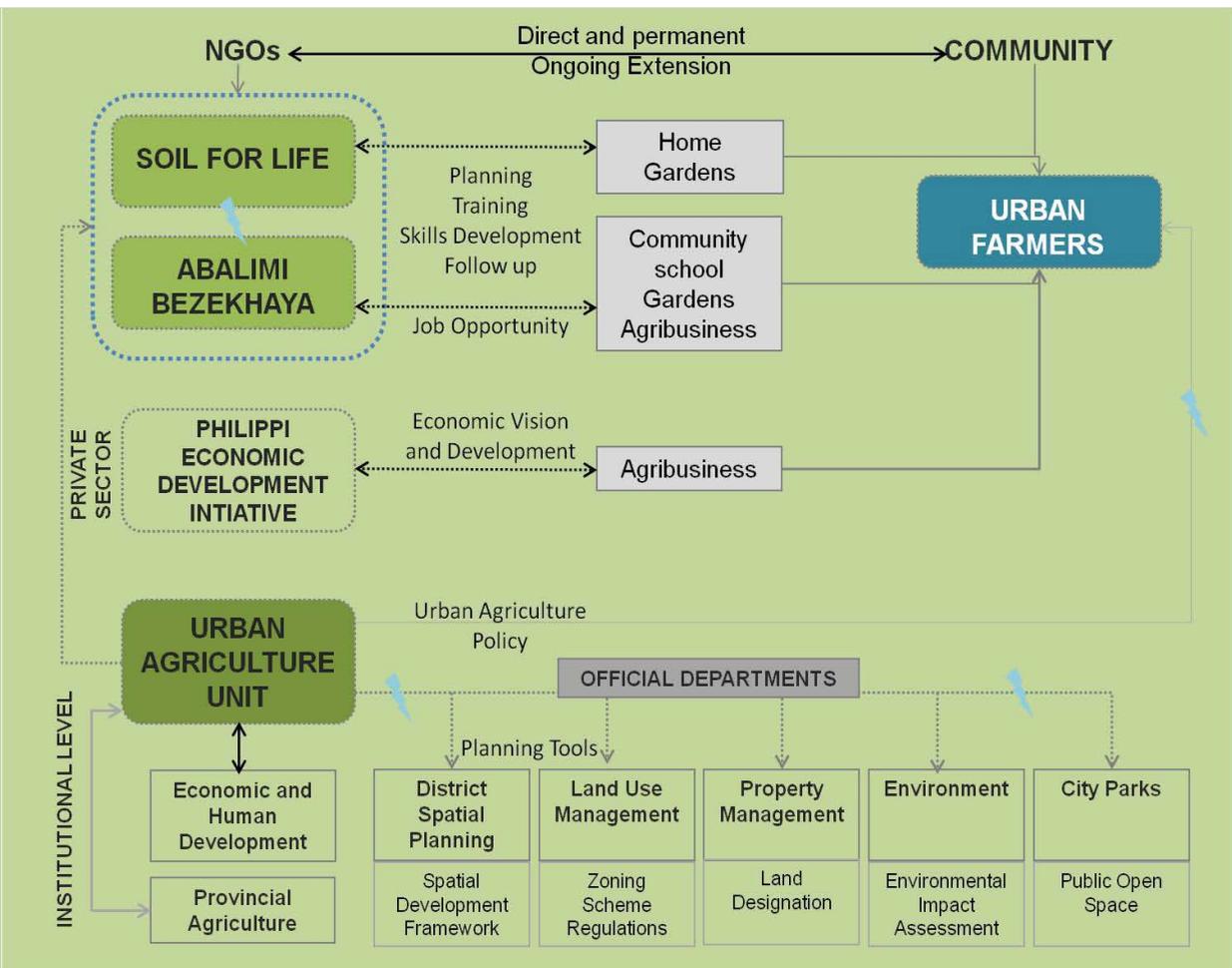
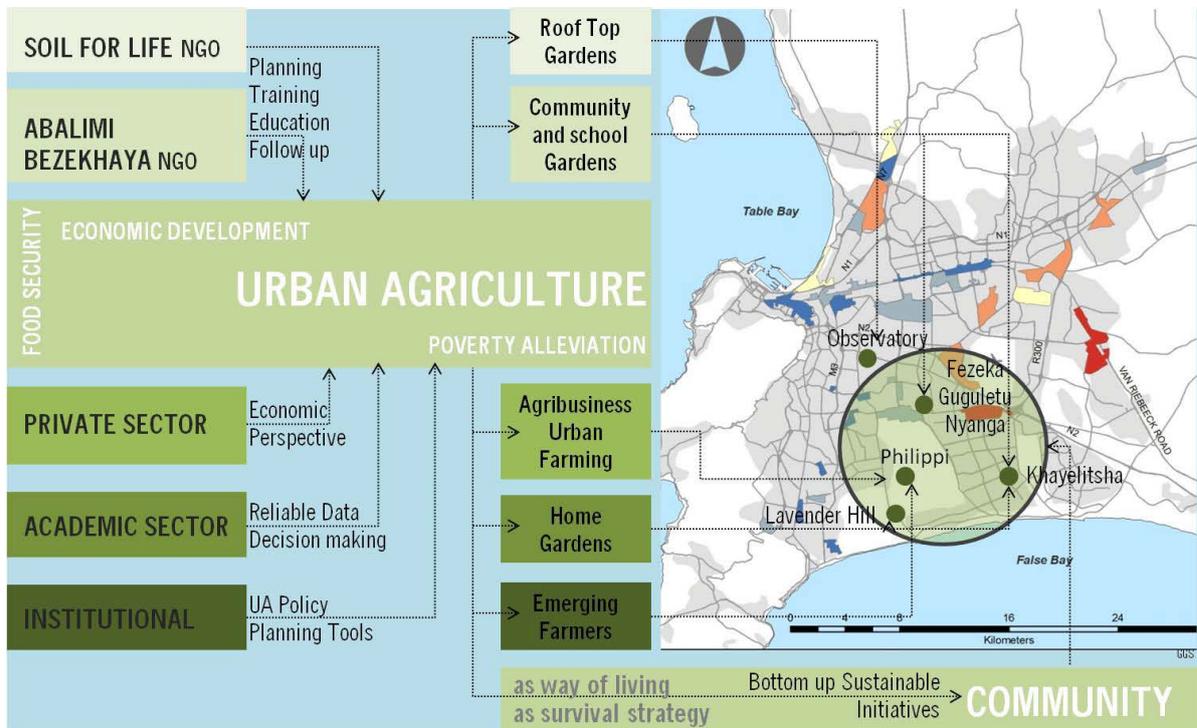


Figure No.31 Stakeholders Urban Agriculture in Cape Town, Source: Designed by the author.

Currently, all the efforts of urban agriculture for all key role players are concentrated on the poorest communities in the poorest districts of the city (See figure No.32).



6.1 NGOs Level

Non Governmental Organizations are playing a significant and strategic role in urban agriculture in Cape Town. They are a model from planning perspective, training, education, skills development, follow ups, micro farming, agro business, etc. In fact, they are creating organic micro-farming among the underprivileged communities and unemployed in poorest districts. The processes that they are supporting could be considered potential seeds for a more just and sustainable development in the city. NGOs are generating opportunities with sustainable models to reconnect the city through a food system. These successful models can be replicated throughout the city as models of hope.

The two main NGOs that are working on sustainable urban farming initiatives in Cape Town are Soil for Life and Abalmi Bezekhaya. The former focuses on home gardens and the latter is working with community gardens; which are for much higher level of surviving; as well as working as an entry into a business setting.

Figure No.32 Location Urban Agriculture in Cape Town, Source: Designed by the author.

Both of them are giving people seeds of hope through training, giving tools and empowering them in how to do urban farming and grow their own food. Urban agriculture is more than a livelihood strategy for these NGOs; from the ground level with permanent community efforts in a sustainable manner.

It is important to clarify that this section is contributing to document the important role of NGOs in urban agriculture in Cape Town due to the fact that there is no formal data on this topic. For these purpose some interviews were conducted with the Engineer Rob Small, Head of Abalmi Bezekhaya and the Social Anthropologist and Psychologist Louise Vaughn; currently manager of the training team of Soil for Life; in order to elaborate a complete profile about these models of Hope.

Soil for Life

Soil for life is a Cape Town non-profit organization that essentially provides people

with knowledge and skills to grow their own food, safe food and to improve their health and well-being in home gardens. The organization focuses on education and training in organic production. They teach people how to build the soil and grow healthy plants so that families can sit down to plates of safe, fresh nutritious food at night, all year round (SFL 2012). Besides, they teach low-cost methods that enable gardeners to harvest large quantities of food from small spaces using very little water and non harmful chemicals. These methods are designed to optimise production in small spaces, to build healthy soil, conserve water and to utilise rubbish in an environmentally-responsible way. In fact, they inspire people to be creative and resourceful, and to look for meaningful ways to use what they have without buying new materials and adding to the waste stream and over-burdened landfills.



The main mission of Soil for Life is based on a global commitment. The organization has embraced the impact on the lives of urban and rural poor and hungry; to make it possible for all people at all times to have physical and economic access to sufficient, safe, nutritious food to enable them to lead healthy, active life (SFL 2012). They also share common goals with the urban agriculture policy in regards to food security that is a kind of sustainable livelihood and it also helps people to alleviate economic difficulties. The NGO argues that with the knowledge provided, people are getting healthy food while learning how to do their own food.

Besides, they are working on growing people who are able to help themselves on many fronts: survival, earning their own money, creating

healthy families, improving values, dealing with inflation, problem-solving, developing creativity and resourcefulness, and building bridges of goodwill and understanding. The programme provides food for bodies, minds and souls.

This organization comes into being in 2001 when Mrs. Pat Featherstone set up Soil for Life community gardens based on permaculture background. In 2008, The NGO shifted into home gardens; Mrs. Featherstone decided to start up home gardens project; due to the low success of community gardens because they were surrounded by a lot of fighting and politics, vandalism. Nowadays, the NGO is training in home rather than community gardens because is the way to put responsibility on people themselves.

Regarding the financial resources this organization is financed by different private funders and some donations from individual people; they do not receive any support from the Urban Agriculture Unit that is the governmental representation. The human resources of the NGO rely on around 10 employees. In the training team are working 3 people and 2 assistance trainers. In the field there are people who the NGO have trained at home garden and now they are helping to train people. They have sort of partnership with various organizations. They are assisting some South African organizations who are running training process. There is a connection with the New World Foundation in the ecological component that they want to promote.

They are working with very underprivileged communities and lowly educated. They train in groups of ten to fifteen people in their home gardens; mainly in areas such as Khayelitsha, Nyanga, Lavender Hill, Philippi, Guguletu (See figure No.33). They have designed some programmes in which people get support during four years. Yellow programme is the first stage which lasts three months; one day a week and it is related to food garden training (See figure No.34). The NGO gets fifteen rands for the joining fee and people get three months of training. Besides, people get a coupon for exchanging all components needed to set up a garden such as seeds, compost, etc. The

positive point for people in regards to inversion is that after getting the training, they do not need to buy any stuff again because the NGO teaches them how to do the compost that is the essential component to grow food. After 3 months there are other 3 months that the NGO follows up, in which they visit all of the gardens that they have trained in the last 4 years. After that, there is another train of cycle and then there is another follow up. People get support after 4 years. In fact, the NGO check if people have forgotten to do urban farming or if they need to start up it, or if they need a little boost with extra material. There is a permanent support and follow up that assists to build a consistent and sustainable movement around urban agriculture.

Apart of the lack of enough financial resources; the NGO is struggling with the lack of digital information about the projects. It is absolutely complex to collect data regarding the type of crops, people involved or location of the projects because most of them are located in informal settlements. They have a physical outdated map with some project's locations but they do not have the technological tools and time to engage properly and to do the Global Positioning System task to come up with a digital mapping. Besides, they do not have the tools, finances to get the rights technology. Local government does not provide any support in allocating or mapping projects. With a physical map there is not a map updated enough to reflect the current status of community gardens in Cape Town. As was mentioned before they have established core areas clearly in which they have assisted to set up gardens, but they do not gather information about the gardens. It is quite complex to measure urban agriculture at home garden level. In fact, there is not possible to quantify the products produced, community members involved on it, levels of engagement, positive or negative impacts of urban agriculture. Currently, there is not information that enables to get the whole perspective about urban agriculture at home gardens level. A set of sustainable evaluations are needed in order to understand the whole movement and reinforce decision making at NGO and governmental level.

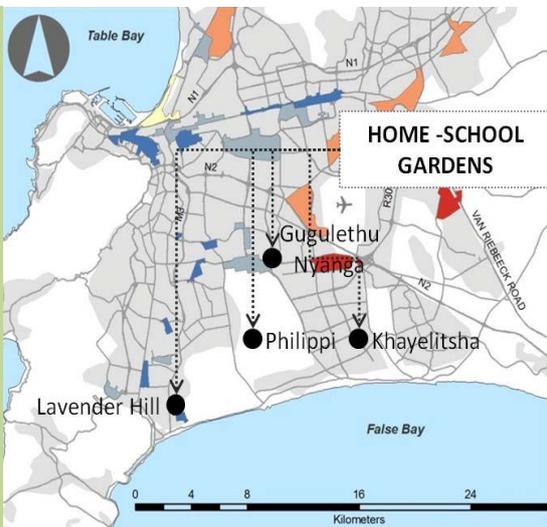


Figure No.33 NGO Soil for Life, Home Gardens, Source: designed by the author

Although for identifying the number of gardens and main places it is important to look through several number of records and it will take long time to collect the numbers, the NGO estimates that there are around 500 people running urban agriculture at the home level and these people have received Soil for Life's support. Besides, there are two school gardens and approximately twenty students are working on urban agriculture per school.



Figure No.34 Training Section, Soil for Life, Photographies: Gloria Gaviria, Cape Town, Lavender Hill, 12th October 2012.

Furthermore, the majority of people who are doing urban agriculture at home level and decide to apply to be or take part of Soil for Life's program tend to be older, over 40. They tend to be the older mamas; there are more women than men, because women play the key role in the community and need to feed their children. There are many single households that

are women that are taking care of all the children and men have to move to do something else. Most of the cases women are source provider for the whole family.

Soil for life means a big opportunity for the community. The NGO represents a big change in their lives through the knowledge that they have learned and successfully implemented. During the research process some interviews were conducted with some community members along the poorest areas in Cape Town and the common definition about what Soil for life means for them was “everything” (See figure No.35).



Figure No.35 Soil for Life means everything for the community, Royce Peters’ Garden, Photographies: Gloria Gaviria, Cape Town, Lavender Hill, 12th October 2012.

Role and Responsibilities

Currently, Soil for Life is playing the most relevant role at home gardens level in Cape Town. Their main social responsibilities are focused on giving the tools to people about how to produce their own food and build the soil through providing permanent support to use these tools. Although the NGO has to spend which is financially problematic to visit the home gardens to provide the training, they want to take place in the community. The main idea is to demonstrate people that they can do garden without any need for extra stuff and it has to be in the context that they will live. It is about creating knowledge transmitted by the

NGO and turning into tools that will part of peoples’ garden. The whole idea is to make it understandable that people learn as much as possible how to survive producing their own food. People are recognizing Soil for Life as a strategy to learn about farming. They normally approach the NGO and ask for their support.

Another important role is that the NGO has a financial relationship with local government. They are working with the Economic Development Department to implement a programme with twenty social enterprises from the gardens. Soil for life is doing training and they also have to help these community groups to start the business which represent another level in the food system.

In addition, Soil for Life is teaching how to rebuild the soil of Western Cape that is basically dead and extremely sandy. They are teaching how to take care of the earth which brings some biodiversity to the city and enables to preserve it environmentally safe.

They are supporting people, providing some knowledge that is going to be useful in many scenarios and for the rest of their life. They will be able to practice gardening in long extensions of land because they have learned and practiced how to grow their own food. The NGO is teaching to people how positive is practicing organic urban agriculture.

The future responsibilities in the integration of urban agriculture in the spatial planning

The main responsibility that the NGO has in their hands is to teach people the tools and the knowledge to feed themselves and their families. Soil for Life needs to be able to assist in the reality of the world; food prices are going up and not coming down. If people do not have any economic resources to buy their food, at least they have the skills and ability to be able to support and feed the family in a healthy way. Food insecurity is not having enough food; it is not having the right food, not having the right diet. It is about ensuring the people are able to feed themselves with the right food. Soil for life can contribute meaningfully to this social commitment.

The NGO should continue working on creating green at household level, working with communities that live in unfriendly spaces and often dangerous areas in order to demonstrate the potential of growing food as a way to bring about change to a wide array of issues and to tackle the most complex challenges. Besides, to continue working with all types of communities, poor and rich alike as well as continue emphasizing protection of the natural environment, rebuilt the soil and foster food security.

Abalimi Bezekhaya Association

Abalimi Bezekhaya means “Farmers of Home” in Xhosa⁴⁵. They have been supporting community gardens in urban areas, organic micro-farming among the poor and unemployed in the townships of Khayelitsha, Nyanga, Philippi, Fezeca, Gugulethu and surrounding areas on the Cape Flats of Cape Town since 1982 (See figure No. 36). By growing fresh, organic vegetables throughout the year, three thousand micro-farmers (2.500 in home gardens and 500 in community gardens) receive support from Abalimi in order to supplement their diet, improve household food and nutritional security and provide sustainable additional income (Abalimi 2012).

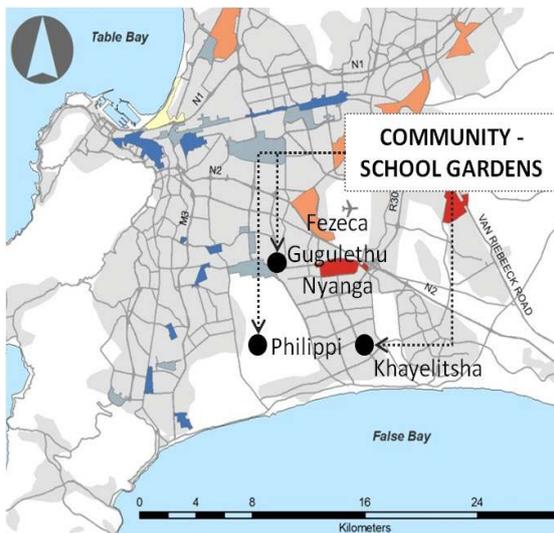


Figure No.36 NGO Abalimi Bezekhaya, Community Gardens, Source: designed by the author

⁴⁵ The Xhosa people are speakers of Bantu languages living in south-east South Africa, and in the last two centuries throughout the southern and central-southern parts of the country.

The NGO is assisting individuals, groups and community based organisations to initiate an urban garden and maintain permanent organic food growing as the basis for sustainable development, self-help job creation, poverty reduction and environmental renewal. Mainly, women are engaged in vegetable gardening in home and community gardens in order to supplement their diet, improve household food and nutritional security, and provide sustainable additional income. In addition, men have seen the opportunities for making a decent, dignified and sustainable living out of urban farming and some of them have decided to get involved. In some community gardens, the average age of producers is as high as 60 years and there is a very low level of participation and engagement of younger people⁴⁶. Besides, the NGO provides training to disable people in order to develop their skills and integrate them into the urban farming activities (See figure No.37).



Figure No.37 Disable Urban Farmers, Abalimi Bezekhaya, Photographies: Gloria Gaviria, Cape Town, Gugulethu Garden, 12th October 2012.

There are two core programmes that Abalimi is running: 1.The Urban Agriculture Programme (UAP) and the Cape Flats Greening Programme (CFGF). The UAP brings permanent support to 3.500 urban farmers and The CFGF works to transform arid areas within the townships into flourishing indigenous gardens, improving the quality of life for residents and contributing

⁴⁶ In interview with Engineer Rob Small, Head of Abalimi Bezekhaya , administered by Gloria Gaviria, on October 16th 2012 (Annex 14)

positively to the environment (Abalimi 2010). There are some special projects associated such as the Schools Environmental Education and Development project (SEED, since 2000), which capacitates teachers to develop and utilise school gardens as outdoor classrooms. And The Agri-Business Place Phillipi, that is a partnership project which aims to provide all round services to emerging agricultural entrepreneurs (since 2005) (Abalimi 2010). In addition, Abalimi provides to urban farmers inputs such as seeds, seedlings, compost, fertilizer and equipment. These are either free or subsidised, depending on the price of the input. Groups are starting to contribute (100% of seed and seedling costs, 10% of bulk cow manure costs) and this is deducted from their monthly (Abalimi 2010).

In general, the support provided by Abalimi enables community gardens to become permanently sustainable on a survival subsistence basis and to graduate to market sustainable livelihood status. The major achievement started by the NGO was the establishment of a Micro-farmers movement that supports producer groups and is involved in sustainable initiatives.

All projects supported by Abalimi have been encouraged to be 100 % organic farming; no artificial fertilisers, GM seed or commercial chemical pest control measures are used to grow their food, there is not contribution to degrade the environment or polluted any river in Cape Town through these gardens⁴⁷. Methods employed are building soil fertility using pure compost and through cultivating bio-diverse microclimates. This stimulates a wide range of bird and insect life as the basic pest control and fertility building technology (Abalimi 2010).

Regarding the training it lasts 4 days course and costs five hundred Rands. The training is about how to grow food in 100 m² plot; urban farmers learn how to feed their families for the rest of their life. The next stage if they want to know how to earn some money, they have to apply to

another training module. The engineer Rob Small during the interview asserts “Growing food to the nation, to eat that is easy; if the people are waiting at home for somebody to feed them, there is not salvation in the country. As long you have a little bit water and skills, you have the tools to produce your own food”.

Abalimi is promoting skills development and teaching how to grow food according to seasonal organic vegetables which impact on nutritional security and health at household level. Furthermore, the communities that benefit from Abalimi Bezekhaya’s projects receive South African Institute for Entrepreneurship (SAIE’s) Agri-Planner training in order to achieve the technical competencies necessary for them to operate their micro agribusiness more professionally (Abalimi 2010).

The eco-efficient use of land and water is one of the core topics of Abalimi’s training. On one hand, they have argument that large areas of land are no needed to achieve nutritional and relative food security at household level. One square meter of sprouts or fresh quick growing greens can make the essential difference to one person as far as nutritional security is concerned (Abalimi 2010). Even 10-20 square meters of intensive organic garden can supply base-line nutritional security to one family of 5-6 souls and 100 square meters can provide all fresh greens a family needs year-round (Abalimi 2010). On the other hand, water can be recycled, harvested, conserved in the soil and deployed through drip lines or equivalent. Only 3-4 litres per square meter per day are needed during dry periods. (See figure No.38) this is an example how the big mamas in Fezeca-Gugulethu’s garden are harvesting water and solving one of the main challenges in urban agriculture; water affordability.

⁴⁷ In interview with Engineer Rob Small, Head of Abalimi Bezekhaya , administered by Gloria Gaviria, on October 16th 2012 (Annex 14)



Abalimi has a center with expertise available permanently. The human resources Abalimi are mainly represented by nine women and their helpers that support all the micro-farming families per annum, and most are skilled and experienced organic urban micro-farmers themselves, with their own gardens and community garden projects. They are supported by one male driver assistant, up to six professional administrators and support staff, around fifteen casual staff weekly, the short and long term volunteers and donors (Small 2012).

Harvest of Hope is the marketing unit of Abalimi. The NGO as a partner of the Local Government implemented the programme “From Seed to Table” that is known as ‘Harvest of Hope’. This box scheme was launched in 2008 (see explanations in chapter number 5.4). Abalimi monitors the sustainability of all gardens on the basis of several pre-defined indicators to make sure that the producers are ready to become part of Harvest of Hope (HoH). The main objectives of HoH are to create a sustainable and expandable market for producers in and around Cape Town; to use this market as an engine for growth and an instrument for poverty alleviation in poor communities; to give customers access to fresh competitive organic produce and contribute to fewer food miles (HoH 2010).

Most of the urban community gardens supported by Abalimi are located in public open spaces or in private open spaces that belong to public or private facilities such as schools, clinics, churches among others (See figure No.39). Basically, they are not straggling with access to land because they are not applying to implement a garden in land that belongs to the local or

Figure No.38 Water Harvesting, Abalimi Bezekhaya, Photographies: Gloria Gaviria, Cape Town, Fezeca-Guguletu, 16th October 2012.

clinics that have patches of land that can be used. There are also road and railways reserves that can be suitable for implementing urban agriculture. The Engineer Rob Small asserts that to get permission to use public land or to get access to city or provincial land is almost impossible; Abalimi tried to get permission to a piece of land to use it in urban agriculture purposes and the process is stocked, almost 2 years. For this reason, they are dealing with private owners with land surrounding churches, schools among others. In this way to get legal access to land and implement a garden is a reality with this NGO⁴⁸.

Prosperity through Aquaculture is the new sustainable initiative of Abalimi (See figure No.40). It is a fish farming prototype that seeks to analyze the possibility to implement this small containers with four tanks in the majority of the community gardens. This is an alternative and innovate strategy that can help to introduce fish as a daily product. However, before massive implement this fish farming more studies are needed due to the fact that these projects represent major investment to gardens that are located in the townships.

⁴⁸ In interview with Engineer Rob Small, Head of Abalimi Bezekhaya, administered by Gloria Gaviria, on October 16th 2012 (Annex14)



*Khulamtwana community garden,
Mkhaza, Kayelitsha Kayelitsha*



*Esam Sakho community garden,
Mkhaza, Kayelitsha*



*Tsikarong at Bulumko School
Kayelitsha*



Fezeka Guguletu



*Bambanani at Sivuyiseni Primary
School, Kayelitsha*



Agora at Bulumko School, Kayelitsha

*Figure No.39 Community Gardens in Public Space,
Abalimi Bezekhaya, Photographies: Harvest of Hope
records, Cape Town, Kayelitsha, Fezeca, Guguletu and
Philippi, from 2008 to 2012.*



Figure No.40 Fish Farming Prototype, Prosperity through Aquaculture, Abalimi Bezekhaya Photographies: Gloria Gaviria, Cape Town, Nyanga, Mpumelelo St, 16th October 2012.

Abalimi is recognized as a partner by the Urban Agriculture Unit and is a founding partner of the Sustainable Livelihoods Network (SLN) which is convened by the Environmental Resources Management (ERM) Department. The NGO has important recognition and proof of that is the long list of 23 awards that this model has gotten since 1992.

However, Abalimi do not get any support from the local government. They have been involved in the development process of the urban agriculture policy but there are some clear disagreements among the NGO and the Urban Agriculture Unit (UAU) and some official departments. The main disagreement is around animals that in the last urban agriculture policy were not supported. Although the new version policy has included animal husbandry as an important component, the Zoning Schemes Regulations and the Spatial Development Framework have not incorporated in their strategies keep livestock in urban areas. For these reason, Abalimi consider that is important to incorporate it much more actively in a way that UAU sits position and discuss the inclusion of this component into the spatial planning and land zonification⁴⁹.

⁴⁹ In interview with Engineer Rob Small, Head of Abalimi Bezekhaya, administered by Gloria Gaviria, on October 16th 2012 (Annex 14)

Role and Responsibilities

Currently, Abalimi is playing the most relevant role at community gardens level and they are assisting by providing the following support services: 1. Project implementation: Planning, implementation and support for community projects. 2. Agricultural and horticultural commodities: Supply of low cost bulk agriculture and horticultural inputs to the community from the Peoples' Garden Centres plus marketing of produce outside of the townships via the Harvest of Hope pack shed and marketing system. 3. Training: Vegetable gardening, horticulture and nutrition courses, Integrated Land Use Design (ILUD) workshops. 4. Organisation building: To empower emerging groups to become independent. 5. Facilitation of partnerships: To maximise all-round service delivery to target group. 6. Research, planning monitoring and evaluation: To assist with planning and implementation of community garden projects and to improve practice, delivery and sustainability. 7. Financial and organisational sustainability for Abalimi.

The future responsibilities in the integration of urban agriculture in the spatial planning

The NGO should continue being the model in terms of planning, training, education, skills development, follow ups, micro farming, agro business, etc. local government should rely on twenty years of this productive expertise in which the NGO have been working with underprivileged communities in building up Cape Town with sustainable initiatives that have helped to reduce poverty, food insecurity, unemployment rate, environmental degradation

among others. Besides, the NGO is focusing consistently on direct poverty reduction through micro-organic vegetable gardening among the poor; it is an important strategy to be supported by local government in the spatial planning in order to achieve their goals regarding these matters.

Abalimi is actively engage in empowering communities in organizing voluntary micro-associations to provide support among farmers in gardening initiatives and social development. They have to continue providing formal training that enables urban farmers to achieve technical competencies and to operate their micro agribusiness more professionally.

From the planning perspective there are much more to learn from this NGO in the processes to get access to public and private open land and access to water. The NGO is making direct contracts with private owners in public or private facilities such as schools and clinics in order to overcome the stumbling blocks and implement urban gardens. In terms of water they are implementing water harvesting to irrigate the gardens and do not interrupt the irrigation process due to the lack of affordable water.

Abalimi is generating an interesting impact both within the community and on open space urban planning. It has sparked dozens of applications from new groups and has given planners solid proof to argue for community managed open spaces, and for self-help job creation; this is an interesting approach to analyze and replicate.

On one hand, they should establish a permanent partnership of the Urban Agriculture Unit and joint efforts in order to create access for small-scale producers to a new market towards a sustainable food system in Cape Town; based on the successful model Harvest of Hope that is a well-organised, complex logistical marketing business that can be replicated throughout the city to provide plenty coverage in terms of food, reduce levels of food insecurity, poverty, unemployment rate; as well as creating a sustainable cycle to reconnect city.

On the other hand, they have to continue supporting home and community gardens and

groups or individuals that have as a main desire launch a garden to grow their own food or enter into the agribusiness model. The importance of organic food growing and nature conservation projects as the basis for sustainable lifestyles, self-help job creation, poverty reduction and environmental renewal are sufficient goals to continue developing interesting models that can be easily replicated around the world.

Both NGOs have the crucial responsibilities to continue developing a step-wise approach that is necessary to deal with urban agriculture challenges such as the lack of support from the political perspective, low economic dynamics and general challenges with underprivileged communities such as poor education, poverty mentality, gender/racial and class tensions, very poor soil and mass unemployment.

In addition, they have to contribute in the multi-stakeholders participation process with the home and community gardens perspective in order to build the urban agriculture policy and to generate comments and recommendations to face the main challenges. The participation in consultative forums will enrich the debate and establish a common vision with different perspectives about urban agriculture; all stakeholders should come together and discuss the situation. For this reason, another important responsibility is to assist permanently to the Urban Agriculture Unit in consolidate efforts to launch home gardens projects according to the scope and scale established.

As was mentioned the crucial role that NGOs are playing in Cape Town has generated significant impacts on urban agriculture. NGOs are training people around democracy. In fact, they are engaging and driving society towards being more sustainable; building communities, and their skill capacities in urban agriculture matters. There is much more to learn from the strategic thinking and actions developed by NGOs in terms of management capacity, community organization and planning among others.

6.2 Institutional Level

There are some official departments that are playing crucial role in urban agriculture in Cape

Town, in special Economic and Human Development Department in which urban agriculture is included as a livelihood strategy for economic development and poverty reduction. After many overlapping efforts among departments the urban agriculture unit was created within the Development Facilitation Branch of the Directorate of Economic Development Department to lead the policy formulation and implementation process.

Although, urban agriculture as a sustainable livelihood strategy for underprivileged communities is gaining Momentum in the spatial planning discourse, policy making and multi stakeholders' participation in Cape Town; the coordination in joining efforts among departments is required, in special the District Spatial Planning with the Spatial Development Framework, Land Use Management with the Zoning Scheme and Urban Agriculture Unit with the urban agriculture policy. As well as cooperation with the Environmental, Water, Waste department and Property Management and City Parks.

Definitely, the miscommunication among departments is a big stumbling block⁵⁰ that is affecting urban agriculture. Even though all the departments are working on interesting initiatives, strategies and policy formulation on urban agriculture, the lack of communication generate some delays in development process and overlap efforts in the same interests. For instance, the District Spatial Planning Department is working on strategies to protect the main urban agricultural area in Cape Town that has significant value while the Housing Department is looking for strategies to release this land for social housing development.

The three biggest steps in the integration of urban agriculture in the spatial planning and land use management have been taken place: its inclusion in the Spatial Development Framework, the inclusion in the Zoning Scheme Regulation and the formulation of the urban agriculture policy. The debate on the

contradictions among these planning tools, departments, policies, NGOs and urban farmers is on current revisions by all the departments. It indicates that the next step is to look at efficient planning tools and policies that encourage implementing urban agriculture in a comprehensive manner in Cape Town.

After conducting several interviews with the official departments involved in urban agriculture; the main conclusion is that the Economic Development Department should take the lead role and the other departments should drive urban agriculture; Spatial Planning and Land Use Management Departments should continue working on the planning tools and new departments should integrate to the process like health, education, water and waste departments. Urban agriculture should be an integrated strategy, it should be a whole team effort and everybody should make inputs into do it in order to foster its comprehensive implementation.

Economic and Human Development Department

This department is playing the most significant role in urban agriculture in Cape Town. They have introduced urban agriculture into city strategies and policies through the local economic development programme as a livelihood strategy for poorest communities in the poorest districts. For promoting urban agriculture this department has created an Urban Agriculture Unit that belongs to the Economic Development Facilitation Branch which its main role is to facilitate city's development by encouraging the creation of a positive enabling environment to do business, promoting investment and supporting city's priority economic sectors and expansion of existing businesses and skills transfer (CoCT 2012).

This department through the Urban Agriculture Unit (UAU) and how it is announced in the urban agriculture policy provides financial and operational assistance to urban farmers (small and micro farmers). This assistance includes technical advice and access to farming facilities, tools, equipment and subsidised water for irrigation. In the reality, there is a huge gap

50 In interview with Assistant Officer Spencer Fowle, administered by Gloria Gaviria, on October 15th 2012 (Annex 04)

between the policy formulation and the implementation process.

In fact, the UAU renders on NGOs to provide any kind of assistance. The UAU is considered reactive, mainly they are revising the urban agriculture policy and they are developing a strategic development agenda on urban agriculture because they want to change into the proactive field. For more details about how the UAU operates in Cape Town see chapter six in section 5.2.

The main responsibilities of the Economic Development Department are focused on promoting economic growth, job creation, reducing poverty and monitoring inequalities. The department does this through a number of projects and programmes, such as Investment Promotion, Cape Town Entrepreneurship Week, Cape Town Activa, informal trading and business support facilities framework and local area economic development programmes in which urban agriculture is included.

In addition, this department has hosted three times the Urban Agriculture Summit in order to bring national, regional, provincial and international role players involved in urban agriculture together and discuss the relevance of its current Urban Agriculture Policy. The summit therefore has served as the public participation component in the policy revision process. The new policy will be launched in 2013; it will aim to increase the scope and scale of urban agriculture in Cape Town.

Future role and responsibilities in the integration of urban agriculture into the spatial planning

As leader department, major responsibilities are focused on it. This department needs to be more proactive and foster urban agriculture into the planning tools supported by urban agriculture policy that should build up with all stakeholders involved. There is a new implementation component that requires more efforts, financial and human resources.

Alliances with all stakeholders are urgently needed in order to join efforts to face the main challenges, learn from each other and provide proper support to home gardeners, community

groups, emerging farmers or commercial farmers. The Economic and Human Development Department through their local ward councilor or Urban Agriculture Resources Centers should provide assistance to all stakeholders according to their geographical location.

Continue holding summits with various local and international delegates in order to share ideas, expertise and experiences in urban agriculture will useful to increase the scope and scale in future time

It is relevant to continue working in policy formulation, exposing successful case studies; as well as collecting formal data and conducting sustainable assessment in urban gardens are tools for decision making that can be shown to the city for getting grants or increase financial resources.

The ongoing extension services are required to provide support to urban farmers and urban gardens in addressing main challenges and assisting with training, skills development, monitoring and evaluation.

This department should be able to offer advice, assistance with access to land, provision of seeds, compost and water, infrastructure such as fencing, containers and irrigation supply, tools such as rakes, spades and water pumps, or skills training among others.

Spatial Planning and Urban Design Department

Urban agriculture belongs to the economic development aspect and it is involved in the environmental and social health concerns that this department has recently included in the planning tool: Spatial Development Framework (SDF). This department has been proposing the tools for the SDF in the different eight district plans in Cape Town; including urban agriculture in the poorest districts.

Spatial planning is about anticipating long-term change (and the pressures and opportunities that emerge from it) and articulating a logical and flexible development path for a more sustainable and equitable future. The Cape

Town Spatial Development Framework and associated District Plans establish guidelines about how and where Cape Town should grow in the future. These spatial plans guide new investment, give effect to the principles and priorities of the city's development strategies, and identify priority areas for strategic intervention (CoCT 2012).

The Spatial planning department is in charge of making suggestions about the urban functions that should be implemented on the land. This department aims to lead and guide the spatial and physical transformation of Cape Town, through co-ordinating, developing and monitoring spatial policies, plans and development. They have identified spaces for strategic location for future development; working on public decision, allocating community facilities of urban upgrading in certain areas, taking into account environmental, economic and social considerations. Besides, they are establishing guidelines for projects for public investment.

The department is responsible for preparing, as part of Cape Town's Integrated Development Plan, a city-wide spatial development framework. This requires integrating and balancing various requirements of different sectors (such as housing, transport, utilities and economic development) that affect and influence the spatial growth, form and performance of Cape Town.

The main role of this department in urban agriculture matters is focused on developing strategies for the inclusion of urban agriculture in SDF which has agricultural designations which promote urban agriculture and suggest activities that should be encourage like agro tourism facilities. The SDF is a tool that works as guidelines for all departments that require land; this tool will inform if it is possible or compatible to implement a new project in a specific area of the city. All applications must be following these guidelines.

There is not zonification for urban agriculture, only certain areas with significant value are considered relevant; this situation is directly compromising the implementation and generate

the permanent competition with other land uses for land designation.

The biggest contribution of this department in terms of urban agriculture has been integration of it into the city's development, taking into consideration certain value areas. They have included public open spaces and how to integrate urban agriculture into these vacant areas. In fact, they are developing applications into the Land Use Management department for urban agriculture zonification with very low success until moment. The role is to recommend the implementation of urban agriculture in certain designation areas such as public open space but more guidelines are needed.

They are doing a remarkable job with the policy, plans and SDF. Since 2012 there is planning policy that makes the arguments stronger and valid for urban agriculture. In fact, this is a piece of legislation that should be considered in terms of implementation for all departments. This is a good beginning; the next step is to improve these legislations taking into account cooperation with other departments.

Nowadays, the Urban Agriculture Unit is linked with the Spatial Planning Department. They are trying to start a process together in one of the eight districts in Cape Town for identifying land suitable for urban agriculture⁵¹. There is not current zonification for urban agriculture, only it is consider an activity included in the zoning scheme regulations. Identifying land for implementing urban agriculture should be a biggest step in the integration process.

Urban agriculture is divided in the SDF in zones of high potential in agricultural land and potential in certain areas with significant value. The Philippi Horticultural Area (PHA) that is the most significant urban agriculture and valuable farming zone in Cape Town has a special category, including specific guidelines that are associated with land designations. In addition, there is an Environmental Impact Assessment for the local area plan for the PHA. The Spatial

⁵¹ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

Planning Department has the vision for urban agriculture over PHA and there are interesting initiatives, strategies and designs on this area that will go to the council in next months (October 2012).

Spatial Planning Department is doing some researches that have been supporting arguments to protect the PHA. They are working strategically in PHA that is considered an area in risk because of the housing development applications. A lot of interests from the private sector and Housing Department have been taken place over the 3.000 hectares of urban agriculture land. The Spatial Planning Department has recommended to the city not to change the urban edge for housing development in this area and preserve the urban agriculture vocation; there is a lot of interests in keeping the urban agriculture and maintain in the long term because they will empower sort of the poor areas and the poor regions. Besides, the department has identified new development areas for housing in order to avoid using the very productive PHA.

For district planning is an achievement that the new SDF includes urban agriculture and for first time specific plan for PHA finally has been approved in 2012. The specific guidelines to project the PHA related to activities that are desirable have been set up. It means that the land use planning has a tool to inform the decision over this area.

The Department also aims to demonstrate urban and landscape policy and principles through design, facilitation and implementation of strategic capital programmes and projects, and frequent qualitative input into land use and building development applications made to the City.

Future role and responsibilities in the integration of urban agriculture into the spatial planning

This department should be in charge of providing spatial planning and urban design frameworks, policies and guidelines, as well as on-going strategic advice and monitoring to assist in urban agriculture implementation.

The five main responsibilities in the integration process are: First of all, to interact and cooperate with the other departments to join efforts and develop strategies to protect urban agriculture areas and to foster its implementation.

Secondly, to develop a common agreement with the Urban Agriculture Unit in regards to the proper definition about urban agriculture per se; including all the components on it; in special animal husbandry.

Thirdly, to continue working with the Urban Agriculture Unit in identifying land for urban agriculture purposes according with the criteria set up by the UAU.

Fourthly, to include in the SDF a set of criteria for implementing urban agriculture in public open spaces using the most appropriate planning tools. In this way plenty vacant plots and many public open spaces that are suitable for urban agriculture can be used or designated to implement urban agricultural activity on them; even as a temporary way. The core idea is that through some planning tools access to land for urban agriculture purposes becomes a reality for many urban farmers that want to grow their own food and require a land opportunity within the city.

Finally, to develop a set of criteria based on sustainable indicators in order to assess urban agriculture as a tool for decision making process and increase financial resources for these purposes. In general this department should recommend urban agriculture for development applications to foster sustainable initiatives in Cape Town based on reliable data, assessments, strategies and planning tools.

Land Use Management Department; Planning and Building Development Management

This department has included urban agriculture into the zoning scheme regulations; it means that urban agriculture is listed as a primary use which means it is possible to implement as a primary right or as a consent use that implies to apply to council because it requires a specific assessment and determine the impacts. It is expected that the new version of zoning

schemes urban agriculture will be consider as a land use. This department is promoting mainly urban agriculture in public open space and housing areas. However there are some complex contradictions in terms of definitions and implementation process that should be corrected in the next version.

This department regulates land use; as well as building development in Cape Town, in order to create an effective and efficient urban environment. Through administering its zoning scheme, the Land Use Management section ensure that all land in the city is used only according to its permitted land-use rights, and considers applications by applicants to change permitted land-uses, zoning rights and their accompanying restrictions (CoCT 2012). Land Use Management uses as its primary tool the Zoning Scheme, together with the relevant policy framework and in line with legislative requirements. This Department delivers its functions and services through a network of eight decentralised District Offices.

The main responsibilities of Land Use Management department are focused on Pre-application advice to residents, consultants and developers about land use management issues and application procedures; processing and facilitating applications for rezoning, subdivision, zoning scheme departures and amendments, removal of title deed restrictions, etc; enforcement of planning and land use management related legislation and zoning scheme regulations; issuing of zoning certificates (CoCT 2012). The Building Development Management section is therefore responsible for checking and approving all building plans, as well as inspecting building work during construction to ensure compliance with the approved plans and related regulations (CoCT 2012).

This department is in charge of producing digital information through The Geographic Information System (GIS) that maintains layers of spatial data and property information; the software that tracks and monitors the processing of building plans and land use applications, as well as complaints and contraventions. However, for urban agriculture

there is not updated mapping which informs the scale of this activity in the city.

Although urban agriculture has been included into this important planning tool the zoning schemes, there are some issues that are affecting its implementation such as the lack of zonification per district, lack of land designation. In fact, there is not any department that manages the applications for land for urban agriculture; this department does not deal with any connection at this stage; this function should be leader by this department.

According to the zoning schemes it is possible to promote and implement urban agriculture in public open space but there are some activities associated with urban agriculture which are generating some serious limitations. If some urban farmers want to have an agricultural facility in the open public space, they will have to apply in the city for consent. There is not integration between public open spaces and agricultural from the land use perspective. This situation is not facilitating the implementation.

Future role and responsibilities in the integration of urban agriculture into the spatial planning

The main functions of this department in the integration of urban agriculture into the land use management are focused on give the proper recognition to urban agriculture as land use with zonification and land designation according to the guidelines established in conjunction with the urban Agriculture Unit.

Other important responsibilities are to establish proper criteria for implementing urban agriculture in public space and housing development projects in order to booster this sustainable initiative; clarifying how to use vacant plots temporary and public open space areas surrounding infrastructure or public facilities.

Finally, to generate digital mapping information through the Geographic Information System regarding urban agriculture areas as a tool for decision making process and for measuring its current and future development, impacts and permanent assessments.

Property Management Department

Property Management Department is assisting economic development and social development in rolling some of the projects in city land. However, urban agriculture has not been considered for land designation due to the lack of criteria for allocating land for urban agriculture.

Property Management Department is in charge of deciding the administration of the land based on the applications, needs, criteria and circulations that provide faculties to this department to formally proceed on the use of land. The main role is to lease all municipal land. In some cases they support departments for acquiring and buying land. For example, they are buying land for roads, water reservoirs.

This department manages the city's properties and assets and gets various lands for parks, water, electricity purposes. When these departments do not need this land anymore, the land goes back to Property Management Department. So, this department will put the property into the market. There are other kind of lands that come to this department for various reasons; they manage the land, making it available for projects to support the city's Integrated Development Plan⁵².

There is a very interactive relationship with this department and all official departments because they are buying land for city development; in this line, all the departments have to be involved in that decision. The environmental Department makes inputs based on the Environmental impact Assessment for acquiring the property. When the department sells properties, the Environmental Department goes for the same process looking at the rights being in place.

This department has not had a strong relation with the Urban Agriculture Unit until moment. The two departments are trying to deal with urban agriculture in the urban environment.

However, Property Management has as main priority housing development.

The UAU has already set up some criteria for identifying land for urban agriculture but the Property management has not been informed about these criteria yet (October 2012); in order to allocate some projects. If this department has the criteria to evaluate land availability, it will look for land designation and the will assess on the whole process.

Future role and responsibilities in the integration of urban agriculture into the spatial planning

The main responsibility is to make easier get access to land for implementing urban agriculture. They should reserve land for urban agriculture according to the criteria set up by the Urban Agriculture Unit following the protocols established by the department; as well as considering land lease in temporary vacant plots located in public open areas already reserved by other departments and the promotion of housing development that includes urban agriculture projects.

Environmental Department

Urban agriculture is included into the Environmental Capacity Building, Sustainable Livelihoods branch which aim to promote environmentally sustainable behavior and lifestyle changes and thereby improve the state of the environment in Cape Town (CoCT 2012). Working with a range of City line functions and external partners, and ensuring integration, the branch undertakes environmental education, capacity building, training, environment-based sustainable livelihoods, greening the city and community outreach programmes.

Environmental Resource Management Department is tasked with leading the implementation of the City's Integrated Metropolitan Environmental Policy and framework of strategies and programmes for environmental sustainability. The main functions of this department are divided into biodiversity management, environmental heritage management, environmental capacity building, sustainable livelihoods and communications, environmental management systems,

⁵² In interview with Development Manager Andre Human, administered by Gloria Gaviria, on October 22nd 2012 (Annex 07)

environmental strategy and partnerships, Major programmes and projects, Resource conservation, Support services (CoCT 2012).

Another branch that should be directly connected to urban agriculture is Environmental Management Systems which undertakes the procedures of Integrated Environmental Management (EIA). This one contains the philosophy and procedures regulated by law for ensuring that the environmental consequences of an action are considered at each of the planning, decision-making, implementation and monitoring stages of a policy, plan, programme or project (CoCT 2012). The National Environmental Management Act (NEMA) 108 of 1998 contains principles for sustainable development and established the procedures that must be followed in each stage of the IEM process.

The key functions of this department are in terms of environmental review, management systems and information systems; none of these functions are currently working in favor of urban agriculture. The first function is related to Environmental Impact Assessment that provides input to the development of project proposals in order to ensure that they comply with legislative and policy requirements. The second one audits protocol that assists relevant service units and staff to comply with conditions of approval and to improve the environmental management component of their overall management systems and the third one provides the City's environmental information in digital format regarding biodiversity, vegetation, protected areas, soils, heritage resources and wetlands.

Future role and responsibilities in the integration of urban agriculture into the spatial planning

The functions that are expected from this department are: 1. Collaborate with the Environmental Impact Assessment process in all the urban agriculture projects. 2. To provide inputs, comments and perspectives to the urban agriculture policy in the environmental component. 3. To monitor urban agriculture projects in order to regulate projects that might impact the environment (pollution of biodiversity

areas, rivers or convert the garden areas into dumping areas).

City Parks Department

This department is in charge of managing the city's parks, cemeteries, greenbelts, road amenities, street trees and many other public open spaces, while conserving, enhancing and developing them for present and future generations (CoCT 2012).

The main role of this department is focused on interacting with the Urban Agriculture Unit and the Spatial Planning Department in order to identify land for urban agriculture in public open space. The core idea with this process is to improve the criteria for land requirements and allocate urban agriculture in the proper areas. When there are some applications for urban agriculture in land areas that belongs to the City parks Department, they analyze the viability of this implementation and make comments on possible impacts on these areas⁵³.

Future role and responsibilities in the integration of urban agriculture into the spatial planning

To facilitate the process to get access to land in public open spaces in order to implement urban agriculture projects.

1. To identify land in public open areas suitable for implementing urban agriculture and enabling the use of these areas permanently or temporarily. 2. To collaborate with comments and perspectives to the urban agriculture policy in aspects related with public open spaces and the criteria to implement urban agriculture in these areas. 3. To protect urban agriculture projects located in the public open space network to preserve its sustainable vocation.

Provincial Department of Agriculture

This department stimulates economic growth in the province as well as playing a major role in creating sustainable job opportunities. The support of this Department to the Urban Agriculture Unit is important in terms of

⁵³ Information provided by Bradley Burger, Co-ordinator: Planning and Development, City Parks Department, City of Cape Town, in interview administered by Gloria Gaviria, on October 22th 2012 (Annex 06)

financial resources and in some strategies to cope food insecurity in Cape Town.

The Agriculture Department provides a wide range of development, research and support services to the agricultural community in the Western Cape. This department accommodates new and commercial farmers at research farms, further education and training centres, extension offices, Conservation of natural resources, Agricultural engineering services, Analytical services at our plant pathology and water and soil laboratories, Diagnostic and analytical services at veterinary laboratories and animal health technicians situated throughout the province. The department's service area covers approximately 13 million hectares, of which 2 million hectares are under cultivation and 320.000 hectares are under irrigation.

This provincial department recognizes that poverty and food insecurity are closely linked in Cape Town. For this reason, they are working in conjunction with the urban Agriculture Unit on a set of strategies to tackle the main challenges that are affecting the city and are impacting urban agriculture such as high food vulnerability at household level in urban areas, high ecological footprint; lack of access to land for food production, non-affordable water for irrigation, lack of access to finance, theft and vandalism of crop production, urban gardens as dumping areas, lack of commitment of some urban farmers to preserve their urban farming projects (Sebopetsa, 2011). All these strategies are reflected on the urban agriculture policy.

Future role and responsibilities in the integration of urban agriculture into the spatial planning

The permanent support in policy formulation, ongoing extension programmes to the all members in the Urban Agriculture Unit and stakeholders involved; in topics related to food security, agriculture advances, management, low tech and high tech, policies, eco-efficiency among others.

To increase financial and human resources to the Urban agriculture Unit is urgently needed, in this way they can be more proactive and offer real support to urban farmers; as well as being actively engage in urban agriculture activities

and set up the Urban Agriculture Resources Centers in all districts in Cape Town. It is important to support the assessment process to urban agriculture in order to collect reliable data for decision making process.

6.3 Academic Sector

The academy in Cape Town is playing an important role in the integration of urban agriculture into the spatial planning and policy formulation. Although the current data about urban agriculture is not enough, they are working on producing reliable data on urban food security issues in which the main intention is to influence current and future policy makers and implementers in the way of thinking about urban agriculture and the way to respond efficiently to some challenges based on locally produced and relevant research information. In fact, they are documenting relevant cases that combine food security issues and urban agriculture in South African cities.

The academics are working on gathering and analyzing the information in order to find out the gaps and contribute with the discussions and debate around food insecurity in the city; and influence directly in decision making process and policy formulation on food security and urban agriculture. Basically, the academics argue in favor of creating wider perspective of urban agriculture; as well as identifying the role that this one is playing on food systems which have the potential to work as a strategy to reconnect people in Cape Town.

The biggest debate of tackling food insecurity with urban agriculture as a survival strategy is taking place in Cape Town. Urban agriculture is viewed by academics and city strategists as a part of the solution, but not necessarily central to overcoming urban food insecurity. Urban agriculture is often included as a part of city strategies to address food insecurity, but more components are needed from the policy formulation and spatial planning perspective (London Development Agency 2006, Toronto Public Health 2010 cited in Battersby 2012).

The conflation of urban agriculture with urban food security is highly prevalent in the NGO sector. And, as in keeping with the tradition of

the Development NGO sector, research and activism around urban agriculture has a deeply 'worthy' characterization. There are new connections developed by The Sustainability Institute at Stellenbosch University in South Africa; they have sought to connect the potential environment benefits of urban agriculture to broader structural issues driving the food system (Swilling 2006 and Schulschenk 2010 cited in Battersby 2012).

Broader conceptualisation about urban agriculture is needed to localise the food system, and to increase availability of fresh fruit and vegetables to poor city's areas. Besides, with further analysis it will be possible to identify land availability and water provision for urban gardens as well as overcoming the most serious challenges that urban farmers are confronting.

Count with reliable data from academics and researchers is important to urban planners and policy makers in order to consider multiple approaches to formulate strategies that ensure access to safe, nutritious and culturally appropriate food to all sectors of the city. In addition, it will enable to generate efficient strategies in terms of health services, nutrition education, improved public transport and local food markets; as well as identify the main issues and challenges regarding urban agriculture and food security.

Role and Responsibilities

The main academy's role in integrating urban agriculture in the spatial planning is divided mainly into three aspects: documentation, public discussion and in offering formal training. They been have documenting food security and urban agriculture, contributing to the public debate among stakeholders involved and providing training to policy makers, urban planners, NGOs, CBOs in topics related to food security, urban agriculture, policy environments and regulatory and legal obstacles to enhanced urban food security; developing gender and environmentally-sensitive food security plans among others.

The African Food Security Urban Network (AFSUN) with their South Africa partners have

identified large gaps in the common knowledge and understanding of the dimensions of urban food insecurity, its causes, consequences and implications for the growing numbers of urban poor and the influences of urban agriculture in tackling this important issue. At the same time, AFSUN is fostering regional and international co-operation which ensures that a regional picture of urban food security begins to emerge and also allows for cross-city comparisons (AFSUN 2012).

In conjunction with the University of Cape Town in the department of Urban Food Security and Contemporary Challenges and University of Stellenbosch in the Sustainability Institute; AFSUN has been working on interesting researches that have contributed to build up the evidences of food insecurity in Cape Town among urban poor and the current problematic that they are confronting as well as clarifying the strategies to cope this issues such as urban agriculture and the role of polices on it.

The AFSUN is actively engage in documenting food security in South African cities since 2009. The AFSUN partners have presented findings around food insecurity to academics, governments, NGOs and the general public. The main solutions to tackle this complex issue in Cape Town always are based on urban agriculture and the capability that urban poor have to grow their own food (Battersby 2012). Battersby further argues that although there is considerable interest in food security it is all directed to supporting small-scale agriculture, and if there is an urban focus, it is only interested in urban agriculture as whole instead to look at it as an important component of the food systems.

On one hand, AFSUN's has a research platform that is designed to proceed in logical stages from identification of the data gaps, formulation of research questions, development of appropriate methodologies and implementation. On the other hand, AFSUN focuses on capacitating civil society change agents (non-governmental organizations, community based organizations, civil society organizations, faith-based organizations, cultural associations, cooperatives) to plan, develop, monitor, and

evaluate programs the city has in order to reduce vulnerability to food insecurity amongst the urban poor (AFSUN 2012).

Currently, they are working in topics related to create basis for food security policy formulation. One of the main topics that they are working on is to extent of urban agriculture and obstacles to increasing urban agriculture; impacts of food aid on urban households; case studies of extent and impact of key food security modalities such as school feeding schemes, land access, social grants; environmental constraints on urban food security and the dynamics of environmental vulnerability for urban food security.

Another important contribution made by academics through the research is the influence of policy formulation in terms of urban agriculture and food security. For instance, the AFSUN intends to influence national and municipal policy affecting food security in four ways: 1. through lobbying and advocacy interventions into the existing food security, HIV/AIDS, environment (built and natural) and urban poverty networks. 2. through local interactions. The design of both research and networking in each city is intended to influence the local city agenda, bring stakeholders together and raise the profile of urban food security and HIV issues. 3. Capacity building and training with a group of urban food security specialists involving in policy engagement. 4. By producing reliable data on urban food security issues the intention is to influence how current and future policy makers and implementers think about and respond to the issue based on locally produced and relevant research information (AFSUN 2012).

During the last two years professor Battersby has been distinguished as the most relevant researcher in food system and the identification of urban agriculture as a food system's component. In fact, professor Battersby asserts that while the right to food and food insecurity are gaining increased public political presence, existing policy responses have significant gaps. The 'face of food insecurity' is increasingly urban and the food security policies lack an explicitly urban focus, leaving cities with no mandate to address food insecurity and the

wider perspective in urban food system and one core component: urban agriculture (Battersby 2012).

The unique formal study related to food insecurity and the role of urban agriculture based on three sample areas in Cape Town was conducted by Professor Battersby and supported by the University of Cape Town and AFSUN. This important study clarify the reality; few poor households in Cape Town are involved in urban agriculture as an element of their livelihood strategies; "only 5% households obtain food by growing it themselves" (Battersby 2011, p. 30). Professor Battersby during interview asserts that 5% in producing food at household level is quite low if we look at the effort that people put into produce it⁵⁴.

The main causes why urban agriculture has a low percentage in Cape Town according to the research findings are: First of all, the negative perception about urban agriculture from people that moves from rural to urban areas to the city: "they will not do urban agriculture because they used to farm in the rural area". The second biggest problem is getting access to land. Third, even though the city is trying to open access to land with the urban agriculture policy and also access to inputs, there are some issues related to cost that do not enable to formalize that accessibility. Fourth, it is a complex issue to make the gardens work to urban farmers, they have to confront complex stumbling blocks such as access to land, water affordability, training among others; essentially they have to look for the support of NGOs to start up a garden. For this reason, some people do not want to struggle with difficulties and they consider that sometimes is cheaper to buy food than to grow their own food.

Other interesting discussions from academics around urban agriculture in Cape Town are related to the question if people want to do urban agriculture for their own food or for business; sometimes policy makers do not understand the difference between subsistence

⁵⁴ In interview with Professor Jane Battersby Lennard, administered by Gloria Gaviria, on October 23rd 2012 (Annex 16)

and commercial. The urban agriculture policy is trying to solve a food, unemployment and poverty issues instead being a component of a strategic food system⁵⁵ that includes all the perspectives. Besides, the lack of food policy in Cape Town generates that food insecurity in urban areas has been not triggered by absolute food shortages, but by failures of households to be able to access food (Battersby 2012).

The academics should establish common efforts with the governmental perspective and make research on topics that can contribute to formulate policies and strategies. Professor Battersby said sometimes academics do not do practical job. There is a lot of work of counting and assessing on the ground without understanding what people want to do or do not want to do and which programmes respond to those needs. There is a disconnection and sometimes community has very lovely ideas; maybe is the time that more academics go more time to the field understanding those⁵⁶.

The future responsibilities in the integration of urban agriculture in the spatial planning

The weaknesses in the current construction of urban agriculture in the city are based on the lack of sufficient data and evidence from the main stakeholders involved. There is an urgent need to document the main information about urban farming movement in the city, conduct some sustainable surveys and brings to the debate current challenges as a strategy for urban planners and policy makers; first hand information as a strategy for decision making towards to build up a more sustainable city.

The main role of academy in the future integration is divided mainly in three aspects: documentation, public discussion and formal training. They have to continue documenting food security and urban agriculture make an alliance with the local government in order to gather more formal data in regards to urban agriculture as a tool for decision making. The universities can play a role in connecting the activities, the institution with civil society

⁵⁵ See Annex 16

⁵⁶ n interview with Professor Jane Battersby Lennard, administered by Gloria Gaviria, on October 23rd 2012 (Annex 16)

and with government. Generate public debate in regards to main challenges, policy gaps; as well as actively participation in policy formulation, comments and perspective that contribute to the urban food production discussion.

A fundamental role of academy is to provide formal courses to urban planners and policy makers in regards to food security and urban agriculture; as well as providing formal training to urban farmers in food security, nutrition, practical skills development, agri-bussiness, agri-planning among others.

As was mentioned academics are playing an important role in the integration of urban agriculture into the spatial planning and policy framework; documenting issues that closely linked to food insecurity and urban agriculture. They are fostering the important debate of the main gaps between policy formulation and implementation. Besides, they are disseminating this information through policy working papers and other publications and reports, the project broadsheet, community radio programming, policy workshops and conferences, and academic websites in order to contribute with the public discussion around urban agriculture and its role in food systems.

6.4 Private Sector

Philippi Economic Development Initiative

Private Sector is playing the role of the economic vision of urban agriculture with the commercial component. They are supporting programmes and projects in order to facilitate job creation and reduce poverty, foster economic empowerment and entrepreneurship as well as facilitating training opportunities.

Philippi Economic Development Initiative (PEDI) is the main company that is promoting urban agriculture in Philippi district, working on urban management vision that includes spatial planning, training and skills development, job creation, business and entrepreneurial development opportunities, safety and security Improvement Statistics (See figure No.41).

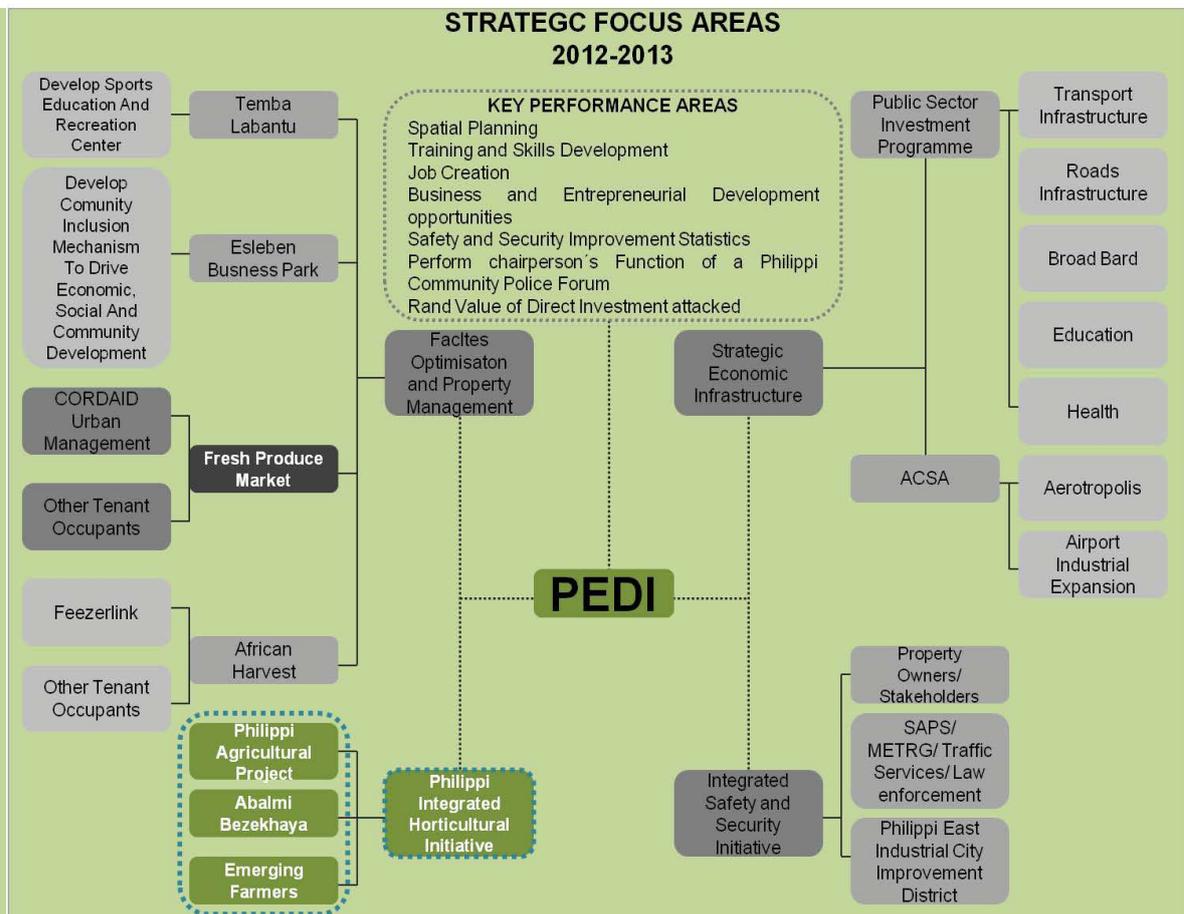
This organization came into being in 1998 as a Section 21 Company by the City of Cape Town in partnership with the Western Cape Provincial

Government, businesses and the community to promote economic growth and development in the Philippi Industrial area (Swana 2010). PEDI is promoting and facilitating economic growth, working together in partnership on strategies and programmes to tackle the major problems in Philippi district such as access to services and crime reduction; through the promotion of education in business capacity and ensuring increased investment; leading to the opening of new factories and businesses, providing the local communities with increased job opportunities.

Role and Responsibilities

PEDI is playing a vital role in developing new farmers. The economic vision of PEDI is based on creating urban farmers with commercial vocation. The urban agriculture project in Philippi that is promoted by PEDI is an Agricultural Resource and Training Centre designed with the objective to eradicate poverty through training unemployed people, who have an interest in farming activities and to become urban farmer. This training will enable them to run their own urban gardens and enjoy the rewards of their own work (swana 2010).

Figure No.41 Strategic Focus Areas, Philippi Economic Development Initiative, Source: PEDI 2012.



Currently, they are facilitating access to the unique "Fresh produce market" located in Philippi area in Cape Flats District which is working in low capacity due to the lack of enough financial resources (See figure No.42). They intend to serve local emerging urban farmers and provide training on site to junior urban farmers. On one hand, the training center has the capacity to train 100 people per year. On the other hand, the market has the capacity to processing and packing vegetables, chilling and cold storage facility. This market has a strategic location near N2 highway which ensures easy access for shipping the products to the city center⁵⁷.



⁵⁷ Information provided by Thomas Swana, Chief Executive Officer of Philippi Economic Development Initiative, in interview administered by Gloria Gaviria, on October 25th 2012 (Annex 18)

Figure No.42 Philippi Fresh Product Market, Philippi Economic Development Initiative; Photographies: Gloria Gaviria, Cape Town, Philippi St, 26th October 2012.

Philippi Agricultural Project has 2.8 hectares under crop and a group of 14 women and 3 men in the program that is being run in conjunction with the Department of Agriculture and Elsenberg Agricultural College in private open space (See figure No.43). In addition, PEDI is promoting the eco-friendly and socially responsible component with a Biogas plant that is located in the urban garden area. The project provides gas, from the fermentation of cow manure in specially designed, low tech tanks that produce sufficient Biogas to easily meet the requirements of the farm. Extra Biogas is sold to residents of the nearby informal settlement. Biogas can be used to provide fuel for cooking, lighting and heating as well as electricity, via a specially designed generator (PEDI 2010).



Figure No.43 Philippi Agricultural Project, Philippi Economic Development Initiative; Photographies: Gloria Gaviria, Cape Town, Philippi St, 26th October 2012.

From the organization perspective, they are thinking to implement a large project in Philippi area with the support of Netherland's government. This project is composed by 2 hectares with 40 tunnels; with a value of 5,000.000 Rands (PEDI 2012). The land that they are intending to use is public open areas under the private responsibility. This area has agricultural significant value and some urban agriculture projects are currently located on an area called Philippi Hoticultural Area.

The future responsibilities in the integration of urban agriculture in the spatial planning

Continue developing the urban management vision with the economic and training component. They should make alliances with

NGOs and local government in order to foster the urban agriculture in Philippi Fresh Produce Market that has the capacity to process all the vegetables produced by urban farmers; ensuring good standards of quality and constant production.

To develop and promote sustainable economic opportunity in Philippi and its surrounding areas and to uplift the local businesses and residents. Continue supporting community in training process in Agri-business but including the social, health and cultural development of all urban farmers and their families in order to build up sustainable communities.

Contribute to reconnect city through developing the food system in conjunction with NGOs, local government and urban farmers as well as participating in the multi-stakeholders forums, making comments about the main challenges and general contributions to the urban agriculture policy from the economic perspective and promoting the urban planning workshops to debate visions around Philippi area.

The impact of private sector in urban agriculture is base on the economic vision. PEDI is playing the major commercial role in Philippi area; with interesting projections to be a food system that can embrace the whole city and look for export strategies.

6.5 Community Level

Community is playing the major role in implementing urban agriculture through being supported by NGOs and private sector. Although there are many issues surrounding the implementation of urban gardens in public open areas, Cape Town has around 3.500 urban farmers working on growing their own food as a livelihood strategy or economic development.

Mainly, women are engaged in vegetable gardening in home and community gardens in order to supplement their diet, improve household food and nutritional security, and provide sustainable additional income. The average age of producers tend to be older over 40 years. There are more women than men because women play key role in the community and need to feed their children. There are many

single households that are women that are taking care of all the children and men have to move to do something else. Most of the cases women are the source provider for the whole family. However, men have seen the opportunities for making a decent, dignified and sustainable living out of urban farming and some of them have decided to get involved.

The youth engagement is very low. The new version of urban agriculture policy is coming up with a special programme to involve these communities in sustainable initiatives. Most of young communities are influenced by American behavior in which urban agriculture is not included. However, there are some schools participating in community gardens and there are some children actively engage on urban farming.

NGOs assert that if people apply the knowledge learned with them, they will never be short of food and never have the children hungry. They further argue that if community applies the skills during one or two seasons, they will never forget to do farming for the rest of their life. In addition, community can apply to more training regarding agribusiness in order to increase their earnings; if they learn how to grow food and earn profit, they will have a different world game in Cape Town.

On one hand, community members interested in learning about urban agriculture for survival or commercial reasons are receiving the tools in their hands such as skills capacity, education, and training from NGOs. However, most of them are struggling with one of the main challenges in urban agriculture in Cape Town; they do not have access to land for implementing their own initiatives and water is not affordable.

On the other hand, some projects have failed because there is lack of commitment from community members who were involving in urban farming activities. Most of them are looking for better opportunities to survive in this apartheid economy; and urban agriculture is introducing in their environments as an economy viability to improve their living situation. Farming in Cape Town is not necessarily cheap, and they required the support

from local government, NGOs or private sector to make their projects successful. When the support is on the place and there is the proper social engagement; then, something more is needed, a good leader who drives the process and ensures the permanent commitment of group members. The role of Community based Organizations is important to create awareness and support.

There are cultural complexities; there are some jealousies from people who are not success or not doing well and that leads to a lot of destructive behavior⁵⁸. It is important to manage this aspect carefully and build group dynamics. Local government has to figure out how to build up people to think about each other and the responsibility.

This garden located in Kayelitsha is a good example how some urban farmers have created one of the most successful gardens in public open space with the support of Abalimi and Kayelitsha High School (See figure No.44). Big mamas who are working in this garden saw in urban farming an opportunity for feeding their families, have a job and improve their economies.



Figure No.44 Kayelitsha Garden, Harvest and hydroponics, in front of High School in Kayelitsha; Photographies: Gloria Gavia, Cape Town, Kayelitsha, 18th October 2012.

⁵⁸ In interview with Social Anthropologist and Psychologist Louise Vaughn, administered by Gloria Gavia, on October 12th 2012 (Annex 13)

This garden is located in public open space area in front of the High School. There are some students involved in this garden, developing scientific research and assisting the big mamas in urban farming activities. The students with schools' support have designed and implemented the biogas plant that is feed with organic material, the location of water tanks and the hydroponics (See figure No.45 and 46).

prioritize urban agriculture. It is important to take into account environmental considerations a climate change conditions and go in favor of sustainable alternatives for the future development of the city.

After explaining and analyzing all the stakeholders involved in urban agriculture, as well as identifying the new crucial responsibilities in the integration and implementation of urban agriculture into the spatial planning and land use management (See table No.10); it is expected that NGOs, official departments, academy, private sector and community join efforts in a multi stakeholder participation process in order to build up together the new sustainable vision of urban agriculture into the spatial planning and legal framework in favor of its comprehensive implementation.



Figure No.45 Kayelitsha Garden, Biogas plant and kitchen, in front of High School in Kayelitsha: Gloria Gaviria, Cape Town, Kayelitsha, 18th October 2012.

Although this community is struggling with climate change conditions, water affordability, they are receiving ongoing extension and subsidies for compost, seeds and seedlings from Abalimi. Besides, 80 percent of the products go to the Harvest of Hope packshed and 20 per cent of the products go to feed their families.

Figure No.46 Kayelitsha Garden, Water supply and Carrot Harvest, in front of High School in Kayelitsha; Photographies: Gloria Gaviria, Cape Town, Kayelitsha, 18th October 2012.

In conclusion, food security is a big issue in Cape Town. The City needs to have more presence from the governmental perspective in the implementation process. As far as the city concerns, there is not a good leader for urban agriculture. Various cities around the world

ROLE	FUTURE RESPONSABILITIES IN THE INTEGRATION AND IMPLEMENTATION PROCESS
Non Governmental Organisation	
Abalimi Bezekhaya	
<ul style="list-style-type: none"> • Assisting community and School gardens • Food system model • Agribusiness • Agri-planning • Project implementation: Planning, implementation and support for community projects. • Agricultural and horticultural commodities • Training • Organisation building • Facilitation of partnerships • Research, planning monitoring and evaluation • Financial and organisational sustainability for Abalimi 	<ul style="list-style-type: none"> • Multi-stakeholders' participation. • To build the urban agriculture policy • Participation in consultative forums • Assisting the Urban Agriculture Unit • Organizing voluntary micro-associations • To teach the model about access to land • Job creation
Soil for Life	
<ul style="list-style-type: none"> • Assisting home gardens • Providing education • Training • Follow ups • Garden programmes • Build the soil 	<ul style="list-style-type: none"> • Multi-stakeholders' participation. • To build the urban agriculture policy • Participation in consultative forums • Assisting the Urban Agriculture Unit
Institutional Sector	
Economic and Human Development: Urban Agriculture Unit	
<ul style="list-style-type: none"> • Inclusion of UA into city's development strategies • Policy formulation 	<ul style="list-style-type: none"> • Implementing the urban agriculture policy • Implementing urban

<ul style="list-style-type: none"> • Holding summits 	<p>agriculture resources centers</p> <ul style="list-style-type: none"> • Ongoing extension • Offering advice permanently • Assistance with access to land, provision of seeds, compost and water, infrastructure such as fencing, containers and irrigation supply, tools such as rakes, spades and water pumps • Skills training • Evaluation and monitoring • Alliances with stakeholders involved • Implementing sustainable assessment to urban agriculture as a tool for decision making and increase financial resources
Spatial Planning and Urban Design Department	
<ul style="list-style-type: none"> • Planning tool: Spatial Development Framework (SDF) • Integration urban agriculture into the SDF • Developing strategies to protect urban agriculture land of significant value • Policy formulation • Identifying suitable land for urban agriculture 	<ul style="list-style-type: none"> • Zonification for urban agriculture per district • Assisting in implementation process • Interacting and cooperating with the other departments • Establishing a common definition about urban agriculture with the other departments: to include animal husbandry • Promoting the implementation of urban agriculture in public open spaces, vacant plots and new housing

	<ul style="list-style-type: none"> development projects Developing criteria for assessing urban agriculture (sustainable indicators) as a tool for decision making process
Land Use Management Department; Planning and Building Development Management	
<ul style="list-style-type: none"> Planning tool: Zoning Scheme Regulations Integration urban agriculture into the zoning scheme regulations 	<ul style="list-style-type: none"> Recognition of urban agriculture as land use Zonification of urban agriculture per district Digital mapping of urban agriculture as a decision making tool (GIS) Setting up criteria for implementing urban agriculture in public open space and housing development and public facilities
Property Management Department	
<ul style="list-style-type: none"> Land negotiations 	<ul style="list-style-type: none"> Making easier get access to land for implementing urban agriculture Reserving land for urban agriculture according to the criteria set up by the Urban Agriculture Unit Considering land lease in temporary vacant plots located in public open areas
Environmental Department	
<ul style="list-style-type: none"> Conducting Environmental Impact Assessment process only in projects with large dimension 	<ul style="list-style-type: none"> Collaborating with the Environmental Impact Assessment process To provide inputs, comments and perspectives to the urban agriculture

	<ul style="list-style-type: none"> policy in the environmental component To monitor urban agriculture projects
City Parks	
<ul style="list-style-type: none"> Identifying public open spaces suitable for urban agriculture Analyzing the viability of the project's implementation 	<ul style="list-style-type: none"> Facilitating access to land: public open spaces Identifying public open spaces suitable for urban agriculture To build the urban agriculture policy To protect urban agriculture projects on the public open space network
Provincial Department of Agriculture	
<ul style="list-style-type: none"> Economic growth Job opportunities Strategies to tackle food security and urban agriculture challenges 	<ul style="list-style-type: none"> Ongoing extension programmes increasing human and financial resources to the Urban Agriculture Unit Supporting the assessment process To build the urban agriculture policy
Academic Sector	
<ul style="list-style-type: none"> African Food Security Urban Network University of Cape Town: Urban Food Security and Contemporary Challenges University of Stellenbosch: Sustainability Institute 	
<ul style="list-style-type: none"> Documenting food security and urban agriculture public discussion offering formal training Providing reliable data Gathering and analyzing information Identifying gaps between policies and implementation Influencing policy makers and urban planners in decision making 	<ul style="list-style-type: none"> Broader conceptualization about urban agriculture Integration of urban agriculture into food systems concept Build the urban agriculture policy Public debate on food insecurity and gaps in urban agriculture matters Influencing policy makers and urban

	planners in decision making
Private Sector	
Philippi Economic Development Initiative	
<ul style="list-style-type: none"> • Economic vision • Training • Job creation • Micro farming • Agribusiness • Food System 	<ul style="list-style-type: none"> • Multi- stakeholders' participation. • Build the urban agriculture policy • Participation in Consultative forums • Assisting the Urban Agriculture Unit
Community	
Urban Farmers	
Implementation Actively engagement	<ul style="list-style-type: none"> • Multi- stakeholders' participation. • Build the urban agriculture policy • Participation in consultative forums

Table No.12 Role of Stakeholders involved and Future Responsibilities in the integration of urban agriculture in the spatial planning and Land Use Management in Cape Town, Source: Designed by the author.

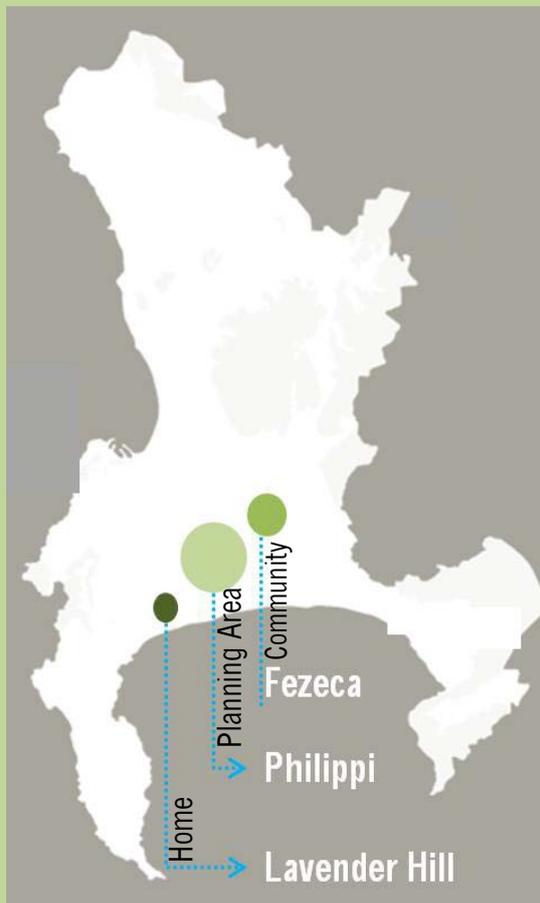
CASE STUDIES:

Sustainable Assessment of Urban Agriculture in Public Open Space and Urban Planning Vision

Cape Flats



7. CASE STUDIES: Sustainable Assessment of Urban Agriculture in Public Open Space and Urban Planning Vision



Three case studies are analysed in this chapter from the sustainable perspective and urban planning vision. Home gardens, community garden and large scale urban farming area were selected based on their location on public open space, the proper support from NGOs or private sector, bottom up approach and the consideration as a land of significant value with spatial planning intervention. All these urban gardens are located in Cape Flats District which represents the city created during the apartheid; giving space to social and spatial fragmentation. The factors that will be taken into consideration in this analysis are: location area, access to land, access to infrastructure (water, materials), technical support, training, the process of launching, follow up, shortcomings and main benefits, as well as projects' assessment based on sustainable urban farming indicators.

The information collected through the sustainable indicators proposed in this research for the urban agriculture assessment in public space seeks to make the process of data collection and analysis accessible to anyone in the urban agriculture community, main governmental departments, NGOs, researchers, etc; in order to inform the condition of already implemented projects at home, school, community and micro farming level. In this particular research process the strength of indicators lies in their selection, which facilitates decision-making process for integrating urban agriculture into strategic planning.

7.1 Selection criteria for case studies

City of Cape Town was selected based on three main criteria. First of all, the inclusion of urban agriculture in the legal framework. Approximately, a few developing cities around the world have provided formal and legal recognition to urban agriculture through policy formulation (UNDP 2007). In South Africa; Cape Town is the only city that has formulated a policy allowing urban agriculture implementation and ongoing extension. It is expected that the new policy's version increases the scope and scale in urban agriculture in Cape Town.

Secondly, the integration of urban agriculture in the spatial planning and land use management. Since 2012, urban agriculture was included into the two major planning tools in Cape Town Spatial Development Framework and Zoning Scheme Regulations. Multi-functional urban agriculture and food systems are a novel issue in spatial planning in developing cities; Cape Town is currently working in this process.

Thirdly, the consideration of urban agriculture as a livelihood strategy. City of Cape Town has an urgent need to generate food security, reduce poverty, overcome unemployment rate and environmental degradation. Urban agriculture is a means to tackle the main issues aforementioned and it is considered as the new sustainable vision of Cape Town.

Criteria for selecting three case studies in Cape Flats District

Urban agriculture in Cape Town is primarily focused on the poorest of the poor within the urban (built) areas (CoCT 2012). The main districts in which urban agriculture is developed by poorest communities are Cape Flats and Mitchells Plan.

The three case studies selected are located in Cape Flats District (Lavender Hill, Fezeca-Gugulethu and Philippi) (See figure No.47). The factors that were taken into consideration for selecting these case studies are: 1. Location in public open space. 2. Proper support by NGOs or private sector, as well as properly driven by local urban farmers. 3. Bottom up approach and 4. Urban agriculture land considered area of significant value with spatial planning intervention.

The three case studies are clear examples of how urban agriculture is a bottom up approach in which people at the grassroots level are working in building up a sustainable city with the support of NGOs within a legal framework that in conjunction with the most important planning tools have evidenced some gaps in the implementation process.

All these sustainable initiatives are seeds that could be seen as potentials for a more just and sustainable city's development. All of these

gardens, in these productive public spaces are seen as starting points that are creating the new visions with implications on a broader scale of urban agriculture in Cape Town.



Figure No.47 Case Studies Location, Cape Flats District Source: Google Earth; 2012.

7.2 Introduction of the case study areas: Cape Flats District

Cape Flats is the landscape that most visitors only pass through on their way from the airport towards the more panoramic parts of Cape Town- the inner city. This is the city created during the apartheid, giving space to social and spatial fragmentation. Currently, Cape Flats is the cradle of urban agriculture, a visionary set of sustainable strategies for reconnecting Cape Town is surrounding all the green productive areas of this district.

Cape flats District is located in the southern part of the City of Cape Town metropolitan area. It is surrounded by a majestic landscape, with the Table Mountain forming its western edge and khayelitsha with the sand dunes its eastern border. It comprises of a significant part of the Cape Flats, the N2 motorway cuts a northern diagonal swath through this seemingly infinite landscape of homes, Lansdowne Road and Weltevreden Road in the east, the False Bay coastline to the south and the M5 in the west. This District covers approximately 13.200 hectares (132 km²) (CoCT 2012) (See figure No.48).

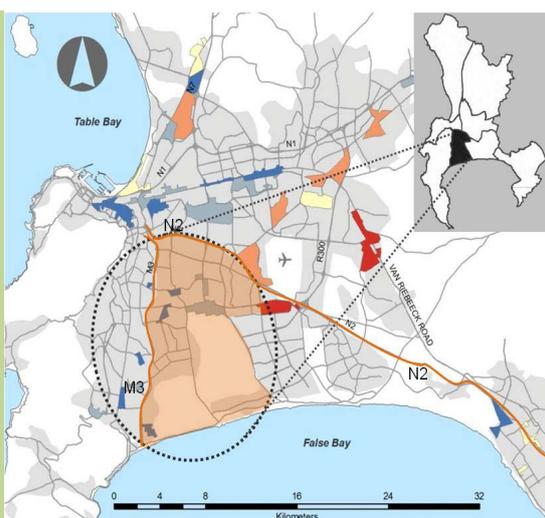


Figure No.48 Cape Flats District, Source: Designed by the author; adapted from CoCT 2012.

Social Component

The district accommodates 15% of the city's population with 550,000 inhabitants; with high unemployment rate (31%). The low percentage of economic property (3.5% - of which commercial properties equal 8.3% and industrial 11.6%) in relation to the rest of the City, means that a large percentage of those people within the district that are employed, have to travel outside the district to access employment, often at great cost (CoCT 2012, p.23). This district has a significant demand for housing, as well as a huge need for upgrading informal settlements, providing social public facilities and creating an integral urban development; in special, areas such as Nyanga, Gugulethu and Lavender Hill (CoCT 2012).

According to CoCT 2012, the district faces a number of social challenges, ranging from levels of health and wellness which are the second worst of all districts within the City, to high crime levels including the second highest percentage of murders in the City. In addition, the district suffers from historic marginalisation in respect of investment in public facilities and services, which has tended to be perpetuated in the poorest residential areas in the district, particularly in the north eastern (Nyanga, Gugulethu, Heideveld, Manenberg) and south western (Lavender Hill, Vrygrond).

Economic Component

Regarding the socio-economic issues; this

district is characterised by predominantly middle to lower income development, both residentially and commercially, including informal economic activity and small business facing space limitations. There are a number of pockets of extremely poor communities within the district. Besides, poorest communities reside in numerous informal settlements scattered across the district, as well as formal areas such as Nyanga, Manenberg, Hanover Park, Lavender Hill and Parkwood (CoCT 2012).

Cape Flats is distinguished by the urban agricultural economy within the district, largely accommodated within the Philippi Horticultural Area (PHA) is under significant threat as a result of a combination of limited land use management, systematic degradation of the rural environment and speculative land banking (CoCT 2012). Within the PHA, there are a number of conflicting economic land uses, namely urban agriculture and horticulture; coexisting alongside illegal service industries, and new housing development, putting pressure on that land. As a result, the core urban farming area is being degraded and the economy is being further undermined.

Environmental component in public open space

The public open space is characterized by the invasion of numerous of informal settlements on these areas; combined with poor residents and high density urban settlement. The lack of active and passive recreational spaces in these areas is a reality affecting all district inhabitants, in special in Nyanga, Gugulethu, Lavender Hill and Manenberg.

Even though there are plenty green areas within the district, there is a poor public open spaces quality; offering few opportunities for people to engage in passive recreational activities close to where they live (See figure No. 49). There are many challenges surrounding the poorly developed open spaces due to the fact that most of them are underdeveloped, promoting insecurity, vandalism, drug trafficking among others especially in Athlone, Pelikan Park, Manenberg, Strandfonteinr (CoCT 2012). In addition, many large natural and open space areas relatively close to employment

opportunities mean high risk of land invasion by urban poor inhabitants.

Illegal dumping areas on open public spaces are downgrading significantly these open land areas within specific parts of the district such as PHA; Nyanga and Gugulethu. Besides, along the district, the aquatic system is mostly polluted; including rivers, as well as the Cape Flats aquifer.

There is an environmental pressure on valuable agricultural land, the case of PHA. This is the major green lung, centrally located within the City (CoCT 2012). It is also a significant productive horticultural area and holds pockets of biodiversity value. On one hand, this area requires protection from urbanisation, and careful management of the land uses and activities thereon and also of their interfaces with urban areas. On the other hand, there is an urgent need to define the urban and coastal edges that means the protection of natural assets and natural resource areas.

by pollution and uncontrolled urban encroachment. The absence of connectivity between wetlands, rivers and surrounding land has had a major impact on biodiversity and the functioning of fresh water eco-systems (Dudley 2012). Cape Flats has a crucial landscape that is in risk of degradation and the connectivity with productive green areas through urban agriculture could be seen as a solution to improve environmental concerns.



Figure No.49 Public Open Space Cape Flats District, Source: CoCT 2012. Photographies: Gloria Gaviria, Cape Town, Nyanga 16th, Lavender Hill 12th, Philippi 18th October 2012.

Apartheid planning has created impoverished communities and neglected landscapes in Cape flats (Palmer et al 2012). Since the apartheid era, not a single green area has been built in this district by the local government. At the same, critical natural areas have been lost or degraded

7.3 Spatial Planning Vision for Urban Agriculture and public space in Cape Flats

In terms of Spatial Planning categories for urban agriculture in this district are divided into two aspects. First of all, the advocacy of agricultural areas which have high-potential and

opportunities; encouraging the creation of new economic opportunities at locations with economic viability (CoCT 2012).

In terms of *build an inclusive, integrated and vibrant City*; the main strategies are focused on encouraging public investment that will be a catalyst to urban regeneration in areas which have historically been marginalised and suffer from a severe lack of public investment in public facilities and services, as well as urban infrastructure. Furthermore, to create public open places where people from across the district can gather, interact, socialise and participate in passive recreation while experiencing things which make the district unique by capitalising on significant untapped opportunities which present themselves in the form of points along the coastline and adjacent to large water bodies and within areas of unique natural value and character (CoCT 2012).

The core ideas for *manage urban growth and create a balance between urban development and environmental protection* are focused on improving public open space system with good quality, proper productivity and functionality, as well as managing the use of open spaces as a dumping ground in Philippi Horticultural Area, Strandfontein, Pelican Park, Nyanga, Gugulethu (CoCT 2012).

The promotion to intensive use of land through implementing urban agriculture. First one, high potential and unique agricultural land worthy of long term protection given unique production, cultural and heritage attributes. Second one, agricultural areas of significant value in which is important the existing use, the potential and emerging agricultural use due to new cultivation technology, availability of irrigation water, new varieties and crop types and food security.

The SDF promotes the inclusion of urban agriculture as a livelihood strategy in this district; recognizing high levels of food insecurity, unemployment rate and poverty. Even though this district has infertile land, NGOs are teaching people how to produce their own food and building the soil. The creation of home and community gardens will generate a positive impact in the area, using public open space

areas, making landscape inclusive and sustainable for the city.

7.4 Home Food Gardens: Lavender Hill

South Africa has one of the highest rates of income inequality in the world. In 2010, 80% of household could not afford a basic nutritional basket (262 Rands per person per month) (EFTE 2011). It means that South Africa has a food security problem. Food insecure is living in hunger or fear of starvation without access to enough nutritious food to live a healthy life (World Food summit 1996).

In Cape Town 77% of households are food insecure, "only 5% households obtain food by growing it themselves" (Battersby 2011, p.30). Urban population in Cape Town has registered health problems related to improper diet. Access to food through local producers and small-scale methods of production are important keys to help to tackle food insecurity. The act of producing food is also a factor that is generating further processes of change in the creation of new networks and possibilities for individual development. Home gardens are working in favor of having physical, economic access to food that meets people's dietary needs and their food preferences.

The home gardens analyzed in this research are located in Lavender Hill and they are supported by the NGO Soil for Life (See figure No.51).

Lavender Hill is an area located in Cape Flats District surrounded by serious complexities. This settlement in the outskirts of Cape Town is facing drug abuse, crime, and environmental degradation, high levels of poverty and unemployment rate; as well as a high level of food insecurity.

The access to green space basically non-existent, this area is characterised by having sandy and infertile soil. The generation of small scale gardens clearly has had a positive impact among community members.

There are some NGOs like Soil for Life working with the inhabitants, teaching them how to grow their own food all year round.



Community members are starting gardens by connecting hands in the soil and by growing safe and clean food (Featherstone 2012). Featherstone further asserts that urban farming is about reconnecting people with the soil of the earth, arguing that without changing people and teaching them how to grow food, it is not possible to have an impact in any way on the huge environmental problems that the world is facing today and into the future.

Royce Peters and Charles are two out of 500 successful urban farmers with home gardens supported by the NGO Soil for life. Their gardens are located in public open space in front of their houses; fenced with recycle materials in order to avoid vandalism and ensure their daily food. Both of them have gotten appropriate knowledge, competency, and leadership skills through the NGO to develop their gardens. They are seeds of prosperity in the future city's sustainable development.

Technical Support and Training Process

They started their gardens with the desire of growing their own food and the intention to feed their families due to the fact that they are unemployed and living in very underprivileged conditions.

Figure No.51 Home Gardens: Royce Peters and Charles, Photographies: Gloria Gaviria, Cape Town, Lavender Hill, 12th October 2012. And map: Google Earth 2012.

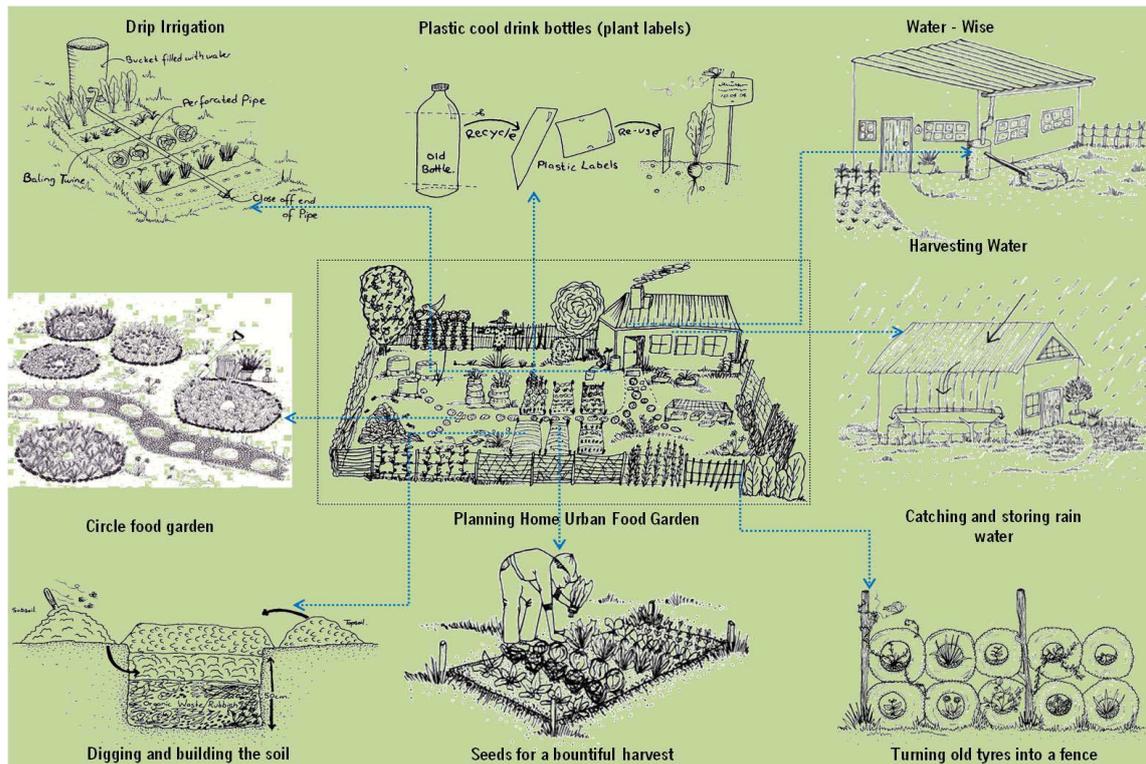
Soil for life approached and proposed them to start a garden in their own dwellings without investing financial resources; only using recycled materials and knowledge provided in situ, with the main goal of receiving a training relationship in food production, access to the materials necessary to do gardening; as well as building the soil.

They received the tools to do gardening at home by the yellow programme that lasts three months. The NGO teaches them very simple methods using materials freely available such as organic waste, baby bathtub, egg boxes, plastic bottles, recycled tires, cds among others that help to feed the soil, fence the garden, grow the products, etc (See figure No.52 and 53); as well as importance of healthy eating by growing their own food. The first training consist in how to grow healthy food, how to safe seeds, how to grow their own seedlings, how to make compost. The NGO provides skills capacities that only require doing good soil fertility. After 3 months, they receive another training module and the NGO is permanently monitoring an evaluating in

order to measure their advances and their needs.



Figure No.52 Recycle Materials Available: Royce Peters' Home Garden, Photographies: Gloria Gaviria and Eat for the Earth (Recycled Baby bathtub) Cape Town, Lavender Hill, 12th October 2012.



Access to Land and Main Infrastructure

Royce Peters' home garden is located in an illegal area that is settled in a public open space. This home urban farmer launched the garden in public open space area surrounding her house. She has direct access to this land without conflicting with any land use, using the communal water from the tap to irrigate the garden. In exchange for participating in Soil for Life's training, she got a coupon to set up her garden which contains seeds, seedlings, compost among others. Urban Farmer Royce Peters during interview asserts that the interest in do a garden is important because it gives the opportunity to work at home with the support of the NGO. Mainly, she is harvesting a huge range of products in her garden for feeding and sharing these products with her family⁵⁹.

Shortcomings and Main Benefits

The main difficulties that these home gardens are facing refers to community complexities. They have to fence their public open space area in order to protect their products from thieves and vandalism situations.

Figure No.53 Organic Methods for growing food implemented by NGO Soil for Life. Source: designed by the author adapted from Soil for Life 2006.

Although the NGO have taught them how to grow products, using the minimum of water, they are using communal water that generates conflict situations among community members.

Regarding the main benefits, they are doing gardening in a very small scale, occupying a small piece of land, using the land in an eco-efficient manner; growing organic vegetables and recycling organic waste and materials available; producing more with less for feeding their families.

They are growing organic healthy products according to the season, all year round and ensuring food for all family members with the nutritional balance required. They are connecting with the soil in different ways, developing their physical bodies, exercising themselves and beautifying the area in which they live. They are ensuring healthy life and minds to face all the challenges ahead.

7.5 Sustainable Assessment Home Gardens

The selected sustainable indicators proposed in this assessment to home gardens in public space seeks to make the process of data

⁵⁹ In interview with Mrs. Royce Peters, Urban farmer , administered by Gloria Gaviria, on October 12th 2012 (Annex 20)

collection and analysis accessible to anyone in the urban agriculture community, main governmental departments, NGOs, researchers, etc; in order to inform the condition of already implemented projects at home farming level.

The metrics framework to understand how the broad range of activities taking place at the city's farms and gardens can contribute to social, health, economic, and ecological outcomes (Cohen et al 2012). The indicator lists of varying length seek to capture the different dimensions of sustainable development. In this particular research process the strength of indicators lies in their selection, which facilitates decision-making process for integrating urban agriculture into strategic planning.

The urban farming indicators included for this home gardens' assessment took into account only the social, environmental, health and spatial category (See Annex 21). The economy category was not considered due to the fact that the urban farmers are not marketing the products produced; they are not generating any profit or creating job opportunities; these gardens are a strategy for improving family food conditions.

Social Category

Urban agriculture can promote thriving communities by bringing people of all ages together, developing peoples' skills and knowledge, and creating safe spaces (Cohen et al 2012). The indicators selected in the social component for this case study were: Social capital/connection, Age, Food Access, ongoing extension. These indicators enable to analyze the level of participation, capacity development; commitment, training opportunities.

The social capital and the connection with urban farming activities is reflected on the number of people that are working in these home gardens which varies from one to two members of the family actively engage with a main leader over 55 years old, providing the main guidelines. They spend around one hour per day working on the garden, it implies cleaning, growing new food, collecting food, supervising and maintaining the crops. The main benefits

perceived by the family are focused on healthy and nutritious food produced by them, the NGO support's working as a mean for providing skills capacities. They are ensuring complete food rations for all the members, sharing with their family members without selling or exchanging products.

Environmental Category

Urban agriculture sites can contribute to climate change mitigation and adaptation, stormwater capture, soil remediation and enrichment, and biodiversity (Cohen et al 2012). The indicators selected in the environmental component for this case study were: Awareness of food systems ecology, Stewardship, Conservation, Stormwater management, Habitat improvement / biodiversity / ecological connectivity, reducing food waste, soil improvement. These indicators seek to analyze climate change strategies for mitigation and adaptation; as well as the eco-efficient use of land focuses on pros and cons regarding recyclability.

The awareness of food systems ecology at the home gardens is growing by the knowledge transferred by the NGO. All these home gardens are receiving training in recyclability process that is implemented in different stages in their gardens. At least one or two members per garden are using organic food for compost in normal rations, recycle materials for allocating their crops, consuming the minimum quantity of water own products. Regarding the conservation, the gardens are developed in small scales, occupying between 1 and 1,50 square meters. Besides, these urban home farmers are harvesting water. Recycling black, grey, yellow and brown water is not an option to consider due to the fact that the NGO does not provide training on it, they do not have their own toilet system and some of them have the VIH which requires qualified treatment methods for cleaning water and making available for irrigation.

It is important to highlight that this assessment provided data regarding how these gardens are contributing to improve the habitat, as well as not affecting biodiversity and ecosystems surrounding. The products that they are growing varies according to the season but there are a

huge Variety like onion, lettuce, cauliflower, Watermelon, Sweet Corn, Swiss Chard, Sweet melon, celery, carrot, among other.

Health Category

Urban agriculture can help improve access to, and affordability of, healthy food for underprivileged communities, increase healthy eating, impacts in health issues and increase physical activity (Cohen et al 2012). The indicators selected in the health component for this case study were: Increasing healthy eating, Impacts in health issues.

According to their own observations and less attendance to the medical service, urban farmers ensure that the levels of healthy and nutrition standards have improved through eating healthy food. In Royce gardens four members are linked to this health programme created by assistance of the NGO and implemented in her food garden taking into account seasonal calendar.

Spatial Category

The implementation of urban agriculture in public space into cities is conceived as an essential element for sustainable urban infrastructure (Viljoen et al 2009). The indicators selected in the spatial component were: physical features, type of land, public space, land use plan, planning tools and regulations. These indicators play an important role in the urban agriculture integration, as well as helping to identify the main advantages and disadvantages of implementing urban agriculture in public space.

Regarding the physical feature the quality of soil in these gardens is categorized as infertile; this is very sandy soil. The NGO is teaching them how to build the soil; the idea is to rebuild at the roof level that means to take a hole and to put organic waste to the ground in different layers, essentially they are building a compost heap on the ground and try to bring life on it.

The type of land that these gardens are located is illegal area, considering public open space invasion and in future time these dwellings will be relocated or the area will be upgrading. The gardens are not following the zoning schemes

regulations and spatial development strategies, according to the planning tools these gardens are illegal due to the fact that these home gardens need a consent use for using public open space; for these reason, the urban farmers have fenced the area to protect the garden, as well as including it into their house. However, according to the urban agriculture policy these gardens are legal and receiving permanent follow up by the NGO without any support from the Urban Agriculture Unit.

All the home gardens analyzed by this research, are improving public space; transforming sandy areas into productive green areas.

The production of food is being catalysed by various fields of new process development in home, school and community gardens. "Food is what connects us all to each other and to the natural world, which makes it an incredibly powerful medium for thinking and activity collaboratively" (Steel 209).

7.6 Community Gardens: Fezeca - Gugulethu

Accessible food in Cape Town is coming from home gardens (5%), community gardens and urban farming (35%) and agro farming outside Cape Town (63,5%) (Palmer et al 2012, p.21).

Food production in Cape Town is distributed unequally; there food desert areas that can be converted in community gardens in public open space located; for instance, in schools that have the potential place for food production, these gardens can make a huge impact on food security in Cape Flats.

The core of community gardens is a process starting from community empowerment, engagement and permanent support. Community gardens are producing fresh food locally in accordance with seasons, leading to goods that are more attractive on the market due to their taste, nutritious value, cost and minor ecological impact. These gardens are creating job opportunities, embracing biodiversity, educational and cultural identity, while implementing low-tech water harvesting, food production and social programmes.

The community garden analyzed in this research

is located in city's public open space in Fezeca-Gugulethu and they are supported by the NGO Abalimy Bezekhaya and the box scheme Harvest of Hope (See figure No.54).

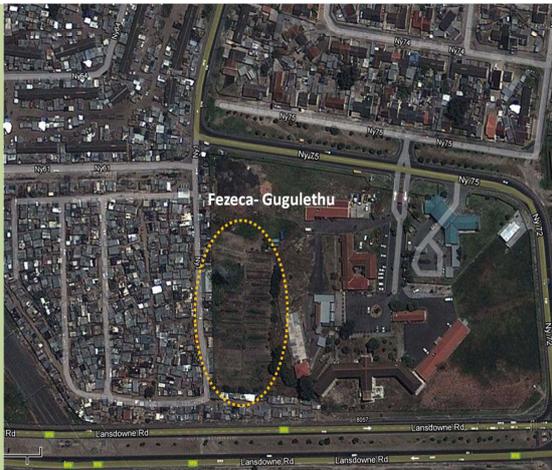


Figure No.54 Fezeca-Gugulethu Garden in Cape Flats, Source: Google; 2012.

Fezeca and Gugulethu are areas located in Cape Flats District surrounded by serious complexities. This area has significant demand for housing and a huge need for upgrading informal settlements. This area has been historically marginalised in respect of investment in public facilities and services, which has tended to be perpetuated in the poorest residential areas.

The public open space is characterised by the invasion of numerous of informal settlements; combined with poor residents and high density urban settlement. The lack of active and passive recreational spaces in these areas is a reality affecting all inhabitants. Besides, there are many illegal dumping areas on open public spaces, affecting significantly the environment and citizens' health.

However, there are some NGOs like Abalimi Bezekhaya working with the inhabitants in many levels, teaching them how to grow their own food all year round, meanwhile communities are implementing their knowledge and coming up with sustainable initiatives from the ground.

Community garden is located in Fezeca Gugulethu that refers to this research is one of the oldest garden, launched in 2001 by the big mamas (see figure No. 55).



Technical Support and Training Process

Big mamas have been working on this land for 11 years, supported by the NGO Abalimi Bezekhaya. They have become in a community based organization run by urban farmers in Cape Flats. This garden is mainly driven by Mama Bokolo (76 years) who motivates and supports permanently the other older mamas. All the members have gotten the appropriate knowledge, competency, leadership skills to develop and spread their expertise and capacities in this garden. Urban agriculture for them is not a livelihood strategy is a way of living.

The daily responsibilities of the garden's leader consists of growing food, maintaining the garden, keeping all products register, giving advice, acting as a mentor to casual labour and apprentices, and ensuring the training session with the NGO Abalimi.

Figure No.55 Community Garden: Fezeca- Gugulethu Garden, Photographies: Gloria Gaviria, Cape Town, Gugulethu, 16th October 2012.

The main training provided by the NGO is focused on gardening skills, from crop rotation, plant protection, planning and composting among others.

The NGO is empowering this community through providing the proper tools to grow food, creating job opportunities to be sustainable. They are providing in this garden agri-planning, training to grow food according to the seasonal calendar, permanent technical support, advice, information, providing subsidies to supplies like seedlings, seeds, compost; as well as permanent monitoring and evaluation. Furthermore, the NGO is giving further training in agribusiness and Micro- urban farmers Training Courses.

Abalmi has an essential link with the urban farmers; creating conditions to develop their initiatives make them food providers for themselves and their communities. Through the knowledge acquired, urban farmers are working on impacting their own future and they have become owners of Cape Town's sustainable future. They are become in commercial farmers, contributing to sustainability and improving their own economies. These older mamas are growing good quality of food that goes to the packshed Harvest of Hope (HoH) and assist to feed the whole district by marketing system with agricultural and horticultural commodities; for more explanations about HoH model see chapter 6.4.

Access to Land and Main Infrastructure

This garden is located in a multifunctional provincial and local government's land. This is a public open space in Gugulethu area; adjacent to Day Hospital and AIDS clinic. This is one of the examples of government public land that works successfully. The government leased to the community 11 years ago at around 2.000 Rands a year, it is very low price that benefits the urban farmers. It is a good example of what would happen with a commonage land is used in an efficient way. This is a patch of land that can feed more than 50 people per week.

This garden has been struggling with water affordability. For this reason, since this year, they decided to implement a new low technology based on harvesting water in tanks and deployed through drip lines. Only 3-4 litres per square meter per day are needed during dry periods. This is an example how the big mamas in this garden are harvesting water and giving solution to one of the main challenges in urban agriculture; water affordability, but they are acquiring a new issue; they require electricity for pumping the water.

Shortcomings and Main Benefits

The major challenges that this garden is facing rely on the irrigation system. They have to buy a lot of electricity for the electrical generator that helps to pump water through drip lines for the irrigation process. Another issue is pesticides. They are doing organic farming; for this reason, they are not using pesticides needed to control

certain insect pests in the crops. Besides, they do not control properly the crop production in the whole garden, losing some harvests; however, they are reusing this crop waste as fertilizer for building the soil.

Regarding the major benefits; they have created in these urban farming activities a way of living which enables them to have a job opportunity, improves their economies, ensures good food quality, increases their nutrition standards, feeds their families and feeds more families in Cape Flats, as well as contributing to improve environment and connecting people in Cape Town by participating in the food system.

7.7 Sustainable Assessment Community Gardens

The selected sustainable indicators proposed in this assessment to community gardens in public space seeks to make the process of data collection and analysis accessible to anyone in the urban agriculture community, main governmental departments, NGOs, researchers, etc; in order to inform the condition of already implemented projects at school, community and large urban farming level, as well as using the indicators as instruments to support the formulation and evaluation of the execution of policies, regulations and strategic planning.

The indicator lists of varying length seek to capture the different dimensions of sustainable development. In this particular research process the strength of indicators lies in their selection, which facilitates decision-making process for integrating urban agriculture into spatial planning and land use management.

The urban farming indicators included for this community gardens assessment took into account the social, economic, environmental, health and spatial category (See Annex 22). This garden is generating job opportunities, commercial urban agriculture, agri-planning business working in favor of creating a food system in Cape Flats. Visual summary of sustainable urban agriculture indicators in Fezeca-Gugulethu food garden (see figure No.56) and results matrix framework (see figure No. 57).

Social Category

Urban agriculture can promote thriving communities by bringing people of all ages together, developing young peoples' skills and knowledge, and creating safe spaces (Cohen et al 2012). The indicators selected in the social component for this case study were: Social capital/connection, Age, Youth development, Food Access and Ongoing extension. These indicators enable to analyze the level of participation among community members into urban agriculture process, capacity development; commitment, training opportunities as well as indentifying the main problems in empower community process.

Social capital/connection and Age

Six urban farmers are actively engage; working daily on this garden, all of them are older women over 70 years. They are supported by one foreign volunteer and one local supervisor. This garden has been driving by women since 2001 without the involvement of any men; mama Bokolo (76 years) is the main leader selected in a democratic process by association's members. The older mamas are working 4 full days a week after 3 in the afternoon and they do not work on weekends. The activities developed are recycling, planning, fertilizing, cleaning, and growing new food, collecting food, supervising, maintaining the crops, accounting, selecting and packaging products that go to the HoH packshed and to their families.

The main benefits perceived by the community members are focused on healthy and nutritious food produced by them, NGO's support working as a mean for providing skills capacities and economic benefits that assist to improve their economies and guarantee a monthly income. The main difficulties are focused on consuming electricity and water affordability, as well as the non use of pesticides.

Youth development

One young foreign member is participating in farming activities without economic reward. These urban farmers have inspired and motivated youth communities by showing what is possible with a few tools, a patch of land, some seeds and a lot of determination. Some volunteers and apprentices start their urban

farming activities in this garden under the supervision of these older urban farmers, learning the main gardening skills, from crop rotation, plant protection, planning and composting. The volunteer has indicated that participating in this programme and training enable her to being part of this farming community.

Food Access

This garden is contributing successfully to feed some community members in Fezeca, Gugulethu and Nyanga trough the box scheme organized by Harvest of Hope programme; 80% of the total amount of vegetables goes to the box scheme and 20% go to feed all the urban farmers' family members. They are planning this garden full of vegetables, using 10 kilogramme of seedlings per month at a cost 10 Rands; permanent subsidize in their farming system by the NGO Abalimi Bezekhaya.

Economy Category

Urban agriculture can assist in stimulating local economies, provide jobs and job training, and offer opportunities to earn income through sales of produce and other agricultural products (Cohen et al 2012). The indicators selected in the economy component for this case study were: Local and regional economic stimulation, Job growth, Job readiness, Affordable healthy food. These indicators permit to understand how the implementation of urban agriculture in this case study areas is impacting the local economy at the community and household level as well as levels of training and coverage regarding food programmes and their impacts.

Local and regional economic stimulation

The total value of food produced in this garden per month is between 500 to 3000 Rands per 500 square meters per month. This garden has 2.100 square meters of land available for growing food. In addition, they are earning collectively between 1.000 and 2.000 Rands per month depending how they perform during this time and the climate conditions affect the garden. They are six and they divide the amount of money into them, granting regularly income per month, plus social pension.

They are selling the products to HoH box

scheme; the price of the vegetables is established on a comparative analysis of different supermarkets and whole sellers. Although producers get less than the normal price for their crops, Harvest of Hope gives them a regular and secure price.

Job growth

There are six permanent employees and two informal employees per week who are in charge of loading the vegetables to the vehicle that will deliver the products in HoH. One of the volunteers is working supervising the harvest every day and identifying the main problems in regards to the products (quality, process, loss of products, etc). Sometimes this garden creates new job opportunities depending on health issues among urban farmers or extra tasks ahead in the garden.

Job readiness

Most of the volunteers are foreigners that donate their time in helping these urban farmers in their daily activities, as well as enjoying and learning about crop rotation, plant protection, agri-planning and how to make compost and fertilizer from organic waste. They have trained them in job skills that enable to set up their own garden at home. This garden has trained around 7 volunteers during this year.

Affordable healthy food

This garden is giving provision of food to many underprivileged communities and schools in Cape Town, contributing successfully to feed some children in Nyanga and Kayelitsha schools through the box scheme organized by Harvest of Hope programme. The capacity and production of Harvest of Hope in supplies weekly boxes is to 350 – 380 members a week; regarding the type of boxes, they manage the big one and small box, the difference is the price 105 and 72 Rands respectively.

Environmental Category

Urban agriculture sites can contribute to climate change mitigation and adaptation, stormwater capture, soil remediation and enrichment, and biodiversity (Cohen et al 2012). The indicators selected in the environmental component for this case study were: Awareness of food systems ecology, Stewardship, Conservation, Stormwater management, Reducing food waste,

Soil improvement and Habitat improvement / biodiversity / ecological connectivity. These indicators seek to analyze climate change strategies for mitigation and adaptation as well as the eco-efficient use of land focusing on pros and cons regarding recyclability.

Awareness of food systems ecology

High levels of awareness in environmental matters are registered in this community garden. Urban farmers are gaining knowledge, training in recyclability process to implement in different stages in their gardens. All the six members have the skills capacity to reuse organic waste and transform it into compost to build and provide fertility to the soil. Besides, this urban community garden is harvesting water. Recycling black, grey, yellow and brown water is not an option to consider due to the fact that the NGO does not provide training on it and it requires special treatment process to clean and make it available for irrigation.

Stewardship

The garden has worked successfully under the stewardship of mama Bokolo. Having a good leader who drives the process and ensures the permanent commitment of group members is absolutely required to guarantee the success of the garden.

Mama Bokolo is a passionate gardener with “green hands”, as she calls them, she has transformed a piece of land into a beautiful, thriving vegetable garden, which is welcoming to whomever wants to get their fingers dirty (Small 2012)⁶⁰.

It is important to highlight that this assessment provided data regarding how these urban farmers and the community has confirmed how this garden is contributing to improve the public open space, as well as not affecting biodiversity and ecosystems surrounding.

Conservation and Stormwater management

There are some complexities around water for irrigation in this garden. Firstly, water is non-

⁶⁰ In interview with Engineer Rob Small, Head of Abalimi Bezekhaya, administered by Gloria Gaviria, on October 16th 2012 (Annex 14)

affordable; the annual consumption of water overcomes 10.500 liters (10.51 Rands per 10 kl). Secondly, they are implemented a low- tech to harvest water but huge amounts of electricity are needed for the electrical generator that helps to pump water through drip lines for the irrigation process. They are solving water affordability but getting a new issue, the high cost of electricity. Besides, they are processing 10% of food waste per month for compost, they are in the using eco-efficiently the land and waste, producing more with less, reducing waste, recycling and reusing organic waste.

Habitat improvement / biodiversity / ecological connectivity

They are preserving the environment without using chemicals, synthetic pesticides or synthetic fertilizers; contributing to build and enrich the soil with organic compost and working with sustainable principles that help to mitigate climate change. The number of crops grown is around 50 of each product per week.

Health Category

Urban agriculture can help improve access to, and affordability of, healthy food for underprivileged communities, increase healthy eating, and increase physical activity (Cohen et al 2012). The indicators selected in the health component for this case study were: Increasing healthy eating, Impacts in health issues.

Increasing healthy eating

According to their own observations and less attendance to the medical service, urban farmers ensure that the levels of health and nutrition standards have improved through eating healthy food. All the urban farmers are linked to this health programme created by assistance of the NGO and implemented in the garden taking into account seasonal calendar.

Impacts in health issues

The NGO has taught them to combine vegetables produced, promoting healthy habits and balanced nutrition with good quality products. This garden is producing vegetables such as green peppers, butternut, baby marrows, sweet potatoes, beans, peas, pumpkins, spinach, beet root, celery, onions, Cauliflower, spinach, carrot, among others. All these products help urban

farmers and consumers to improve nutrition standards through food produced in this community garden.

Spatial Category

The implementation of urban agriculture in public space into cities is conceived as an essential element for sustainable urban infrastructure (Viljoen et al 2009). The indicators selected in the spatial component were: physical features, type of land, public space, land use plan and regulations. These indicators play an important role in the urban agriculture integration as well as helping to identify the main advantages and disadvantages.

Physical features

The quality of these 2.100 square meters of arable land is very sandy and infertile. The NGO is teaching them how to build the soil; the idea is to rebuild at the roof level that means to take a hole and to put organic waste to the ground in different layers, essentially they are building a compost heap on the ground and try to bring life on it.

Type of Land

Fezeca-Gugutethu garden is one of the most successful examples that are using vacant plots in public open space in a sustainable way, producing food and contributing to reconnect city through this green movement from the ground level. This area is protected by local government and it used to be a dumping area, recovered by these urban farmers through the support of the NGO Abalimi Bezekhaya. This garden is located in a public open space and it belongs in a multifunctional way to the provincial and local government. The government leased to the community 11 years ago at around 2.000 Rands a year, it is very low price, benefiting urban farmers.

Land use plan, planning tools and regulations

This garden is following the main planning tools in Cape Town. On one hand, the zoning schemes regulations approved the consent use developing farming activities in public open space. On the other hand, according to the Spatial Development Framework, this garden is fulfilling the criteria established in terms of location,

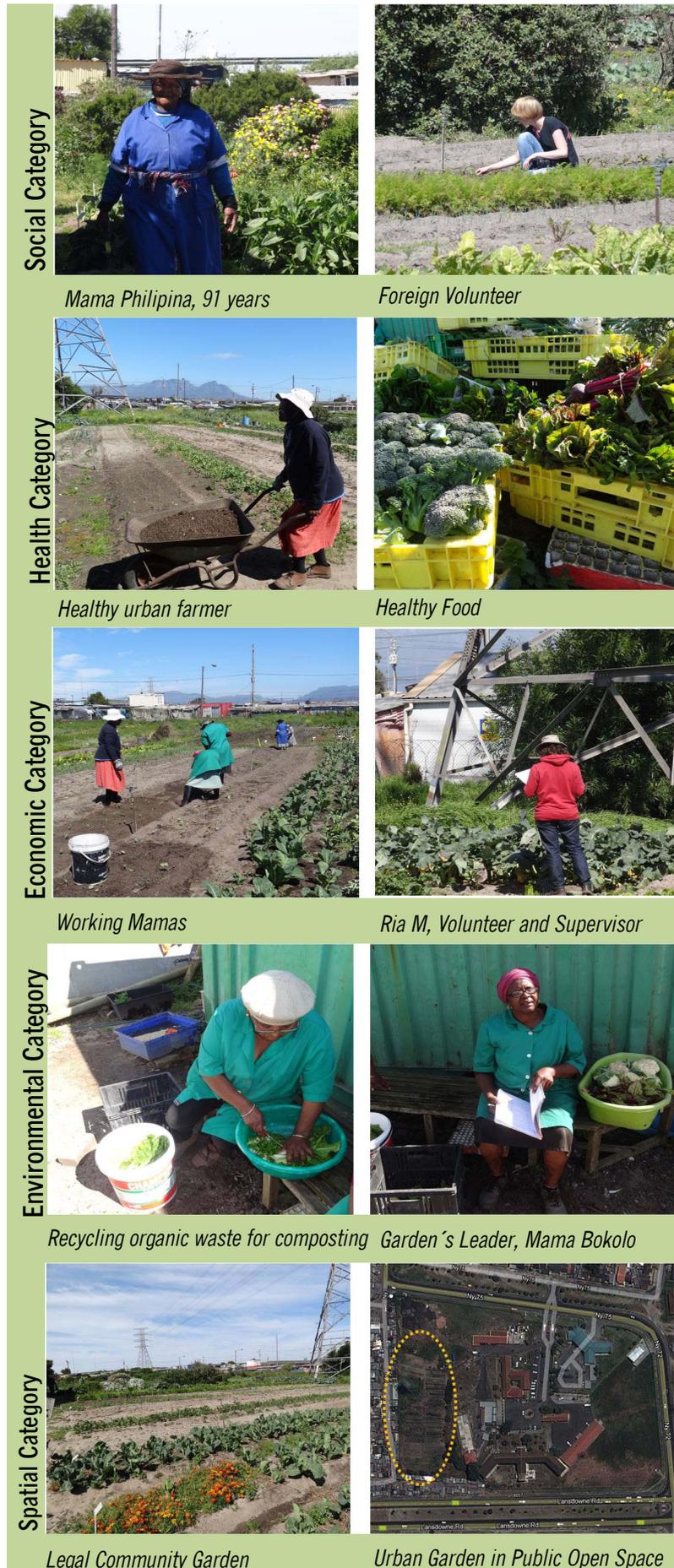
infrastructure and support. This garden is located in proximity where urban farmers live, they have the availability to afford water, even though they are harvesting water as was explained before, they are creating a good quality soil without impacting the environment with pesticides or crop residues and the farmers are supported by a NGO in all the senses required to produce healthy food.

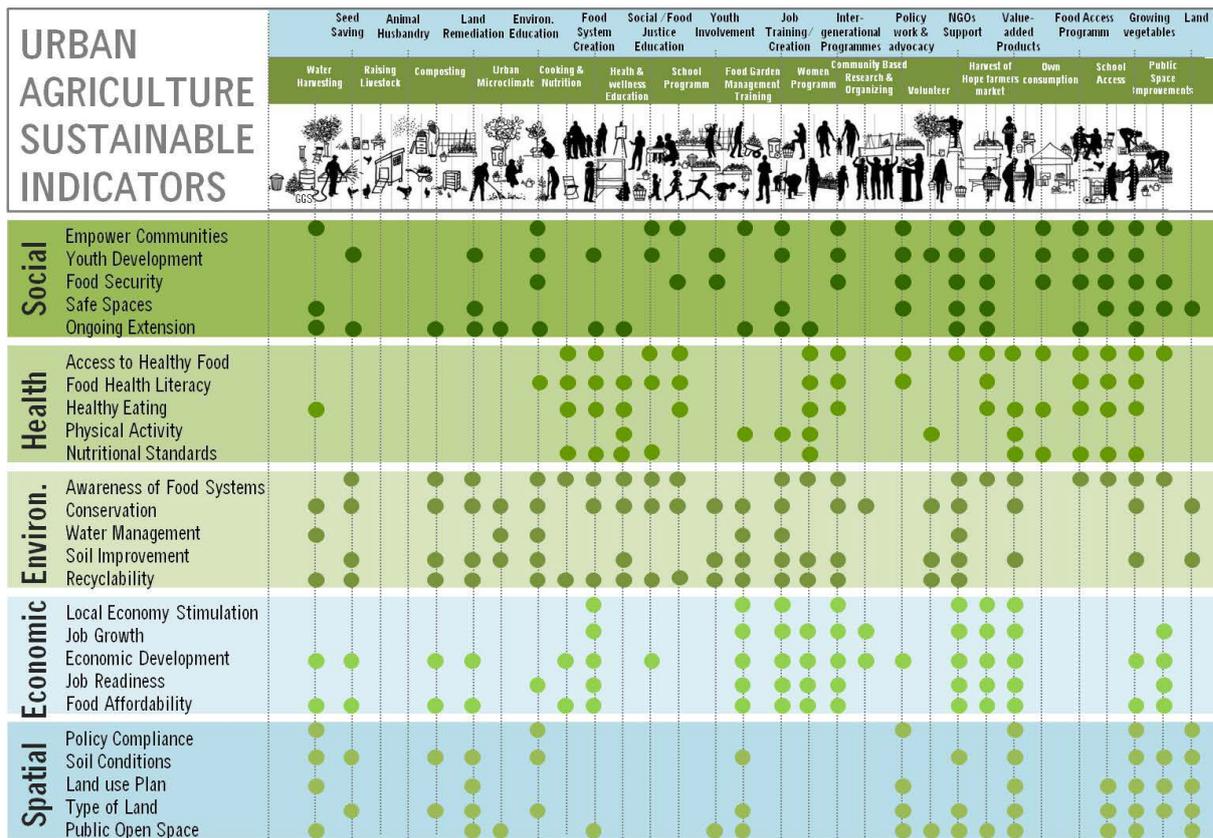
According to the urban agriculture policy this garden is legal and receiving permanent follow up by the NGO without any support from the Urban Agriculture Unit. This garden is in line with the key sustainable focus areas promoted by the policy in regards to Awareness of and advocacy, within the legal and regulatory framework, supported by knowledge and technology transfer with expertise available permanently, Production and marketing and Youth engagement.

Public space

Fezeca- Gugulethu garden is improving public open space that used to be an illegal dumping area. This is a productive green area that is the sustainable scenario for creating and strengthening physical and social spaces where people and innovations can meet new relations, collaborations and deals among stakeholders. This sustainable initiative is connecting with the urban actors involved to benefit the local community and other parts of the city, creating a sense of belonging among urban farmers to this public space with productive character.

Figure No.56 Social, Economic, Environmental, Health and Spatial categories; Community Garden: Fezeca-Gugulethu Garden, Photographies: Gloria Gaviria, Cape Town, Gugulethu, 16th October 2012 and Google 2012





Analysing Preliminary Results

Assessing these gardens in Cape Flats through sustainable indicators enables the research to prove that to support the formulation and evaluation of the execution of policies, regulations and spatial planning strategies is needed to conduct a sample evaluation in current projects that are implementing urban agriculture in public space. There are approximately 3.500 urban farmers that are growing food in public open areas and the regulations and planning tools require to be formulated in harmony with the reality and reliable information.

The Urban Agriculture Unit, the Spatial Planning Department and the Land Use Management should count with this type of information that will facilitate decision-making process, develop proper regulations, guidelines and criteria to allocate urban agriculture in public open space, as well as assisting in the integration and implementation process of urban agriculture into spatial planning and land use management.

Figure 57: Results Matrix Framework. Adapted from Matrix framework developed by Five Borough Farm in NY; incorporating new indicators and category. Sustainable assessment implemented in Guguletu’s community Garden in Cape Town

The main benefits of this assessment are focusing on various fields of sustainable development, as well as working as instruments for decision-making. The categories evaluated expose mainly the advantages of implementing urban agriculture in public space.

Sustainable Assessment of urban agriculture in public space	
Social Category	The involvement of many urban farmers in productive public open spaces with proper support and ongoing extension of NGOs which are empowering community members to actively engaging and building notions of collective responsibility, culture of commitment and identity.
Educational Category	These public open spaces are scenarios that work as tools to raise awareness about how to transform unproductive area to

	a productive green area by generating a sense of belonging through connecting green hands in the soil.
Economic Category	These green productive areas are creating job opportunities to urban farmers to produce their own food and participate in the formal economy, access to formal markets and food system creation. The economic development and poverty reduction are taking place.
Environmental Category	These public open lands are using in an eco-efficient manner, avoiding illegal dumping, delinquency, insecurity, health issues among others. Urban farmers are recycling organic waste, improving soil fertility, harvesting water and improving the microclimate in this new productive infrastructure. The environmental degradation is reducing.
Health Category	Through the result of using this public open area to grow food, healthy conditions and nutritional standards of community members are improving and letting the production of food to play a crucial role in the attainment of a better quality of life. Levels of healthy habits, food security and nutrition are increasing.
Spatial Category	The implementation of urban agriculture in public open space has been providing long term qualities to neighborhoods livelihood and public properties, as well as ensuring a productive use of land permanently or temporary, avoiding illegal development and fulfilling the regulations. The appropriate use of land is playing a crucial role.

Table No.13 Sustainable Assessment of urban agriculture in public space, Source: Designed by the author 2012.

7.8 Urban Planning Vision of Philippi Horticultural Area

This section seeks to analyze the most relevant example of urban agriculture in Cape Town from the planning vision. Philippi Horticultural Area (PHA) is considered the unique agricultural asset and valuable open space in Cape Town with specific urban planning guidelines for agriculture implementation.

The PHA is the major green lung, centrally located within the City and has the sufficient urban arable land to feed the whole city. PHA has 3400 hectares which more than 1,200 hectares are suitable for food production. This area produces significant volumes of food, most of which goes directly into the Cape Town food system (Haysom et al 2012). This is a protected area considered with significant value by the Spatial Development Framework and Zoning Scheme Regulations. Besides, this urban farming area has a special proclamation from the province; the provincial department of agriculture declared as a Horticultural area with holds pockets of biodiversity value; currently on the pressure of urban sprawl as well⁶¹.

The main achievement for urban agriculture is the land management plan for PHA which works as land use planning tool for decision making. This planning policy was approved in 2012; making the arguments stronger for protecting this productive area, currently, consider in risk and under real threat to urban development around new social housing and developer driven projects⁶².

From the planning perspective, this is the most significant urban agriculture and valuable farming zone in Cape Town with spatial planning categories; high potential land, unique agricultural land and urban agriculture area with significant value (See figures No.58 and 59). It includes specific guidelines that are associated with land designations.

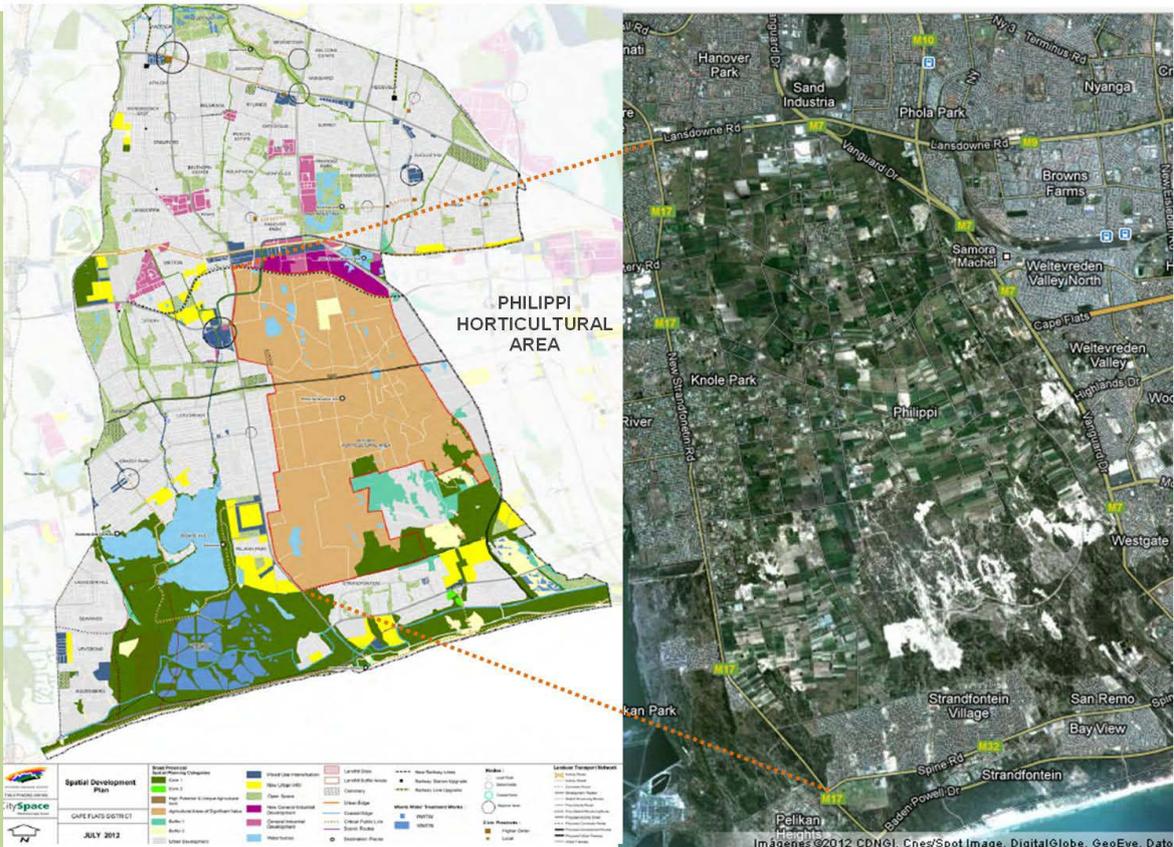
⁶¹ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

⁶² Information provided by Manager of the Sustainable Agriculture Programm , Gareth Haysom, University of Stellenbosch, Sustainability Institute, via electronic correspondence, on August 29th 2012 (Annex 17)

All the main planning strategies are focused on this area in order to protect its historical value as urban farming area. The proper use of this huge piece of land has the capacity to make the difference for sustainability in Cape Town. In fact, this land absorbs the water for the water table (aquifer); it is prime and nature conservation agriculture zone. This is multiple use land that should be not allowed to build zones for housing or any development except conservation farming⁶³.

Figure No.58 Urban Agriculture Areas of Significant Value: Location Philippi Horticultural Area, Source: CoCT 2012 and Google 2012.

Figure No.59 Urban Agriculture Areas of Significant Value: Philippi Horticultural Area, Photographies: PEDI 25th Cape Town, Philippi, October, 2012 and Gloria Gaviria, Cape Town, Philippi, 26th October 2012.



⁶³ In interview with Engineer Rob Small, Head of Abalmi Bezekhaya , administered by Gloria Gaviria, on October 16th 2012 (Annex 14)

In terms of the interface between planning and food production practice, PHA is playing a crucial role. The land is property owned but it is under the authority of province and it has a historical value, the land has been farmed for over 150 years (originally settled by German immigrants) (CoCT 2012). The planning department has negotiated a highly political and contested process to retain the area, arguing the advantages of urban agriculture in PHA⁶⁴; and its promotion as an agricultural tourist destination.

In addition, there is an Environmental Impact Assessment for the local area plan for the PHA. The Spatial Planning Department has the vision for urban agriculture over PHA and there are interesting initiatives, strategies and designs on this area that will go to the council for approval in next months (October 2012)⁶⁵.

Regarding the Spatial Planning category; the intensive agriculture areas with high potential and unique agricultural land; comprises a significant area and includes the historic and valuable farming lands of the Philippi Horticultural Area; the main guidelines are 1. Preserve and utilise the high potential agricultural land in the Philippi Horticultural Area. 2. Adhere to identified urban edges around the periphery of high-value agricultural areas to prevent urban intrusion 3. Encourage activities that reinforce primary agricultural use of these areas. 4. Limit non-agricultural uses to ancillary rural activities that do not detract from the primary agricultural use and character of the area, but contribute to local character and associated recreational and tourism potential 5. Limit (residential) development to existing zoning rights for agricultural land in these areas. 6. Discourage further sub-division of agricultural land. 7. Reference should be made to the Environmental Management Framework's natural economic resources zone and specific environmental attribute detail for further

⁶⁴ Information provided by Manager of the Sustainable Agriculture Programm , Gareth Haysom, University of Stellenbosch, Sustainability Institute, via electronic correspondence, on August 29th 2012 (Annex 17)

⁶⁵ In interview with City and regional planner Vernon Moonsamy, administered by Gloria Gaviria, on October 23rd 2012 (Annex 09)

guidance around the desirability of specific activities in these areas in these areas.

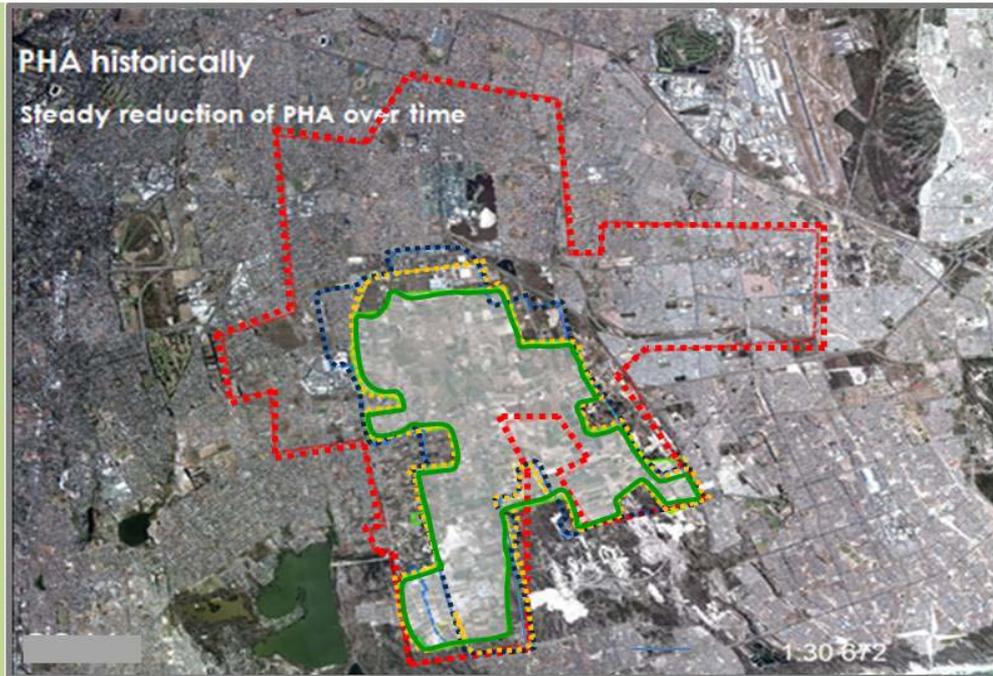
Planning history of PHA from stakeholders vision

This land considered historical asset by the city has a steady reduction over time due to the lack of strong planning regulations that control the illegal use of land that generates a development pressure. According to Hennessey 2012, in 1953 the PHA was on the edge of the city, and farming activities fragmented intensity within the valleys of the existing dune systems. With increasing urban development pressure, the area has decreased significantly (See figure No.60).

PHA historically has been mine for sand; when it was the end of the sand they converted into agricultural area (Battersby 2012). Battersby further argues that the quality of the soil is very sandy but there are a number of benefits; the land is very stable; it does not need much water because it drops from the aquifer. Second, it has a very particular microclimate, it is quite a lot cooler areas in the city, and it makes the area more productive. Many farmers have been over years using chemical fertilizers but increasing organic material. When the prices of the food produced go up is because they are using more organic materials⁶⁶.

According to Battersby, a few years back, the Spatial Planning Department tried to reorganize the boundaries of this area through a plan, but Province Council rejected this initiative. This land has to go through environmental regulations before they can build new projects; as a result, there are illegal uses and some people are doing farming on the south west side. Haysom et al 2012 further argues that the urban expansion pressures have resulted in significant land use transformation, which has eroded the area's smallholding functionality and impacted on its form. All the areas in PHA need protection through the Spatial Development Framework.

⁶⁶ In interview with Professor Jane Battersby Lennard, administered by Gloria Gaviria, on October 23rd 2012 (Annex 16)



■ Extention in 1953
■ Extention in 1988

■ Extention in 2002
■ Extention in 2012

Figure No. 60. Aerial Photomap Philippi Horticultural Area Historically, Source: CoCT 2012.

Although there is a new plan for protecting this area the housing development pressure on this land is too high. Battersby suggests that this land is important component of city health and economics; implementing a strategic food system for food security in Cape Town is needed, taking into consideration this productive land.

Private sector confirms that since the apartheid era, over 60% of this land has been left untended.

Developers are trying to convert agriculturally zoned land to residential and commercial land due to the location of the land being central to the Cape Town metropolis. The PHA is unique and no other major metropolitan City in the world has a resource with underground water resources to support urban agriculture.

Main Challenges of PHA

The PHA is a large commercial agriculture area which is under threat from urban encroachment with many complexities compromising its original land use. There is competition among land uses, unauthorised land uses, non-conforming land use without clearly defined (urban edge); as well as land invasion on public

and private land and the intrusion of reserved horticultural area by non-agricultural activities (CoCT 2010).

Even though there are planning tools and policy regulations for the PHA area, there is an inconsistency with the reality. There are inappropriate zoning, ineffective land use management and land use transformation that is impacting upon and threatening the viability of the horticultural area and its role in the city's food security (Haysom et al 2012).

The area is under threat from multiple applications from developers with the intentions to rezone the area and make it available for housing, industrial and business development (Battersby 2012). Battersby further asserts that the lack of resources available has made it difficult to generate accurate data on the current productive capacity of the land; as well as the lack of an understanding of the urban food system has decreased the role of PHA in providing fresh produce to the most food insecure areas of the city.

Besides, there are some illegal activities in the urban edge such as drug dealer businesses,

mechanical watery, waste pickers, degrading living environments and public open spaces; as well as the use of open spaces as a dumping ground. This area is completely under control from land use perspective with all these illegal uses that are a big problem for the land use management office. Some of the current applications in the PHA are focus on legalizing some illegal land uses⁶⁷.

The spatial Planning Department is doing some researches that have been supporting arguments to protect the PHA. They are working strategically in PHA that is considered an area in risk because of the housing development applications. A lot of interests from the private sector and Housing Department have been taken place over this land; in special for the south western corner of the PHA with is the most productive and is encroaching on environmentally sensitive and agriculturally valuable land.

The Spatial Planning Department has recommended to the city not to change the urban edge for housing development in this area and preserve the urban agriculture vocation; as well as reserving for future agriculture, especially with predicted future climate change in Cape Town⁶⁸. Besides, there is a lot of interests in keeping the urban agriculture and maintain in the long term because they will empower sort of the poor areas and the poor regions. Besides, the department has identified new development areas for housing in order to avoid using the very productive PHA. This statement is further supported by the academy in this way; housing developments cannot be allowed to take place on good agricultural land with the best water available or in areas where the local wetlands and ecosystems will be threatened (Haysom et al 2012).

There is a clear competition for land in Philippi area; situation is putting in risk urban

agriculture areas. According to the planning vision; the best ways to protect, control or give priority to this area are: 1. to better understand its value to the city in terms of environment, food production, and agro-climatic conditions, among others 2. To communicate this value position to the extent that key decision-makers are convinced of its value, 3. Proclaiming the PHA with heritage legislation, 4. Providing better management support to an essentially farm area within the city, 5. Facilitating the development of a more multi-functional and multi-dimensional green productive areas. and 6. Investigating sustainable methods and low technologies such as perishable waste recycling, more intensive farming practices, energy generation, biogas, among others.

Main Benefits of PHA

The PHA is a multi- significance asset that represents an urban agricultural opportunity to ensure the ongoing sustainable production food for the whole city and plays the most relevant role as green productive resource in city's sustainable development.

This productive land can provide important income; generating job opportunities through creating direct access to urban agricultural activities and agricultural land (CoCT 2010). Other important benefits rely on the opportunity to Safeguard a key part of the city's for agricultural resource base; working as model to be replicated in urban agricultural complexes elsewhere in the metropolitan area and utilising such complexes as the first level of structure for an emerging regional city in order to safeguard agricultural resources (Haysom 2012).

The PHA plays a crucial role in the on-going food crisis, rapid urbanization, high expected temperatures as a result of climate change, peak oil; high cost in transport and energy among other issues that are surrounding challenges ahead in the city. These issues are triggering complex urban dynamics such as food insecurity, environmental degradation, and high levels of poverty an unemployment rate. It is important that City of Cape Town planning be developed around the issues aforementioned; and the city reserves the PHA as means to ensure food, provide job opportunities, mitigate

⁶⁷ In interview with City and regional planner Vernon Moonsamy, administered by Gloria Gaviria, on October 23rd 2012 (Annex 09)

⁶⁸ Information provided by Manager of the Sustainable Agriculture Programm , Gareth Haysom, University of Stellenbosch, Sustainability Institute, via electronic correspondence, on August 29th 2012 (Annex 17)

climate change; guarantying a sustainable development for present and future citizens. According to Battersby 2012 PHA will become increasingly valuable to the food system, food security, nutrition and health for all citizens in Cape Town.

The pro-active participation with formal proposals created by the main stakeholders in regards to urban agriculture has been playing a crucial role to defend this area. The current problematic surrounding land use transformation is being exposed by academic researchers. The NGOs are arguing the important role on educate people to work on this land and use it as means to feed the city. Private sector has come up with proposal to provide jobs and develop urban agriculture a large scale. Local community organisations have been engaging council for some years in addressing the challenges in PHA, identifying opportunities and most importantly offering solutions. The emergency farmers have presented an alternative plan to city and province that is around creating smaller plots to encourage sustainable infrastructure such urban agriculture⁶⁹.

The new management development plan is proposing a win-win situation that attempts to integrate the various activities such as agriculture, commercial, industrial, smallholdings and the local ecology while at the same time addressing food security, water security, job creation, economic development and attracting new public and private investment on the Cape Flats (CoCT 2012). It is expected that this proposal provides important impacts at social and economy level with job creation and poverty reduction; at environmental level with preservation and conservation of biodiversity and at spatial level with the protection of the land use regulations. All the strategies proposed in this plan seek to address the slow rate of transformation of public spaces into productive areas.

⁶⁹ In interview with Professor Jane Battersby Lennard, administered by Gloria Gaviria, on October 23rd 2012 (Annex 16)

Statistics of PHA

- The current horticultural area of 1852 hectares produces between 70 – 80% of the vegetables marketed annually through Epping market.
- Unmarketable vegetables supplied free of charge to PHA farm workers amount to up to 10kg per family per week.
- Some 2000 people are directly employed in the horticultural industry, with one permanent employment opportunity for every 1,4ha cultivated and one seasonal employment opportunity (9 months/year) for every 1,75ha cultivated.
- Economically the PHA, due to its favourable metropolitan location, sufficient irrigation water and adequate labour supply, represents an area of above average nett farming income, with the current annual production turnover estimated at over R100 million, or some R70 000/ha.
- Three out of every four jobs created in the PHA are filled by persons from surrounding communities thereby stabilising the job market in such communities.
- Creation of secondary employment (hawkers) due to the local availability of quality cheap produce. Up to 100 000 cabbages from the PHA are sold by hawkers per week.
- Current production, income and employment are being achieved with only 60% of potentially productive land within the PHA being utilised.

Table No.14 Statistics Philippi Horticultural Area, Source: CoCT 2010, p.7,8.

Land use Guidelines for decision making

In order to facilitate the land use management organization, Cape Flats District is divided into six sub-districts. The guidance for land use and environmental decision-making across the whole area deals with achieving desirable medium to long term future development visions for these identified sub districts in regards to existing urban, public open space, natural and agricultural areas; as well as including guidance for undeveloped areas (CoCT 2012).

The main spatial development objectives for sub District PHA are focused on protecting the productive core horticultural area clearly defining the edges (See figure No 61). Besides,

livestock farming is not allowed in this area due to the limit groundwater and possible contamination to water bodies⁷⁰. The promotion of the freeway extension across the PHA is important in order to relieve the increasing east-west traffic congestion between Mitchell's Plain and the southern suburbs Main Road corridor and adjacent work opportunity areas (CoCT 2012).

Other objectives are referring to changes in land use in specific areas which are not longer considered core horticulture area; and the consolidation and improvement highlands estate as a viable and functional urban area within the PHA. The former is related to encourage medium density mixed use development and the latter focused on supporting and facilitating the development of positive urban-rural interfaces with the horticultural area; mainly defining the edges (CoCT 2012). The last objectives refer to retention of core biodiversity and public open space areas within the PHA, as well as links between biodiversity areas within and outside the PHA (CoCT 2012).

The plan makes a special clarification regarding how this area has been identified by the City for future new urban development as long as it does not negatively affect the sustainable long term viability of the adjacent PHA. The plan makes a clarification in regards to the attention given to coordinate land use development and land use demand; including demand for low-income housing, industrial development or Horticulture that is not a land use.

Regarding the infrastructures and utilities servitudes proposed by the plan; in general, it is supporting the use of bulk service servitudes for uses such as public open space, and urban agriculture. The consideration to include urban agriculture as a main component the New Metropolitan Park in Cape Flats that is proposed on the Silica Sands land, encouraging integrate neighbouring communities and promote urban renewal. The park should include a diverse range of activities including opportunity for waterfront entertainment and businesses,

⁷⁰ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

residential development, cultural activities such as initiation sites, sports facilities, environmental and tourism education and passive recreation linked also to the proposed central conservation area (CoCT 2012).

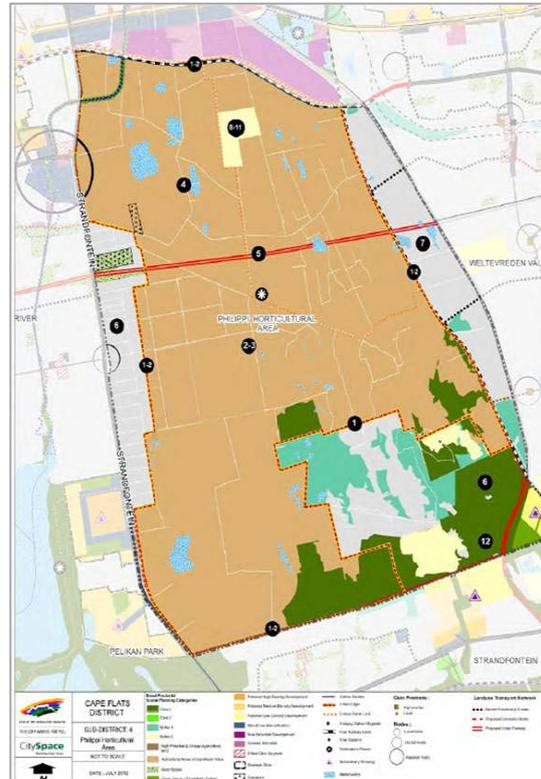


Figure No.61 Sub-District 4 Philippi Horticultural Area, Source: CoCT 2012.

Summary main findings and future planning implications of PHA

The main findings in regards to planning tools and policy perspective, environmental sensitive and agricultural suitability; as well as heritage assets and areas, local property development trends; are provided in this section and supported by City of Cape Town's report in conjunction with previous researches and official analysis made on PHA by 2012.

MAIN FINDINGS	FUTURE PLANNING IMPLICATIONS
Planning Tools and policy	
<ul style="list-style-type: none"> • Ineffective enforcement of the Zoning Scheme regulations. • Approval or "non-agricultural" 	<ul style="list-style-type: none"> • Reconcile the use of land with appropriate statutory prescriptions in Zoning Scheme regulations.

<p>activities (workshops, education facilities).</p> <ul style="list-style-type: none"> • Displacement of the primary land use due to conflict among land uses. 	<ul style="list-style-type: none"> • Introduce effective land use and environmental management. • Ensure functionality of different settlement areas and explore an appropriate urban form. • In line with SDF policies, the formal and informal residential settlements, as well as the smallholding area, need to be included within an urban edge. 	<ul style="list-style-type: none"> • 1200 hectares of horticultural production area that underpins the City's food security. • Highly favorable agro-climatic conditions (micro-climate, soils, groundwater); • Production capacity of up to five crops/ annum in south-western portion. • Proximity to urban markets and urban poor (urban agriculture, land reform). • Systematic erosion of the horticultural resource with western farms no longer functional given impact of non-agricultural uses (mixed-uses) up to Boom Road. • The horticultural area is still a significant agricultural resource with increased crop production in certain areas. • Production footprint is being eroded by some activities that are not allowed by province mandate such as equestrian, livestock farming, industry, educational facilities, illegal dumping, informal residential settlement, theft and security threat. • The size of properties is not a 	<ul style="list-style-type: none"> • Manage horticultural area as an agricultural area, including appropriate zoning and reservation. • Secure horticultural area through possible property consolidation and expansion to reinforce food production at an affordable cost and security.
<p>Environmental sensitive and resource value</p>			
<ul style="list-style-type: none"> • Production footprint of horticultural resource systematically being eroded through invasion by non-agricultural and mixed-uses, fuelled by speculation that the area is earmarked for urban development. 	<ul style="list-style-type: none"> • Horticultural area requires reservation and appropriate zoning to restrict "non-agricultural" land use intrusion and impact. • Hydrological features (wetlands) to be employed as spatial structuring elements and the functionality of surface and groundwater systems maintained. 		
<p>Agricultural suitability</p>			
<ul style="list-style-type: none"> • Conflicting with the objectives between policy of the Spatial Development Framework 2012 and Zoning Scheme Regulations 2012 for the PHA and urban agriculture, as well as protecting the PHA as an "Agricultural Area of Significant Value". 	<ul style="list-style-type: none"> • Urban edge delineation to give effect to SDF policy on the PHA and urban agriculture. • Position urban edge to maximise and secure extent of horticultural area given its current and future role in food security, especially for the urban poor. 		

<p>determinant of their horticultural suitability, given evidence of viable organic farming on small properties.</p> <ul style="list-style-type: none"> • There is no clear distinction between bona fide horticultural properties and smallholdings, which impacts negatively on agricultural production. • Erosion of food security for the city, especially for the urban poor, as well as employment and land reform opportunities. 	
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Heritage Assets and Areas

<ul style="list-style-type: none"> • PHA cultural landscape being eroded by mixed non-agricultural land uses, such as mining of sand dunes, dumping of waste and the expansion of formal and informal human settlements. 	<ul style="list-style-type: none"> • Protect heritage of PHA by actively reversing negative land use activities. • Urban edge delineation and its management to secure the heritage value of the horticultural area, and where possible rehabilitate degraded areas.
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Local Property Development Trends

<ul style="list-style-type: none"> • Horticultural area, despite negative land use impacts, poor public perceptions and inadequate Zoning Scheme prescriptions, is expanding its footprint in certain areas given demand for production land. 	<ul style="list-style-type: none"> • Urban edge delineation required to address land use uncertainty and its negative impact on property investment and economic performance, as well as promote consolidation of properties/resources outside the edge. • Need for appropriate agricultural land use
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<ul style="list-style-type: none"> • Insecure economic investment climate due to negative mixed-use impacts, security threats, as well as uncertainty regarding future land use status; • Property speculation due to approval of non-agricultural land uses and pending large-scale urban development applications; • Under-utilization of farms where owner has retired or sold to speculators; and • Consolidation of properties through purchase or lease to increase capacity of production units. 	<p>diversification to ensure economic viability and sustainability.</p> <ul style="list-style-type: none"> • Land use management mechanisms need to be introduced to foster positive mixed-use activity and discourage negative activities. • The size of horticultural properties is not an urban edge determinant, as some small properties have viable intensive agri-enterprises.
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Table No.15 Summary main findings and future planning implications of Philippi Horticultural Area, Source: Adapted from CoCT 2012, p 4,6,8,10,12-14.



RESEARCH FINDINGS AND ANALYSIS

8



Cape Town has been faced a long period of transition; with valuable underdeveloped land that are suitable for implementing sustainable initiatives to address the main challenges. It has been seen in this research that urban agriculture can work as a strategy to reconnect city through a bottom up approach. Urban agriculture has the potential to break unbalanced situations that still alive and have marked the history of Cape Town throughout years. Reconnect, in a sense to build up the city from the grassroots level in a process that integrates all type of communities and assists to reduce disparities.

Communities actively engaged in urban agriculture are mostly located in poorer areas. They are coming up with workable strategies that can be replicated along the city. NGOs are playing the role of the leadership, creating the sustainable vision of urban agriculture and beginning to bridge the gap among policy formulation, strategic planning and implementation process. Urban agriculture in Cape Town is facing a new stage in where is possible to analyze the tools already set up and the new ones for its proper integration into the spatial planning agenda.

The research findings and further analysis came up during the interviews administered among the main stakeholders involved, the field research, the observations made and the assumptions of the current integration process of urban agriculture into the spatial planning and land use management. Urban agriculture could play an important role in urban planning in Cape Town by linking to environmental, spatial, social and economic issues.

8.1 Legal Framework and Planning Tools in a Different Discourse

From the legal and planning perspective, Cape Town has integrated urban agriculture into the spatial planning and land use management. Urban agriculture policy has been set up by the local government as a strategy to tackle food insecurity, economic issues and reduce poverty. However, there are serious shortcomings in the implementation and a huge gap among policy

formulation, planning tools and implementation process.

The main findings regarding the policy rely on the absence of universality. The particular exclusionary approach of the urban agriculture policy is focused on poorer communities without including the total population. The inclusion of a food system into the strategic planning agenda should include all citizens in order to create dynamics that provides general benefits at economic, social, environmental and spatial level.

Cape Town is fundamentally divided city; it is reflected on spatial and social distinctions. High poverty levels and economic exclusion is based on apartheid and pre-apartheid policies which created colour distinctions and apartheid economies. Urban development agenda and the policy framework of Cape Town have intended to endorse the main urban priorities; in the strategies proposed, but the discourse on apartheid inequalities remains on the scene.

There is a huge gap between the policy formulation and the implementation process. There is a gap what the policy says and what the city structure allows and what works for people on the ground. There is a disconnect city structures that imagine people to be kind of stable, consistent and operating with the formal rules⁷¹. Planning urban agriculture around a common vision to create a more sustainable city with concepts on the same page is important to scale up ideas, programmes, and initiatives.

There is an important lack of coherence and coordination between the legal framework and the planning tools in regards to urban agriculture. In fact, there is not a common understanding what urban agriculture means; it is reflected on the different meanings, objectives and strategies developed by the Urban Agriculture Unit, Spatial Planning department and Land Use Management, as well as in the legal planning visions supported by the urban agriculture policy, the Zoning Schemes

Regulation and the Spatial Development Framework. For instance, while the urban agriculture policy contemplates the inclusion of keeping livestock, the main planning tools do not allow keeping animals in the urban area. Besides, the new criteria already set up for the Urban Agriculture Unit for identifying land are contemplating the guidelines to keeping livestock; in this case, it is expected that the Environmental Department provides the proper support through Environmental Impact Assessment required.

Coordination, discussion and interaction among departments are less frequent than expected. On one hand, urban agriculture is not on the top of the priorities but is a growing phenomenon that entered into the debate in the last two years, being included in the urban development agenda in Cape Town. On the other hand, urban agriculture remains isolated from the political agenda; lack of political will in sustainability matters does not assist to catalyst the productive use of land with the implementation of urban agriculture projects in Cape Town.

The lack of multistakeholders participation in policy and decision making process is one of the biggest challenges to be solved in short time. When there is a place to debate around common objectives, challenges, strategies and actions; it is possible to develop strategic thinking and build up together the new vision of urban agriculture. An institutional, private, NGO and community learning is created through the discussion and debate based on positive and negative experiences and innovative and creative ideas.

The Creation of a partnership approach among stakeholders that puts interests together and brings to the debate multiple experiences of the organizations is important. Formal and informal relations among stakeholders should be flexible with mutual commitment and permanent learning. The commitment in favor of community initiatives and the lack of alliances and creation of general positive vision around urban agriculture concept are still missing in the urban development agenda of Cape Town.

⁷¹ In interview with Professor Jane Battersby Lennard, administered by Gloria Gaviria, on October 23rd 2012 (Annex 16)

Lack of leadership in creating a space and proper plan which helps to catalyze urban agriculture from the institutional level is not already identified. From the NGO level the leadership is clear. NGOs have been working on particular areas with little government support; bringing community organization capacity together, planning, technical and management capacity among others. NGOs can begin to close the gap between policy formulation and implementation but support from local government and participation in policy and decision making process is needed. Urban agriculture in Cape Town is in hands of the NGOs that are the voice of the community, urban agriculture can build up from the grassroots with a greater commitment and permanently supported by the NGOs, private sector and the City.

Institutional level: more reactive than proactive?

The Urban Agriculture Unit is the main entity leading the institutional initiatives. It is playing a reactive role with projections to be proactive in future time⁷². The major contributions of this Unit have been to give recognition to urban agriculture through policy formulation, the revision of the second version based on sustainability principles and eight new key actions with time frames that intends to put together on its strategy and implementation⁷³. Another contribution is the convocation of international discussion to build a debate around urban agriculture at international and local level; experiences from Canada, Nairobi and Harare have been taken into account to build the policy.

The lack of human resources that not enable to be more proactive; it is a small unit in which only three people devote part time to work on it; there are too much expectations around in this Unit that is doing such titanic effort to survive without enough financial resources and low governmental recognition. The Urban Agriculture Unit requires to make biggest partnership

alliances with NGOs, private sector and community to expose at governmental level how people on the ground are actively engaged in projects that are making the difference and why urban agriculture deserves more recognition in the planning agenda and more financial resources to create enabling conditions and strategic initiatives.

The miscommunication among departments is a big stumbling block⁷⁴. Even though all the departments are working on interesting initiatives, strategies and policy formulation, the lack of communication generate some delays in development process and overlap efforts in the same interests. For example, Spatial Planning Department is working on strategies to protect the main urban agricultural area in Cape Town that has significant value while the Housing Department is looking for strategies to release this land for social housing development.

There is not enough information to get the dimension on urban agriculture in Cape Town. NGOs have clear understanding where the gardens located are and with how many gardens they are working with but at the institutional level there is any control on this information. They have a list with projects but there are not sufficient data, there is not digital mapping with the whole coverage. This makes complex the decision making process and the development of strategic interventions; they do not have basic tools to work with and create measurement parameters to analyze who is benefited, where they are located, what kind of urban agriculture they are doing, how many people are involved in this activity, how many community or home gardens are already set up, how the informal economy is impacting through this projects, how are the levels of engagement and commitment, how urban agriculture is impacting the city, how is reducing the unemployment rate, poverty, food insecurity issues and so on. There are many questions and a set of indicators at social, health, environmental, economy and spatial dimensions that can help to bridge the gap in the recognition process, the assignation of resources among other areas. They have been not created an assessment criteria that help to

⁷² In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

⁷³ In interview with Assistant Officer Spencer Fowlie, administered by Gloria Gaviria, on October 15th 2012 (Annex 04)

⁷⁴ See Annex 04

measure efforts and encourage the local, provincial or national government to allocate funding for urban agriculture.

Furthermore, the ability of local government to engage communities in Cape Town is very lower. In general, community members have a negative perception about their political and official leaders. There has been a lack of trust between citizens and politicians, as well as lack of trust among people living in proximity since many years ago⁷⁵. Each community has their own leader. Mostly they provide recognition to some initiatives promoted by NGOs because they have been seen good results. Local government needs to put hands on urban agriculture initiatives and get good results, be effective and generate credibility.

8.2 NGOs and Private Initiatives: Strategies to Facilitate Planning and Dignify Communities

The crucial role that NGOs are playing in Cape Town has generated significant impacts on urban agriculture. NGOs are training people around democracy. In fact, they are engaging and driving society towards being more sustainable; building communities, and their skill capacities in urban agriculture matters. There is much more to learn from the strategic thinking and actions developed by NGOs in terms of management capacity, community organization and planning among others.

NGOs are creating a credible vision for urban food production. They believe in food systems in which the main vision is urban agriculture as a livelihood strategy for people on the ground. They are empowering communities to develop creative ideas around feed the city. They have the vision to go beyond the borders of urban agriculture as a phenomenon; seeking permanent sustainable movement that makes contribution against inequalities and disparities in the city.

Marginalized communities have been receiving the opportunity to learn how to grow vegetables in their own dwellings or at community level. NGOs are supporting around 3500 micro-

⁷⁵ In interview with Matthew Thomas, administered by Gloria Gaviria, on October 26th 2012 (Annex 18)

farmers, mainly in the townships: Lavender Hill, Constantia, Khayelitsha, Nyanga, Gugulethu, Delft, Phillipi. These gardens in turn feed at least around 15500 family members plus some schools and small portion of wealthy communities in Cape Town⁷⁶.

The two NGOs that are leading the process are Soil for life and Abalimi Bezekhaya focused on home gardens and community gardens respectively. They have the common vision around provide the tools to people and support to use these tools. Basically, these NGOs targeted similar objectives: to provide people with food security, it means that they are able to feed their family all year round from their garden and improve health and nutrition. The other aims are to rebuild the soil, recycling and caring for the environment, as well as contributing to reduce poverty levels through sustainable economic alternatives⁷⁷.

Both of them supply permanent ongoing extension, training, follow up, technical support, advise, planning, services which make the urban agriculture projects work⁷⁸. The local government does not have the proper extension or permanent outside technical support to any project in Cape Town due to the lack of human and financial capacity. Therefore, the interaction between the Urban Agriculture Unit (UAU) and NGOs is considerably low. NGOs work as partners by the city and interact in a few initiatives but they do not get any financial support from the UAU; they are financing themselves with the support of different private funders and some donations from individual people. Therefore, NGOs are making alliances with the private sector to implement projects in public facilities such as schools and clinics in order to get access to land, good quality of water and security.

⁷⁶ Information provided by Rob Small, Head of Abalimi Bezekhaya and Louise Vaughn, Manager of the training team of Soil for life, in interview administered by Gloria Gaviria, on October 16th and 12th 2012 respectively (Annex 14)

⁷⁷ In interview with Manager Louise Vaughn, administered by Gloria Gaviria, on October 12th 2012 (Annex 13)

⁷⁸ In interview with Rob Small, Head of Abalimi Bezekhaya, administered by Gloria Gaviria, on October 16th 2012 (Annex 14)

Another fact is that NGOs are not united a common voice of all the issues that are surrounding urban agriculture. They are not working together to hold efforts in increasing awareness on the importance to integrate these sustainable initiatives into the planning agenda in order to receive proper support and work hand in hand with the local government.

On the other hand, Private Sector is introducing to the urban agriculture discourse the commercial and economic components. They are supporting programmes and projects in order to facilitate job creation and reduce poverty, foster economic empowerment and entrepreneurship, facilitate training opportunities.

Currently, Phillipi Economic Development Initiative (PEDI) is playing a major role in facilitating access to the unique "Fresh produce market" located in Phillipi area in Cape Flats District. They intend to serve local emerging urban farmers and provide training on site to junior urban farmers. On one hand, the training center has the capacity to train 100 people per year. On the other hand, the market has the capacity to processing and packing vegetables, chilling and cold storage facility. This market has a strategic location near N2 highway which ensures easy access for shipping the products to the city center⁷⁹.

The economic vision of PEDI relies on creating urban farmers with commercial vocation; this vision is not included into the policy agenda. The main purpose of urban agriculture policy is not focused on making a profit through commercial activities. "The primary focus of this policy document is on agricultural activities by the poorest of the poor within the urban (built) areas. It does not include commercial farming and other agricultural activities outside the urban edge of the City" (CoCT 2007, p.2).

From the organization perspective, they are thinking to implement a large project in Phillipi area with the support of Netherland's Government. This project is composed by 2 hectares with 40 tunnels; with a value of 5,000.000 rands (PEDI 2012). The land that they

are intending to use is public open areas under the private responsibility. This area has agricultural significant value and some urban agriculture projects are currently located on an area called Phillipi Hoticultural Area.

The main limitation of the private sector is reflected on the Fresh Phillipi Market that is working in low capacity due to the lack of enough financial resources. This urban agriculture center has the capacity to process all vegetables produced by urban farmers; ensuring good standards of quality and constant production. What is urgently needed is more financial support to implement the food system and deliver the products along the city. People on the ground are able to feed Cape Town with excellent food quality that enhances nutritional standards and improve their economies among other benefits.

The first questions that arise at the community approach are based on the perspective of NGOs, private sector and institution; in two lines: lack of commitment or lack of public engagement? Some projects have failed because there is lack of commitment from community members who were involving in urban farming activities. Most of them are looking for better opportunities to survive in this apartheid economy; and urban agriculture is introducing in their environments as an economy viability to improve their living situation. Farming in Cape Town is not necessarily cheap, and they required the support from local government, NGOs or private sector to make their projects successful. When the support is on the place and there is the proper social engagement; then, something more is needed, a good leader who drives the process and ensures the permanent commitment of group members. The role of Community based Organizations is important to create awareness and support.

Community is confronting the situation to have the tools in their hands such as skills capacity, education, training but they do not have access to land for implementing their own initiatives. Most of them are struggling with one of the main challenges in urban agriculture in Cape Town. They rely on NGOs to solve their

⁷⁹ In interview with Mr. Thomas Swana, administered by Gloria Gaviria, on October 25th 2012 (Annex 18)

stumbling blocks but much more is required to cope with the whole requirements.

8.3 Spatial Planning and Land Use Management

Positive and Negative Effects to Integrate Urban Agriculture into the Strategic Planning

The vision to integrate urban agriculture into the spatial planning agenda is generally well seen among the stakeholders in Cape Town. After finishing the research process is possible to identify the positive and negative impacts to integrate urban agriculture into the urban spatial discourse and the land use management approach.

From the city perspective it is clear that one of the most important effects will be creating a common understanding of the concept of urban agriculture and its benefits of it, as well as understanding why urban agriculture can easily contribute to food security. It is important to create a credible vision for urban food production; with the proper support of official institutions, private sector and NGOs. It is important to create a common meaning about urban agriculture among official departments, in this way the legal framework and the planning tools will not overlap each other.

The city has plenty vacant land with overcrowded vegetation and there are a lot of dumping and illegal activities. It is very clear that the Urban Agriculture Unit does not have the human and financial resources to clean these areas and launching urban agriculture projects⁸⁰. If the city can reclaim those spaces by putting productive use on it with urban agriculture, it will be positive. The city will be greening and the departments will work on sustainable initiatives. The Urban Agriculture Unit should cooperate to assist all these new projects in the new areas with the support of the other stakeholders involved.

Furthermore, it has been registered an extremely lack of safety in these public open spaces; high levels of criminality are surrounding these vacant lots. If people start to work on these lands under the support of government, NGOs or

⁸⁰ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

private sector, even in a temporary way, these areas will be safer⁸¹.

One of the biggest positive effects is the identification and allocation of land for urban agriculture; that also could have negative effects that are explained further. The Spatial Planning Department and the Urban Agriculture Unit are working together and preparing the framework for land to make it suitable. The criteria to look at for identifying land should be accompanied by the criteria to access to water, the quality of the soil; including soil tests are needed to ensure the proper parameters, as well as the location in proximity to areas that communities interested in doing farming activities are located⁸².

In addition, the aforementioned implies to create a database with the land of the city that the spatial planning will identify; the creation of zones for implementing urban agriculture will be a reality. Therefore, the Spatial Planning Department in conjunction with other departments can create the digital mapping of existing areas; this step is needed to measure the sustainable use of land through the implementation of urban agriculture.

Urban agriculture will get the status of land use⁸³, it implies that is possible to create mixed use development with housing and business. The city should promote this as a sustainable way and it is also an economic opportunity. This discussion will be explained in chapter number ten.

The inclusion of a food system from the spatial planning perspective will be considered. If urban agriculture becomes priority on the spatial planning agenda, poor areas and the city would be more resilient, and can respond better to natural crisis. Some cities are not producing their own food; transport is needed to supply

⁸¹In interview with Urban Manager Claus Rabe, administered by Gloria Gaviria, on October 11th 2012 (Annex 02)

⁸² In interview with Assistant Officer Spencer Fowlie, administered by Gloria Gaviria, on October 15th 2012 (Annex 04)

⁸³ Information provided by Schalk De Jager, Senior professional Officer of Land Use Management Department, City of Cape Town, in interview administered by Gloria Gaviria, on October 17th 2012 (Annex 05)

vegetables. Cities as was mentioned before "need to feed themselves" and Cape Town is not the exception. A 'food security strategy' (which does not yet exist) would assist greatly in supporting areas of agricultural significance and smaller plots, getting greater integration and political support⁸⁴.

Negative Effects

The negative effects will be focused on the conflict of people that want the land for something else than urban agriculture like housing⁸⁵. Urban Agriculture Unit is doing major efforts to set up the criteria required for identifying and allocating land, as well as making an alliance with the Spatial Planning Department. The big questions that arise during the research process are: should the Urban Agriculture Unit develop a criteria for the implementation process, how to ensure that this land will be used for urban agriculture, who and how they are going to monitor and evaluate this land adjudication; when is absolutely clear that the Urban Agriculture Unit has a human and financial capacity problem.

One of the major negative effects is the competition for land for other uses; if a big piece of land is designated to urban agriculture project, the land will become sterile for housing⁸⁶. The land becomes farming area and the city will be not longer to develop houses for people. For these reason, when the land has big dimensions is better to use in a temporary way, there is something that the criteria to identify land for urban agriculture purposes does not contemplate or clarify. In this way the priority is housing, bigger pieces of vacant land will be not designated to urban agriculture projects.

When urban agriculture is integrated into decision making and policy agenda, the opportunity to increase its scope and scale becomes a reality. If this opportunity is created, there will be more options to grow vegetables

and job opportunities among other benefits. Created the opportunity, people who drive and the leaders of the projects are needed, as well as ensuring products' quality. The negative aspect about the aforementioned is that the local government is doing very little in the promotion of social engagement. Urban agriculture is not attractive for youth communities⁸⁷; try to include these people that are on the top in the unemployment rate will be a complex task but not an impossible mission.

There are cultural complexities; there are some jealousies from people who are not success or not doing well and that leads to a lot of destructive behavior⁸⁸. It is important to manage this aspect carefully and build group dynamics. Local government has to figure out how to build up people to think about each other and the responsibility. The models of respect to public space interventions created by Violence Prevention Urban Upgrading Programme are good models about how to handle this kind of dynamics.

Furthermore, if there is more demand on urban agriculture, the knowledge to farm needs to be created. The city is not prepared to provide planning, technical support, training, skills development, management capacity. The city has to create partnership approaches with private sector and NGOs; they can assist but more human and financial resources are needed due to the fact that monitoring and evolution play an important role in the strategic planning discourse. The way that local government and all role players engage the community is crucial. Good leaders and permanent commitment is required to facing this challenge.

Another big difficulty is the ability to supply on a regular basis ongoing good quality fresh produce which limits the market. No supermarkets are prepared to buy from small growers as they do not believe that their supply

⁸⁴ Information sent by Principal Spatial Planner Kier Hennessy, via electronic correspondence, on November 4th 2012 (Annex 11)

⁸⁵ In interview with Engineer Stanley Visser, administered by Gloria Gaviria, on October 11th 2012 (Annex 01)

⁸⁶ In interview with Town Planner formation provided by Peter Gray, administered by Gloria Gaviria, on October 11th 2012 (Annex 03)

⁸⁷ In interview with Mrs. Katharine Miszewski, administered by Gloria Gaviria on October 18th 2012 (Annex 15)

⁸⁸ In interview with Social Anthropologist and Psychologist Louise Vaughn, administered by Gloria Gaviria, on October 12th 2012 (Annex 13)

will be regular and/or ongoing⁸⁹. Miszewski exemplifies the case of Woolworths, it is one of the larger, up market retail companies has embarked on a supported growing project to up skill or assist farmers in their production of preferably organic vegetables, milk and other products; but this is not aimed at small growers in poorer areas. Nonetheless, it is a remarkable endeavour by the corporate sector to make a difference. However, private sector is working on the economic aspect and they have a defined market space that should contribute to the economic viability and to ensure quality and constant production. This market place can work as a facility where growers could sell their fresh produce directly to them, and after that, they can do the cleaning and packaging process to deliver the products in the supermarkets located along the city.

It is possible to reflect on that previous analysis that urban agriculture can be included successfully in the strategic planning, if the arguments are carefully well constructed. The City can build up this process taking into account the positive and negative effects mentioned in this analysis, which in turn, took into account all the stakeholders' opinion and made reflections and analysis on that, in order to generate workable solutions at city management level and decision making process, that enable to integrate urban agriculture effectively into the planning agenda. It is important to put urban agriculture into the agenda and have access to make it a formal planning issue with the political awareness of it.

Access to land for urban agriculture: why not use vacant land?

During the research the main challenges regarding urban agriculture were clearly identified in chapter number 5.1. In the top of the main issues, the lack of access to land is leading by far all the challenges; closely followed by lack of affordable water with good quality. Other challenges that were identified, lack of commitment and leadership among urban farmers, lack of engagement from local

government in urban agriculture, lack of political will, and lack of human and financial resources are the main current issues. The percentage at the local government level is too low in addressing all these challenges.

Another complex issue related to get access to land is the long procedure that demands to apply for a piece of land in Cape Town. It will take two years or more. When there are sustainable initiatives, people who want to drive the process, social engagement, skills development, entity that is able to follow up, market to sell the products and people waiting to be feed but there is not land; there is not much more advance on urban agriculture and the momentum is lost.

More limitations to access to land are closely linked to physical and spatial considerations. There is plenty open public space available in Cape Town, but it is not accessible. Even though it is suitable for implementing urban agriculture; some areas are not in proximity to the communities, or are considered to be of biodiversity importance, or not near a water source with good quality, or some of them are reserved for other purposes without implementing any temporary use. But when these public open space is not utilized; the possibility to convert these areas into dumping, unsafe zones or to be vandalized is higher. This situation causes a chain reaction generating problems such as public health, violence and environmental degradation among others. Urban agriculture with some regulations is an alternative to be considered for those public open areas. One of the many reasons why local government has not decided to implement urban agriculture in those pieces of land is because they want to avoid informal housing development⁹⁰. In some cases, there are people who farming live in shacks into the farm area; and they are using the land productively. It works for them, but it does not work for the "city structure"⁹¹.

⁸⁹ Information sent by Senior Officer Katharine Miszewski, via electronic correspondence, on October 22nd 2012 (Annex 15)

⁹⁰ In interview with Town Planner Peter Grey, administered by Gloria Gaviria, on October 11th 2012 (Annex 03)

⁹¹ In interview with Professor Jane Battersby Lennard, administered by Gloria Gaviria, on October 23rd 2012 (Annex 16)

Allocating land for urban agriculture is a complex issue; there is not a policy about how to make land available for urban agriculture; only a set of criteria that have been set up to facilitate the process which is a big step but not ensuring success on it. The idea is to use existing resources available; there are some options for making land suitable for implementing urban agriculture such as use vacant temporarily public open land which provides the option of promoting multifunctional land use. Furthermore, the use of public or private land located in some public facilities such as schools, clinics, libraries, old age homes, council buildings in order to ensure land availability, access to water provision, electricity and security to the gardens.

Competition among land uses; why priorities in a divided city?

All the official departments without any exception recognized two main arguments; on one hand there is an imperative need for housing development according to the huge and urgent demand. On the other hand, there is a competition among land uses. Land for housing is a reality and is on the top of the priorities (backlog of over 400.000 households)⁹². Other land uses such as commerce or industry are in the list of interests. Urban agriculture is struggling to get access to land and is considerably affected by this permanent competition among urban functions. Looking for inclusive alternatives such as mixed housing development, in which urban agriculture works an economic complement is an alternative still largely unexplored.

The Spatial planning department is in charge of making suggestions about the urban functions that should be implemented on the land. Land Management Department establishes the zonification to implement the functions and Property Management Department will decide the administration of this land based on the applications, needs, criteria and circulations that will provide faculties to this department to formally proceed on the use of land. The two first departments are supportive urban

agriculture, including principles and policies to this effect in the planning policy documents.

Land needs to be assessed in relation to major competing uses and a food network similar to the biodiversity network need to be defined⁹³. Furthermore, land needs to be classified on the basis of land use rights and characteristics. For instance, the status quo, ownership, zoning, etc. As well as designing options and testing the land taking into consideration targeted stakeholders.

The Urban Agriculture Unit and Spatial Planning Department are working forward to identify land; but the production patterns and possible uses of land types need to be defined in order to avoid competition. It forces to look into detail not only land for allocating urban agriculture. It is important to analyze the implications of zoning land towards a mixed use development; understand how, Community gardens with market area, housing projects with urban agriculture on public space or public facilities with productive land. This alternative more than promote competition are looking for integrating land uses and reconnect the City.

Currently, the complex issue that affects urban agriculture is that housing, commerce and industry are formal land uses. Urban agriculture is considering an activity or consent use that can be implemented in some areas. Land uses and activities are not in the same level of discussion and priorities to make decision on them are different. Urban agriculture is in a competitive disadvantage compared to the other land uses. It is expected that in the new zoning schemes urban agriculture will get the status of legitimate land use; the new questions that arise in this research are if the current situation will change and what will be the major impacts on urban agriculture in Cape Town with this new formal recognition. A discussion around this topic will be developed in section 8.6.1.

⁹² Information sent by Principal Spatial Planner Kier Hennessy, via electronic correspondence, on November 4th 2012 (Annex 11)

⁹³ Information provided by Architect Gita Goven, Chief of ARG Design, City of Cape Town, via electronic correspondence, on November 15th 2012 (Annex 20)

8.4 Urban Agriculture Projects as a Strategy to Reconnect City

Home and community gardens are bottom up approaches in which people at the grassroots level are working in building up a sustainable city with the support of NGOs within a legal framework. However, the most important planning tools and policies have evidenced some gaps in the implementation process; these new approaches are tools to bridge the gap among formulation of strategies and implementation process.

All these sustainable initiatives are seeds that could be seen as potentials for a more just and sustainable city's development; building up the concept of food system that can contribute to reconnect the city. All of these gardens, in these productive public spaces are seen as starting points that are creating the new visions with implications on a broader scale of urban agriculture in Cape Town.

The majority of home, school and community gardens are located in Cape Flats District in which apartheid planning has created impoverished communities and neglected landscapes. Since the apartheid era, not a single green area has been built in this district by the local government. At the same, critical natural areas have been lost or degraded by pollution and uncontrolled urban encroachment. Cape Flats has a crucial landscape that is in risk of degradation and the connectivity with productive green areas through urban agriculture could be seen as a solution to improve environmental concerns.

The public open space in this district is characterized by the invasion of numerous of informal settlements on these areas; combined with poor residents and high density urban settlement. Even though there are plenty green areas within the district, there is a poor public open spaces quality; offering few opportunities for people to engage in passive recreational activities close to where they live.

There are many challenges surrounding the poorly developed open spaces due to the fact that most of them are underdeveloped, promoting insecurity, vandalism, drug trafficking

among others. In addition, many large natural and open space areas relatively close to employment opportunities mean high risk of land invasion by urban poor inhabitants.

The Spatial Development Framework promotes the inclusion of urban agriculture in public space as a livelihood strategy in this district; recognizing high levels of food insecurity, unemployment rate and poverty. Even though this district has infertile land, NGOs are teaching people how to produce their own food and building the soil. The creation of home and community gardens will generate a positive impact in the area, using public open space areas, making landscape inclusive and sustainable for the city. However, this urban agriculture development should take into account the wider access, linkage needs and public open space provision requirements.

In terms of Spatial Planning categories for urban agriculture in this district, they are divided into two aspects. First one, high potential and unique agricultural land worthy of long term protection given unique production, cultural and heritage attributes. Second one, agricultural areas of significant value in which is important the existing use, the potential and emerging agricultural use due to new cultivation technology, availability of irrigation water, new varieties and crop types and food security.

Home Gardens

In Cape Town 77% of households are food insecure, "only 5% households obtain food by growing it themselves" (Battersby 2011, p.30). Urban population in Cape Town has registered health problems related to improper diet. Access to food through local producers and small-scale methods of production are important keys to assist to tackle food insecurity. The act of producing food is also a factor that is generating further processes of change in the creation of new networks and possibilities for individual development. Home gardens are working in favor of having physical and economic access to food that meets people's dietary needs and their food preferences.

In terms of home gardens, mainly, the NGO Soil for Life is working with the inhabitants, teaching

them how to grow their own food all year round. Community members are starting gardens by connecting hands in the soil and by growing safe and clean food.

The main difficulties that these home gardens analyzed are facing refer to community complexities. They have to fence their public open space area in order to protect their products from thieves and vandalism situations. Although the NGO have taught them how to grow products, using the minimum of water, they are using communal water that generates conflict situations among community members.

Regarding the main benefits, they are doing gardening in a very small scale, occupying a small piece of land, using the land in an eco-efficient manner; growing organic vegetables and recycling organic waste and materials available; producing more with less for feeding their families.

They are growing organic healthy products according to the season and ensuring food for all family members with the nutritional balance required. They are connecting with the soil in different ways, developing their physical bodies, exercising themselves and beautifying the area in which they live. They are ensuring healthy life and minds to face all the challenges ahead.

The type of land that these gardens are located is illegal area, considering public open space encroachment and in future time these dwellings will be relocated or the area will be upgrading. The gardens are not following the zoning schemes regulations and spatial development strategies, according to the planning tools these gardens are illegal due to the fact that these home gardens need a consent use for using public open space; for these reason, the urban farmers have fenced the area to protect the garden, as well as including it into their house. However, according to the urban agriculture policy these gardens are legal and receiving permanent follow up by the NGO without any support from the Urban Agriculture Unit.

Community Gardens

Community gardens and urban farming areas are contributing to feed the city in 35% (Palmer

et al 2012, p.21). The core of community gardens is a process starting from community empowerment, engagement and permanent support. Community gardens are producing fresh food locally in accordance with seasons, leading to goods that are more attractive on the market due to their taste, nutritious value, cost and minor ecological impact. These gardens are creating job opportunities, embracing biodiversity, educational and cultural identity, while implementing low-tech water harvesting, food production and social programmes.

Urban farmers have gotten the appropriate knowledge, competency, leadership skills to develop and spread their expertise and capacities through NGOs support. In the case of Fezeca-Gugulethu garden; urban farmers count with a good leader who is driving the process and ensuring the permanent commitment of group members, guarantying the success of the garden. Urban agriculture for these older urban farmers is not a livelihood strategy is a way of living.

The main benefits perceived by the community members are focused on healthy and nutritious food produced by them, the support of the NGO working as a mean for providing skills capacities and economic benefits that assist to improve their economies and guarantee a monthly income. The main difficulties are focused on consuming electricity and water affordability.

In regards to access to land and main Infrastructure, this garden is a good example of what would happen with a commonage land is used in an efficient way. Fezeca-Gugulethu garden is one of the most successful examples that are using vacant plots in public open space in a sustainable way, producing food and contributing to reconnect the city through this green movement from the ground level. This area is protected by local government and it used to be a dumping area, recovered by these urban farmers through the support of the NGO Abalimi Bezekhaya

This garden is improving public open space that used to be an illegal dumping area. This is a productive green area that is the sustainable

scenario for creating and strengthening physical and social spaces where people and innovations can meet new relations, collaborations and deals among stakeholders. This sustainable initiative is connecting with the urban actors involved to benefit local community and other parts of the city, creating a sense of belonging among urban farmers to this public space with productive character.

This garden is following the main planning tools in Cape Town. On one hand, the zoning schemes regulations approved the consent use developing farming activities in public open space. On the other hand, according to the Spatial Development Framework, this garden is fulfilling the criteria established in terms of location, infrastructure and support. This garden is located in proximity where urban farmers live, they have the availability to afford water, even though they are harvesting water, they are creating a good quality soil without impacting the environment with pesticides or crop residues and the farmers are supported by a NGO in all the senses required to produce healthy food.

According to the urban agriculture policy this garden is legal and receiving permanent follow up by the NGO without any support from the Urban Agriculture Unit. This garden is in line with the key sustainable focus areas promoted by the policy in regards to awareness of and advocacy, within the legal and regulatory framework, supported by knowledge and technology transfer with expertise available permanently, Production and marketing and Youth engagement.

Assessing urban agriculture based on sustainable indicators

Assessing these gardens in Cape Flats through sustainable indicators enables the research to prove that to support the formulation and evaluation of the execution of policies, regulations and spatial planning strategies is needed to conduct a sample evaluation in current projects that are implementing urban agriculture in public space. There are approximately 3.500 urban farmers that are growing food in public open areas and the regulations and planning tools require to be formulated in harmony with the reality and

reliable information.

The Urban Agriculture Unit, the Spatial Planning Department and the Land Use Management should count with this type of information that will facilitate decision-making process, develop proper regulations, guidelines and criteria to allocate urban agriculture in public open space, as well as assisting in the integration and implementation process of urban agriculture into spatial planning and land use management.

The urban farming indicators selected to assess home and community gardens took into account the social, economic, environmental, health and spatial category.

The social category promotes thriving communities by bringing people of all ages together, developing peoples' skills and knowledge, and creating safe spaces. The indicators in this category enable to analyze the level of participation among community members into urban agriculture process, capacity development; commitment, training opportunities; as well as indentifying the main problems in empower community process.

The economic category assists to stimulate local economies, provide jobs and job training, and offer opportunities to earn income through sales of produce and other agricultural products. These indicators in this category enable to understand how the implementation of urban agriculture in this case study areas is impacting the local economy at the community and household level, as well as levels of training and coverage regarding food programmes and their impacts

The environmental category contributes to climate change mitigation and adaptation, stormwater capture, soil remediation and enrichment, and biodiversity. The indicators in this category analyze climate change strategies for mitigation and adaptation, as well as the eco-efficient use of land focusing on pros and cons regarding recyclability

The Health category helps improve access to, and affordability of, healthy food for

underprivileged communities, increase healthy eating, and increase physical activity

The spatial category assists in implementing urban agriculture in public space into cities as an essential element for sustainable urban infrastructure. The indicators in this category play an important role in the urban agriculture integration, policy compliance, soil conditions, implementation process, support and assist to identify the main advantages and disadvantages when the process is not monitoring.

The main benefits of the conducted assessment are focusing on various fields of sustainable development and work as instruments for decision-making. The categories evaluated in the home and community gardens expose mainly the advantages of implementing urban agriculture in public space.

The social category reveals the involvement of many urban farmers in productive public open spaces with proper support and ongoing extension of NGOs which are empowering community members to actively engaging and building notions of collective responsibility, culture of commitment and identity. As well as the educational category confirms that these public open spaces are scenarios that work as tools to raise awareness about how to transform unproductive area to a productive green area by generating a sense of belonging through connecting green hands in the soil.

The economic category exposes that these green productive areas are creating job opportunities to urban farmers to produce their own food and participate in the formal economy, access to formal markets and food system creation. The economic development and poverty reduction are taking place.

The environmental category proofs that these public open lands are using in an eco-efficient manner, avoiding illegal dumping, delinquency, insecurity, health issues among others. Urban farmers are recycling organic waste, improving soil fertility, harvesting water and improving the microclimate in this new productive infrastructure. The environmental degradation is reducing.

The health category asserts that through the result of using this public open area to grow food, healthy conditions and nutritional standards of community members are improving and letting the production of food to play a crucial role in the attainment of a better quality of life. Levels of food security are increasing.

Finally, the spatial category confirms that the implementation of urban agriculture in public open space has been providing long term qualities to neighborhoods livelihood and public properties, as well as ensuring a productive use of land permanently or temporary and fulfilling the regulations, avoiding illegal development, competition among land uses and unauthorised land uses. The appropriate use of land is playing a crucial role in urban agriculture implementation in public space in Cape Town.

8.5 Planning Vision of Urban Agriculture: PHA from urban planning perspective

The Philippi Horticultural Area (PHA) is the major green lung, centrally located within the City and has the sufficient urban arable land to feed the whole city. PHA has 3400 hectares which more than 1,200 hectares are suitable for food production. This area produces significant volumes of food, most of which goes directly into the Cape Town food system.

Although the inclusion of the PHA in the Spatial Development Framework and Zoning Scheme as an area of significant value with specific regulations is a first big step to protect it, its proclamation as a heritage asset is needed in order to transform land uses to non-agriculture activities (Hennessey 2012). CoCT further agree that this area is being jeopardised by the encroachment of non-agricultural uses; it is important to protect it from urbanisation, and careful management of the land uses and activities thereon and also of their interfaces with urban areas.

Strengthen and promote urban farming in the Philippi Horticultural Area, in conjunction with the conservation of historical agricultural setting is needed from the two main planning tools in Cape Town. Lack of clear directions in terms of planning environmental matters promotes inappropriate land uses, public space as

dumping areas and high pressure for urban development under this land. These should encourage local government to proceed with clear regulations that protect the main green lung of Cape Town (Ikapa et al 2012).

This land has had the historical character of providing a significant proportion of Cape Town's fresh produce and it remains a vital source of fresh produce for lower income City's areas. The urgent need of proper mandate will facilitate to take into consideration this land as means for food security in Cape Town (Battersby 2012).

In terms of protecting this productive land for urban development; Battersby 2012 argues that the lack of mandate and recognition of food insecurity in urban areas in the city make on one hand, a food production argument less powerful than an argument for middle-income housing or commercial development; on the other hand, a weak response to encroachment of development onto productive urban and peri-urban land.

This land provides the important opportunity to increase urban agriculture projects in public open space area based on well supported guidelines from the two main planning tools in conjunction with the urban agriculture policy. In this way, improving household food basket supplementation, local food security, as well as creating a food system that reconnect the city could be a reality.

The multi- stakeholders participation can positive contributes to bridge the gap among planning tools and process' implementation. Academy has provided the fact on the current threat on this land for the ineffective land use management; Private sector has the intention to invest financial resources in urban agriculture; NGOs have the capacity to provide training, education on agri-planning and agri-business, as well as providing the follow ups; community members have several urgent needs that can be solved trough involving on urban agriculture.

There are extensive public and private open spaces in PHA, the stakeholders are focused on protecting this area and implementing urban

agriculture, there are planning tools and policy framework for urban agriculture created; as well as there are some needs to provide food security, reduce poverty, unemployment rate, improve the environment and be prepare for food crisis, urban growth, peak oil among others. This area should be use a reserve land for urban development located in public open space with the capacity to provide the sustainability vision to Cape Town. The creation of productive sustainable infrastructure in large scale, that is able to feed the whole city. The big mission on protecting this area by using planning tools is the main challenge ahead for policy makers and urban planners in Cape Town.

8.6 Discussion

This section seeks to analyze three discussions around the role of urban agriculture in green planning. First of all, the new role of urban agriculture as a land use in Cape Town; its main impacts, responsibilities, benefits and constraints will be analyzed to provide the sustainable vision of this productive urban infrastructure. Secondly, the main tools to integrate urban agriculture into the spatial planning, land use management and policy framework; based on successful international case studies will be discussed in order to provide instruments for guidance the integration and implementation process of urban agriculture in Cape Town. Finally, the role of multi-stakeholder participation process and the future institutional key actors that should be integrated to the urban agriculture planning vision in Cape Town will be analyzed in order to contribute to provide support to the integration and implementation process.

8.6.1 The Impact of Urban Agriculture as Land Use

As mentioned in previous chapters urban agriculture will reach the official urban land use status in the Zoning Scheme regulations in Cape Town. Currently, it is consider an activity and consent use that is affected by the competition among land uses, in which housing is the main

priority and urban agriculture is in the back of the priorities⁹⁴.

Through a sustainable land use such as urban agriculture is possible to overcome some of the most serious urban challenges. It is important to provide recognition of it as land use strategy with the potential to work as a sustainable tool that enable to create job opportunities, provide food security, recreation and reduce poverty among others.

The formal recognition of agriculture as urban land use will facilitate the identification of tracts of land available, as well as identifying the types of agriculture suitable for such a location. These ones are important steps to set up proper criteria in the regulating policy framework and the main planning tools; Spatial Development Framework and Zoning Schemes regulations. If there is land designation, the priorities will be established and the competition among land uses will be reduced.

In order to support the new land use status, the main priority is focused on the coordination among departments; the coherence among policies and planning tools involved in urban agriculture. The legislation requires going in line with the planning tools in order not to overlap efforts and establishing common objectives. In special, to protect areas of significant urban agriculture value from uncontrolled urban encroachment.

Besides, the planning tools should include effective guidelines for implementing projects; taking measures to improve the suitability of available pieces of land by providing access to irrigation water with affordable cost as well as electricity and proper infrastructure.

The creation of a sustainable and productive urban infrastructure will be a reality, using vacant public open land. It will help to transform illegal dumping open areas into productive green areas and provide security. One of the major challenges of urban agriculture in Cape Town lies on land in terms of

availability, accessibility and usability. In conjunction with the formal land designation, it is important to create strategies to access to land, through assessing the availability of land for urban agriculture; establishing short, medium or long-term period of usability according to the city development challenges and priorities.

The land use recognition will enable to conduct land assessment to determine proper space to animal husbandry, aquaculture as important components, which currently are not included in planning tools, strategic plans, urban development plans, or land use management.

The new status of urban agriculture as land use implies important opportunities for the city in three main aspects: mixed use development, the use of vacant public plots and green productive public open spaces.

The proper integration between public open spaces and agricultural from the land use perspective will be a reality. After making an inventory of vacant open public land available; using public space suitable for implementing urban agriculture with all the requirements needed, will be a permanent or temporary way of using these areas for city's sustainable development.

The land use category will encourage developers and planners to incorporate of urban agriculture in mixed use development strategies with housing and business. The city should promote this as a sustainable way and it is also an economic opportunity that will result in major impacts to citizens. The priorities in terms of housing, green areas, enhancing economies will be integrated in this mixed use concept.

In addition to the aforementioned, it will an important impact in including space for individual or community gardens in new public housing development, slum upgrading and urban renewal projects.

The idea to use existing resources available will provide some options for making land suitable for implementing urban agriculture. The use temporarily vacant public open land, which

⁹⁴ In interview with Development Manager Andre Human, administered by Gloria Gaviria, on October 22nd 2012 (Annex 07)

provides the option of promoting multifunctional land use; allowing undeveloped land to be used under the negotiation between the owner and the user.

The new land categorization will enable to use of public or private land located in some public facilities such as schools, clinics, libraries, old age homes, council buildings in order to ensure land availability, access to water provision, electricity and security to the gardens. According to Lattuca et al 2005, the promotion of multifunctional land use could be done through encouraging community participation in the management of open spaces, where food can be grown in combination with other urban functions such as recreation and city greening.

Cape Town can adapt the concept of public open space with multifunctional land use character that could play a crucial role in city's development. This multi-functionality will enable to combine many land uses and activities such as public facilities, educational facilities, recreation, aquaculture, tourism, urban forestry, among others (Deelstra 2006); as well as combining natural habitat, food production, and educational, recreational and leisure activities. It will provide a holistic perspective for urban agriculture⁹⁵.

With the multi-functional character it is expected that some open public areas will be seen as reserve areas for future urban sustainable development which can be used for creating productive sustainable infrastructure with the capacity to feed the city and assist to tackle some current and future urban challenges.

The new urban function will stimulate owners of open vacant land; including institutional owners city or province to use as commonage land. It will be a medium to lease to organised farmer groups, by providing a tax reduction to land owners that do so or by levying municipal taxes on land laying. It will imply to formulate a City Ordinance that regulates the temporary use of vacant land in the city by providing vacant

public open land to organised groups of urban farmers (Terrele et al 2006).

It is important for the city's sustainable development, for the Urban Agriculture Unit, NGOs, private sector, urban farmers and community to count with zoning designation of land for urban agriculture in proximity to urban farmers and with the conditions required. For this reason, it is important to mapping land for urban agriculture, for registration purposes and for improving land use monitoring and evaluation (Mubvami 2006).

The Urban Agriculture Unit will have tools to be more proactive in terms of projects implementation. There will be land available and accessible to allocate projects to community, NGOs, private sector, etc that have the interest in launching a sustainable initiative. The human and financial support to this Unit will increase, providing the proper funds to foster urban agriculture throughout the city.

One of the main advantages for urban farmers will be focus on facilitating the land tenure and accessibility. They will not have to submit land applications and apply for long process regarding rezoning areas for implementing urban agriculture. The consensus use concept in which an activity proposed in a piece of land is evaluated for rezoning use according to the regulations stipulated in the zoning schemes, will disappear to give way a proper location of urban agriculture projects base on certain criteria established by the main planning tools and legal framework.

All the projects regarding urban agriculture will be assessed from the environmental perspective as a strategy top regulation in which the projects will be analyzed in order to prevent impacts and risks involved in the implementation⁹⁶. According to the Environmental Management Act there is list of activities that trigger the requirements for the environmental impact assessment or basic assessment that should be consider to evaluate urban agriculture projects.

⁹⁵ In interview with Assistant Officer Spencer Fowlie, administered by Gloria Gaviria, on October 15th 2012 Annex 04)

⁹⁶ In interview with Town Planner Peter Grey, administered by Gloria Gaviria, on October 11th 2012 (Annex 03)

The active farmer participation in policy formulation and management practices to be adopted by urban agriculture in the various locations will be useful to maintain the projects within the environmental regulation.

After the formal legalization of urban agriculture as land use; many complements are needed, such as the provision of technical assistance and training to urban farmers to promote more sustainable production, processing and marketing techniques; as well as permanent support among stakeholders to enforce the policy, programmes, strategies and action plan in compliance with their own roles in urban agriculture.

However, political thinking in sustainability matters is urgently required to assist to catalyst the productive use of land with the implementation of urban agriculture projects throughout the city. Without political will, changing land use regulations will be not enough⁹⁷. It is important to count with political support, better results, better participation in planning and better promotional of the benefits of urban agriculture to the general population⁹⁸. Generation of politicians and planners with values and visions in sustainability is the way to make a balance regarding city's needs and community priorities.

It is expected that urban agriculture as a land use assist to increase the access of the urban poor to available and suitable space for food production and proper infrastructure such as public open land, water, energy among others; as well as proper monitoring and projects' evaluation. Urban agriculture and food system are able to create the conversation about land use. In fact, urban agriculture is one activity of food systems that can be the sustainable strategy to reconnect Cape Town (See figure No.62).

⁹⁷ In interview with Professor Jane Battersby Lennard, administered by Gloria Gavia, on October 23rd 2012 (Annex 16)

⁹⁸ See Annex 16

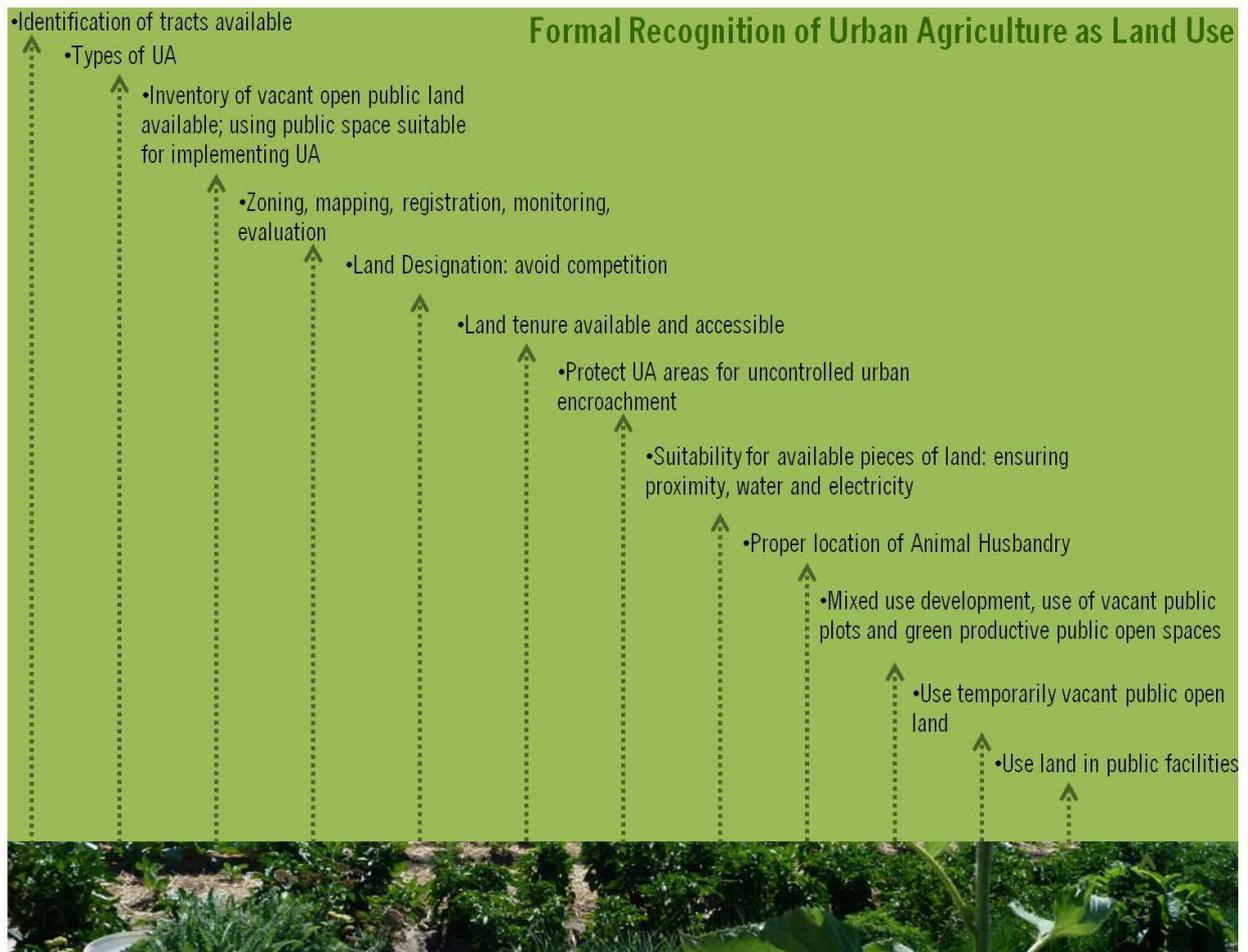
■ 8.6.2 Tools for Integrating Urban Agriculture into the Spatial Planning, Land Use Management and Policy Framework; Supported by International Perspectives

Urban agriculture is officially recognized as an urban strategy by number of cities which through policy formulation and spatial planning strategies have integrated urban agriculture as a land use component. Many city authorities have been developed policies regarding urban agriculture and have launched programmes and concrete actions to facilitate the sustainable implementation of this urban infrastructure (Zeeuw et al 2010).

However, mostly in developing countries are still often lacking adequate institutional frameworks at national, municipal and local levels (Viljoen 2010). Lack of integration of urban agriculture has been incurring in illegal use of land, lack of comprehensive implementation and health risk associated with the inappropriate reuse of waste and water among many other urban challenges (Zeeuw 2006).

There are successful and non successful international cases in regards to proper integration of urban agriculture into the spatial land use planning. One of the most remarkable cases of urban agriculture development is Havana in Cuba. It has developed an innovative and comprehensive model supporting food production within the boundaries of its cities using a combination of top-down and bottom-up approaches (Diaz et al 2005). However, Cuba is a unique successful case that is responding to the most intense economical crisis, produced after the collapse of the socialist block.

The success of Cuba case lies on three main aspects. First one, the level of integration into urban planning policy. It is distinctive and has been achieved through a more flexible and proactive approach resulting from a better understanding of the potential positive role and risks associated with urban agriculture and its potential contribution to comprehensive policies (Diaz et al 2005).



Second one; there has been a close, effective association between the development of agriculture, local government and local democracy.

Thirdly, the participation developed at the community level makes it a successful combination of top-down and bottom-up approaches.

This case is the 'world's first nationwide coordinated urban agriculture programme, integrating access to land, extension services, research and technology development, new supply stores for small farmers and new marketing schemes and organisation of selling points for urban producers. (González et al 2001 cited in Diaz et al 2005, p.144).

There are other interesting cases that have been successfully included urban agriculture as a bottom up approach into the spatial development framework in developing cities such as Rosario Argentina, Sao Paulo in Brazil,

Figure No.62 Formal Recognition of Urban Agriculture as a Land Use. Source: designed by the author 2012.

Lima in Peru, Kampala in Uganda, Dar Es Salaam in Tanzania among others (See figure No.63).

The cases aforementioned are demonstrating how urban agriculture as livelihood strategy can be integrated in spatial planning and land management principles. Urban agriculture has to be recognized as a sustainable factor that is important to integrate in city's development programmes and urban planning strategies.

These cases are supporting the theory that, the main urban challenges such as rapid urbanization, urban poverty, high unemployment rates and urban food insecurity are arguments to formulate policies embracing sustainability concepts; as well as catalyzing changes in land use and strategic urban development.

Spatial Planning strategies in line to urban agriculture should not be only focused on

including this one in master plans or blueprints for the future (Drescher 2000). Urban planners and policy makers should consider improve urban sustainability, enhance urban food systems, avoid conflicts between urban systems or land uses, generate access to land and proper infrastructure; as well as including multi-stakeholders in decision making process, among others.

It is important to provide regulation and formal status to urban agriculture in city's development strategies through policy formulation and land use designation. The proper recognition, creation or adaptation of mandates focused on land, health, environmental and food is the first step to enforce its proper implementation.

The strategies for implementing urban agriculture ranging, among others, from including land use zoning, land identification and allocation, accessibility to resources, land tenure modalities, land and food banks, urban food systems and equitable provision of basic services in ensuring sustainable use of urban land (Magigi 2008).



Figure No.63 International Models of Urban Agriculture's Integration: Havana, Cuba and Rosario; Argentina, Photographies: Sanchez, R City Farming 2010. Sawen, R. 2011 and Ambito.com 2011.

Strategic tools for implementing urban agriculture into the spatial planning and land use management

This research seeks to analyze existing tools already implemented in some relevant cases studies to assist the process of integrating urban agriculture in Cape Town.

After analyzing the tools implemented to include urban agriculture in land use planning by some developing cities in Latin America, Asia and Africa which are considering urban agriculture as a livelihood strategy to respond to the main challenges; it is important to clarify the main instruments already implemented, and that are suitable to work as a models to discuss, include and improve into the visions for urban agriculture in Cape town.

The main tools identified in the policy formulation, inclusion in urban planning

strategies and implementation process are explained as follows: the first big step is the provision of legal status through policy formulation to urban agriculture with the establishment and institutionalization of effective mechanisms of active and direct participation of stakeholders in policy formulation, the planning strategies and actions for implementation; to exercise coordination and agreement from all stakeholders on the mandate (Zeeuw 2010).

The second big step is to institutionalize procedures in order to follow up impacts of urban agriculture through the establishment of responsible official bodies in charge of enforcing the policy, programmes, strategies and actions plan; as well as establishing procedures to verify compliance with the law on issues concerning.

The legal framework of urban agriculture should be in greater harmonization of policies regarding land, health, education, food and environmental in order to establish the clear linkage with city's development programmes.

The inclusion of urban agriculture into the spatial planning encompasses a set of strategies focused on designated infrastructure and guidelines to implement it properly and efficiently within the legal framework.

Land identification, allocation and designation through mandate with mapping areas are the crucial step to ensure land availability and accessibility; including these guidelines into Master plans, structure plans and land use zoning. Establishing clear regulation on infrastructure that provides support to urban agriculture projects such as constant access to water, electricity and organic waste.

The most innovative techniques to include urban agriculture into the spatial planning defined by experts are described as follows: land banks, participatory planning and long-term leases for land used for urban agriculture for ensuring adequate access to land and other resources; as well as implementing Geographic Information Systems (GIS) for mapping land for urban agriculture, for registration purposes and for improving land use monitoring and evaluation

and as a basis for a transparent taxation system (Jacob et al 2000, p.4). Jacob adds that incentives in the form of local tax reductions, tariffs and promotions for urban agriculture should be encouraged for the integration process.

8.6.3 Main contributions of successful international case studies in correlation with the main challenges ahead in urban agriculture in Cape Town

Some case studies are considered in this research as examples of successful integration of urban agriculture into the policy framework, spatial planning and land use management: the case of Rosario in Argentina and Kampala in Uganda. They were selected based on the following criteria: Firstly, all of them have policy framework that supports its mandate through multi-stakeholders participation process. Secondly, urban agriculture is considering a land use; designated in order to respond to urban challenges; these cases are not responding to crisis. Thirdly, public space is seen as means of growing food in these cities. Finally, they are located in developing countries in which urban agriculture is seen as a livelihood strategy.

As was mentioned in previous chapters urban agriculture has been recently integrated into the spatial planning and will be reached the status of land use and the second version of legal policy. However, the major challenges are focused on the gap between formulation and implementation, lack of enforcement that is reflected on competition among land uses, lack of land availability, non affordable water and the encroachment of non-agricultural uses in areas considered of significant agriculture value.

While the city of Kampala principally adopted a regulatory approach to urban agriculture based on a system of permits, licenses, control and use of legal instruments, the city of Rosario placed its emphasis on development of an enabling policy framework based on economic incentives, communicative and educative instruments and design instruments (Terrele et al 2006).

In this line, the programme of urban agriculture in Rosario could help to illustrate how the main

challenges identified in Cape Town has been overcome in Rosario's case with innovated strategies that are interesting to analyze.

The consolidation of urban agriculture implementation process in Rosario was done by formally recognised as a permanent and legitimate use of urban land and promotes its integration into other public activities and projects related to management of green areas, equipment, housing, infrastructure, transportation, etc. Urban agriculture was incorporated into the City Strategic Development and Master Plan (Terrele et al 2006).

The Rosario's urban agriculture includes in the policy several measures to enhance access of urban poor to vacant in public open land for food production and to secure their use rights (Zeeuw 2010).

This city has already mapping vacant plots and setting up a land bank; tax incentives to private land owners that make vacant land available to urban poor on a temporal basis; provision of user permits and inclusion of permanent urban a peri urban agriculture zone in urban development plan.

The second big step in Rosario's case study is the proper assessment to vacant areas to become urban productive spaces with reliable and updated information on aspects such as ownership, soil quality, contamination and characteristics, accessibility and land use regulations (Dubbeling et al 2006). Dubbeling further argues that such information facilitates decision-making on the type of land best suited for the purpose, and how and for how long it can be designated to urban agriculture.

The third big strategy to highlight in this case is focused on the number of measures implemented by the municipality in cooperation with NGOs and stakeholders to stimulate urban food production and marketing; including setting up a city network of urban producer groups, providing access of groups of producers and unemployed to infrastructure and finance to establish small scale processing and packaging units such as training market analysis and

business planning, food safety, hygiene and quality control; as well as the establishment of farmers markets and home delivery schemes (Ponce et al 2010 cited in Zeeuw 2010).

The fourth strategy lies on how policies and strategies are developed to seek to integrate and maintain open space in the urban structure and promote ecological and multi- functionality that can provide environmental and other services that connect food to the city.

Another serious challenge in Cape Town is lack of financial and human resources. Although urban agriculture is included into the economic development branch as a livelihood strategy to assist to improve the levels of unemployment rate; there is not major support at the financial level for any home or community project from the local government perspective.

In other to solve the challenge above mentioned, the case of Harare in Zimbabwe is relevant because it provides guidelines how to support a political economy vision to urban agriculture and collect financial resources for its implementation through a solid programme based on donors in terms of infrastructure and financial resources; who in compensation receive benefits at taxation level (Gumbo 2000).

Currently, there is not a participatory process to build up the policy in Cape Town. The case of Kampala in Uganda is a good example that show how the consultative process and proper commitment of all key players generate interesting policies and ordinances for livestock and companion animals, fish, sale of milk and milk products, meat and meat products (Azuba et al 2006). These ordinances are pieces of regulations that help to provide guidelines two the second component of urban agriculture animal husbandry that currently is not included in the Spatial Development Framework of Cape Town.

The major factor of the Kampala experience in policy's formulation was the dynamic created around stakeholders with the knowledge sharing and exposure to the existence of urban agriculture and its contribution to food security, financial stability, health and nutrition, and the

creation of green environments (Azuba et al 2006). This dynamic created a sense of ownership among all stakeholders. In fact, this exchange was facilitated by the interaction of official departments, research findings and community based projects.

Cape Town has an Urban Agriculture Unit under the directorate of Economic Development; with very limited budget and only three members working part time. This Unit requires being more proactive than reactive. In the case of Rosario, they have a programme hosted by the Department of Social Promotion, which now has a staff of 33 full or part-time workers with a good budget that enable them to implement a programme with urban farmers to assist in securing and protecting agricultural spaces, taking advantage of value-added agricultural products, and establishing new markets and market systems (Terrele et al 2006).

In order to achieve the implementation of urban agriculture in public space the cases above mentioned expose a good set of criteria that has enabled to achieve in a good percentage the use of public open space for urban agriculture purposes supported by legal framework and planning tools. These cases have had a clear vision on goal setting and strategies to target in regards to urban agriculture.

Lessons learnt from the international case studies in implementation process

As the evidence indicates the cases of Rosario and Kampala started the process by establishing comprehensive regulation, polices and by-laws clarifying the scope and scale of urban agriculture, the clear responsibilities among official bodies and stakeholders in enforcing policies, strategies, programmes and actions.

They based the policy formulation on reliable assessments with proper information that influenced in the decision making process. They built partnerships and the consensus achieved among key role players; considering clear establishment of plan-making with different stages, inputs and outcomes (DVRPC 2010).

These cases has formulated the criteria and guidelines in regards to infrastructure for the

implementation process, the provision of proper support in terms of education, training and skills capacity, ongoing extension with proper monitoring and evaluation (Gambo 2010).

The most relevant actions developed by local governments, in the cases, are working in harmonization with key stakeholder in order to benefit city's sustainable development and urban farmers are divided into five categories:

1. Inform decision-making processes by collecting data, researching alternatives, assessing impact, and educating stakeholders.
2. Encourage sustainable urban agriculture through plans, policies, and programming.
3. Improve healthy food access through zoning, education, and incentives for retail operators.
4. Support a local food economy.
5. Reduce or reuse food waste (DVRPC 2010).

In line with this research, the tools, strategies and actions that are suitable to take into account to Cape Town's case, according to the aspects aforementioned are described as follows:

Firstly, in order to inform decision-making processes; what is needed is to conduct needs assessments and land inventory for food production.

Secondly, to encourage sustainable urban agriculture trough policies, development plans and programmes; it is important to establish a set of criteria for integrating zoning a comprehensive planning, creating or promoting residential livestock ordinances, encouraging small-scale farming on public open space, provincial or city land property, creating or strengthen agricultural zoning, preserving land for farming, provide incentives for food production on preserved land, explore farming subdivisions, explore zoning for farm labor housing, explore design guidelines for food production (DVRPC 2010).

Thirdly, the improvement of healthy food access is possible when local governments provide incentives for the development of healthy food retail in underserved communities (via supermarkets, gardens, farmers' markets), create dietary guidelines for publicly procured food or menu-labeling legislation, connect

healthy food outlets with programs such as healthy nutrition, VIH, children protection, among others.

Fourthly, to support a local food economy; it is important to explore local food procurement policies for governments, institutions, public facilities and schools, create standards for sitting farmers' markets, small retail markets, distribution and processing facilities, grain and other storage structures, and secondary businesses; as well as assessing zoning, creating new or partner with existing farm-to-school programs and creating, partner with or promote buy Local marketing programs (DVRPC 2010).

Finally, to make available reuse food waste; the assessment of opportunities for zoning for composting on urban garden sites and distribute community kits to encourage backyard composting are alternatives that can be considered and evaluated.

8.6.4 Multi- Stakeholders Participation: Future Institutional Actors Involved

The successful and sustainable integration of urban agriculture into urban land use systems is a complex task requiring a multi-stakeholder approach (Mubvami 2006). Mubvami further argues that urban agriculture stakeholder forums, including the main official departments, planners, urban farmers, producers and representatives of various agencies, can be very useful for developing shared vision, resolving conflicts and developing joint action programmes (Mubvami 2006, p.74).

The establishment of crucial partnerships among institution with NGOs and private sector is needed to provide support to new urban farmers that will implement new projects in the new designated areas in public open space.

Multi-actor participation process

Bottom up and top down strategies are integrated in the multi-stakeholders participation, creating interesting dynamics among institutional and non-institutional participants that will assist to formulate policies, strategies and actions; according to

real needs through improving or creating planning tools.

Lack of multi-stakeholders participation in policy and decision making process is one of the biggest challenges that require to be solved in short time in Cape Town. When there is a place to debate around common objectives, challenges, strategies and actions; it is possible to develop strategic thinking and build up together the new vision of urban agriculture. An institutional, private, NGO and community learning is created through the discussion and debate based on positive and negative experiences and innovative and creative ideas.

Currently in Cape Town, the coordination, discussion and interaction among departments are less frequent than expected; and the lack of leadership in creating a space and proper plan, which assists to foster urban agriculture from the institutional level, has not been identified yet. It is important to bridge the communication gap between direct stakeholders and the institutional actors in urban agriculture and functioning as a more permanent platform for information exchange and dialogue (Dubbeling 2006).

The idea with the multi-actor participation is to collectively define priorities, strategies, identify policy instruments available or required, action planning, identify available human and financial resources, and implementation as well as strengthening initial commitments establishing responsibilities for monitoring and evaluating the projects, programmes etc and adjustment strategies (Veenhuizen 2006 and Zeeuw 2006).

This process is needed in policy formulation in Cape Town in order to discuss the main challenges and generate strategies and allocate responsibilities to bridge the gap among formulation and implementation; as well as improving the current situation, benefiting all players involved.

The active engage of different stakeholders at different levels lies on consultative forums and activities in which various ideas and perspectives are exposed, conflicts are negotiated; principles for action and policy

design are defined, and collectively binding decisions are made (Dubbeling 2006).

There are some phases to follow in this multi-stakeholder participation process: 1. Diagnosis, assessment and stakeholder inventory. 2. Consultation to confirm political support and consolidate stakeholder participation. 3. Strategy and action planning; 4. Implementation. 5. Follow up and consolidation. 6. Integrated monitoring and evaluation (See figure No.64) (UN-HABITAT and UNEP 1999).

The participation process expected in Cape Town is mainly focused on three objectives: first of all, to enhance public awareness and motivate the different stakeholders to actively participate in action planning and policy design. Secondly, capacity development among local actors. Thirdly, to build commitment, trust and cooperation among the main actors in terms of permanent and transparent information flows; as well as, communication on agreements made, implementation process and results.

The Creation of a partnership approach among stakeholders that puts interests together and brings to the debate multiple experiences of the organizations is important. Formal and informal relations among stakeholders should be flexible with mutual commitment and permanent learning.

Official stakeholders required to be involved in urban agriculture process

Urban agriculture relates to some cross cutting urban issues and areas in Cape Town such as urban poverty, land, public space, green areas, waste and water management, environmental concerns, food security, economic development, public health, and community development, community programmes, among others (zeeuw 2006). For this reason, it is important to identify the stakeholders at national, provincial and city level who should play a role in planning and development of urban agriculture.

The increasing contribution of urban agriculture in the sustainable urban development of Cape Town requires the inclusion of some new institutional stakeholders at different levels and departments into policy formulation, planning and implementation of action programmes and projects. It is important to establish the active participation of direct and indirect stakeholders in the formulation and implementation of urban agriculture policies and action programmes.

Local, provincial and national governments play a key role, ensuring the availability and secure tenure of land and water, access to public services, approval of regulations and standards (Dubbeling 2006).

Through including official departments in the policy formulation and implementation process for urban agriculture will make easier the process to have access to services required. In this line, City of Cape Town will guarantee permanent availability and accessibility to these important infrastructures.

In Cape Town the different levels of government are already engaged in some areas of service provision and regulation, closely linked to urban agriculture such as urban planning and land management. However, some areas such as water treatment, waste collection, management of green spaces are not included yet.

It is crucial to make a revision and adaptation of polices, regulations, by-laws and norms to assist to remove unnecessary restrictions on urban agriculture and to develop specific regulations and norms for legal use of various types of urban land, access to water and

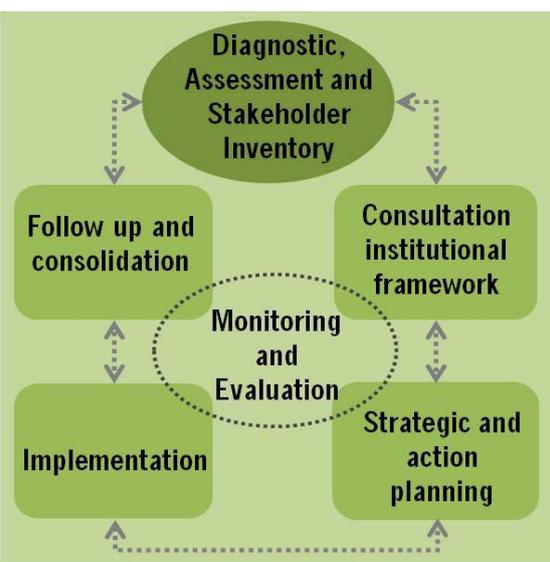


Figure No.64 Multi-Stakeholders Participation, Source: Source: Azuba, S. 2006

programmes related to health, recreation, nutrition, environment etc.

Currently, the environmental, water, waste, education, building management, social and health department are not closely involved to urban agriculture matters in Cape Town.

The proper involvement of these departments is needed in order to provide a sustainable and holistic approach to urban agriculture; as well as closely link programmes such as organic waste supply, water subsidies, VIH and nutritional programmes, children's, youth and adult programmes, environmental programmes, social welfare programmes and housing and urban development programmes. The idea is to integrate key policy objectives for urban agriculture into broader urban development agendas among all departments involved.

The definition of new strategies, actions planning and implementation process for the departments above mentioned is required.

The Environmental department should be integrated to the process with the environmental impact assessment to all urban agriculture projects; in special those ones which are related to animal husbandry.

The Water department should be involved in setting up subsidies to get access to affordable water. Negotiating a special tariff for irrigation water to home, school and community gardens is a crucial need to support urban farmers in their sustainable initiatives.

The Waste department should be actively involved in creating low tech strategies for collecting and providing organic waste to gardens in order to promote eco-efficient principles; reducing recycling and reusing waste for feeding the soil and grow food.

The Education department should be in charge of creating programmes in conjunction with universities or agricultural extension agencies affiliated to provide training and skills capacity in agro-business, micro farming, food security, healthy nutrition, business management, among others.

The Building department should promote the mixed use development in order to include urban agriculture in new housing development projects and create green productive areas to foster sustainability and urban agriculture as an asset in public space to create sense of belonging.

The Health department should foster programmes which combine urban agriculture with healthy nutritional standards; as well as including strategies that link VIH programmes, welfare programmes with products produced by urban farmers.

In addition, the economic department should be more proactive and support NGOs and groups of urban farmers, improving the access of micro-entrepreneurs to credit programmes, and strengthening organisations of urban producers.

It is important to involve all departments and different levels of government representatives who have the power to influence decision making with the objective of creating official discussions in terms of planning process and avoid overlapping efforts, as well as acknowledging and overcoming possible resistance regarding urban agriculture, supporting policy formulation and gaining political presence in sustainability matters among political level.

The first idea with the inclusion of these departments in the process is to develop participatory and democratic governance, facilitating its inclusion and integration of all programmes related to urban agriculture. The principles of this multi department participation are based on commitment, mutual trust and collaboration.

The second big idea with the inclusion of the new stakeholders is operationalise solutions based on action and activities to meet urban urgent needs. According to Dubbeling 2006, the strategies and actions that should form part of an action plan should include: 1. Pilot or demonstration programmes and projects. 2. Capacity development activities. 3. Further research or studies. 4. Review and adaptation of municipal policies, legal and normative tools 5. To develop new structures of financial

management and allocation of resources. 6. Setting up of new institutional structures that promote and guarantee community participation.

The inclusion of new actors guarantees to foster the multiple functions of sustainable urban agriculture. The sustainable approach to urban agriculture focuses on maximising its potential social, environmental and economic benefits through promoting health and nutrition, ecological responsibility, social inclusion and community capacity development.

SUMMARY AND CONCLUSIONS



9. SUMMARY AND CONCLUSIONS

The main purpose of this study was focused on analyzing the effective process and strategies to integrate urban agriculture into the policy framework; urban spatial planning agenda and land use management; clarifying the planning vision of urban agriculture in productive public open spaces as strategy to tackle the main urban challenges and assist to reconnect the city of Cape Town. The implementation process in public open spaces was analyzed through determining a set of sustainable urban agriculture indicators as instruments for decision-making that can be used effectively to assess this sustainable infrastructure.

This research also aims to determine state and non-state actors involved in setting conditions for implementing urban agriculture, main potentials, benefits, current status and challenges ahead; as well as identifying tools and strategies to effectively integrate urban agriculture into the spatial planning, land use management and policy framework. New role and impacts of urban agriculture as land use; positive and negative effects to integrate it into the strategic planning agenda and permanent multi-stakeholders participation in decision-making, are topics that analyze the priority to effectively include urban agriculture in the sustainable vision of city's urban development in Cape Town.

The study is supported by urban agriculture policy and planning tools formulation, public space systems, strategies and programmes focused on tackling food insecurity, unemployment, poverty, climate change that have been already launched to be integral part of urban agriculture. International perspectives were included to make a revision on top down and bottom up approaches in spatial planning tools, strategies and actions for integrating urban agriculture into legal framework and land use planning.

Important qualitative set of information was gathered through conducting interviews with stakeholders involved that are playing relevant role in the integration and implementation process. Governmental bodies, NGOs, academy,

private sector and community members were strategically identified to analyze current and new vision of urban agriculture as land use. New responsibilities in the integration and implementation process were established in conjunction with key role players.

The analytical results from the qualitative information enable to identify; that coherent, comprehensive and efficient urban planning tools and strategies are urgently required in order to facilitate urban agriculture integration and implementation. The process should be complemented by the creation of public scenarios, in which bottom up and top down strategies converge in the multi-stakeholders participation, creating interesting dynamics among institutional and non-institutional participants, enabling to formulate policies, strategies and actions based on the real needs while improving or creating new and innovative planning tools.

A number of case studies were selected to analyze productive public spaces, from the urban planning vision based on the criteria set in the research design: location on public open space, proper support from NGOs or private sector, bottom up approach and the consideration as a land of significant urban agriculture value with spatial planning intervention.

These case studies are located in the same district created during the apartheid era, distinguished by social and spatial fragmentation. This area is mainly considered to foster the city's future sustainable development. The factors taken into consideration during the field research were related to launching process, access to land, infrastructure, benefits and constraints, technical support, education, training, follow ups, among others.

The proper set of urban farming indicators assessed were carefully selected according to the case studies' type and dimension; as instruments to support formulation and evaluation of policies' execution, regulations, planning tools and strategies. The social, economic, environmental, health and spatial

categories were analyzed, providing reliable data to the sustainable dimension of urban agriculture at home and community level.

The research has empirically demonstrated that integrating urban agriculture into the legal framework and land use planning process is an important sustainable strategy for developing productive public spaces. Urban agriculture, properly integrated can work in the city as a livelihood strategy able to ensure food, promote social inclusion, economic development, reduce environmental degradation, and poverty, increase resilience urban poor and support sustainable communities in Cape Town.

General Conclusion

Food insecurity is a big issue in Cape Town partially coped by urban agriculture, which is included into land urban planning perspective and policies with some serious shortcomings in the implementation process. Food insecurity in Cape Town lies mainly on huge gaps among policy formulation and implementation strategies and political aspects.

Urban agriculture remains isolated from the political perspective; lack of political will in sustainability matters does not assist to catalyze the productive use of land with projects' implementation. Urban agriculture is officially recognized as an urban strategy by number of cities that through policy formulation and spatial planning strategies have integrated it as a land use component, launching programmes and developing concrete actions to facilitate the sustainable implementation of this urban productive infrastructure.

New vision of urban agriculture intends to achieve a more inclusive, productive, green and healthy city. Although, urban agriculture as a sustainable livelihood strategy for underprivileged communities is gaining momentum in the spatial planning discourse and policy making, it requires increasing scope and scale to properly respond to the growing urban challenges and to build a more resilient Cape Town.

Urban agriculture works as a strategy to reconnect city through a bottom up approach

from grassroots commitment actively supported by NGOs and private sector, which are playing key role from the planning and management perspective. It has the potential to assist to break the unbalanced situations and reduce disparities that still alive and have marked the history of social and spatial distinction in Cape Town throughout years.

Complexities around competition among land uses, access to land and infrastructure are leading the main challenges. Lack of proper use of existing resources available such as vacant public open land, land in public facilities, lack of enforcement in mixed use developments, are key issues that require urgent attention in order to promote multifunctional land and to ensure land availability, access to water provision, electricity and security to the gardens. Land issues can be solved through proper mandate, mapping areas to ensure land availability and accessibility, registration, monitoring and evaluation; including tools and guidelines into zoning schemes regulations, spatial development framework and policy.

In the integrated zoning schemes there is a zonification regarding agriculture areas of significant value; however, there is no any land demarcation per district for urban agriculture purposes; the current status of urban agriculture reaches the category of consent use to be implemented in single residential zones, community zones, utility zones and public open space.

Quantitative and qualitative reliable information and assessment criteria at social, health, environmental, economy and spatial level are required to bridge the gap in the implementation process. The assignment of human and financial resources at institutional level, establish zonification, identification, allocation and designation of suitable land for urban agriculture projects, infrastructure, multi-stakeholders recognition, community engagement among others are required to be solved by the governmental perspective.

It is important to provide well defined regulation and formal status to urban agriculture in city's development strategies through proper policy

formulation, land use designation, multi-stakeholders participation. Besides, the establishment of responsible official bodies in enforcing programmes, strategies and actions plan, as well as establishing procedures to verify compliance with the law on issues concerning to urban agriculture. The proper recognition, creation or adaptation of mandates focused on land, health, environmental and food is an important step to enforce proper implementation and avoid illegal use of land and health risk associated with the inappropriate reuse of waste and water. The legal framework of urban agriculture should be in greater harmonization with polices to establish clear linkage with city's development programmes.

The effective integration of urban agriculture into the strategic planning and land use management is urgently required in a holistic approach, as well as more governmental support, budget, political will, proper recognition, interaction and communication among departments, looking for linkages in the broader context of sustainable city development; with the aims to tackle the main challenges and foster urban agriculture in Cape Town.

Implementing urban agriculture in public open spaces should be the new sustainable vision of Cape Town in order to transform these areas into green productive safe zones; reducing criminality and giving a new green character. Urban agriculture will become in social, economic and environmental infrastructures which requires certain comprehensive criteria to ensure sense of belonging and security along the whole implementation process in public open space.

The inclusion of urban agriculture into the spatial planning encompasses a set of strategies focused on designated infrastructure and guidelines to implement it properly and efficiently within the legal framework. It is expected that comprehensive implementation of urban agriculture will be forceful through getting the formal recognition as land use status by the Spatial Development Framework and zoning Schemes to create the city's sustainable vision, developing green productive areas in public open spaces.

Sustainable Leadership

Non Governmental Organizations have been playing the most significant and strategic role, creating sustainable vision of urban agriculture and beginning to bridge the gap among policy formulation, spatial planning and implementation process. They are training people around democracy; engaging and driving society towards being more sustainable while building communities with skill capacities in urban agriculture matters. NGOs are giving underprivileged, unemployed and lowly educated communities in poorest districts seeds of hope through training, giving tools and empowering them in how to do urban farming and grow their own food all year round. They have been working with little government support; doing planning through dignifying communities, creating a credible vision for urban food production. There is much more to learn from the strategic thinking and actions developed by NGOs in terms of management capacity, community organization and planning among others.

The excellent model Harvest of Hope designed without governmental involvement in the planning process and market identification by the NGO Abalimi bezechaya can be replicated around the world. This is a button up initiative, complex logistical marketing business that encourages accessibility to small-scale producers to a new market. This model represents the sustainable vision of urban agriculture in Cape Town; promotion of economic and human development, social inclusion, green productive areas, good quality of products, reduction in food miles, food security, health and education are the main benefits of this interesting approach. Harvest of Hope is the meaning of food systems with strategic city's management vision in Cape Town.

Institutional more Reactive than Proactive

Urban agriculture plays conservative role in spatial planning; after reaching legal recognition provided by policy formulation and inclusion into the two main planning tools; Spatial Development Framework and Zoning Schemes Regulations. However, historically, agriculture has not had a high status as land use; the

Zoning Schemes Regulations will enact the land use category in the planning tool's new version.

The current policy has not been implemented in a comprehensive manner although there is a need for a food security strategy. There is a huge gap between the policy formulation and the implementation process. There is a gap what the policy says, what the city structure allows and what works for people on the ground. The policy has been applied in low scale among underprivileged communities due to the fact that there is not sufficient information and understanding about food insecurity and urban agriculture dynamics, complexities and dimension, complemented by lack of support from the local government to the Urban Agriculture Unit; currently, without human and financial resources, lying on a reactive position; working mainly on strategies and policy formulation to gain recognition on the political scenario.

The Urban Agriculture Unit requires making biggest partnership alliances with NGOs, private sector and community to expose at governmental level how people on the ground are actively engaged in projects that are making the difference and why urban agriculture deserves more recognition in the planning agenda and more financial resources to create enabling conditions and strategic initiatives.

The lack of multistakeholders participation in policy and decision making process is one of the biggest challenges to be solved. It is expected that NGOs, official departments, academy, private sector and community join efforts in order to build up together the new sustainable vision of urban agriculture into the spatial planning and legal framework in favor of its comprehensive implementation.

Urban agriculture complexities and Challenges ahead

Complexities affecting urban agriculture are focused on competition among land uses in which housing is on the top of the priorities from the governmental perspective due to the huge backlog. Urban agriculture as consent use is not in the same level of discussion and priorities to land uses for decision making; it is

in a competitive disadvantage compared to the other land uses; resulting in titanic efforts to get access to land for implementing projects. The major competition is registered between undeveloped and under-developed land and the need for land for public affordable housing.

There are several land issues such as lack of zonification, identification, allocation, designation. Lack of access to land for urban agriculture projects is by far the biggest issue, closely followed by non-affordable water supply for irrigation, lack of commitment and security in urban agriculture projects in public open spaces. Some gardens already launched have been converted into illegal dumping areas; becoming in a serious public health issue, affecting community members.

There is plenty open public space available but it is not accessible. Although it is suitable for implementing urban agriculture; some areas are not in proximity to communities or some of them are reserved for other purposes without implementing any temporary use, transforming these spaces into dumping areas and unsafe zones; as a consequence, public health issues, violence and environmental degradation. Urban agriculture with some regulations is an alternative to be strongly considered for those public open areas.

Allocating land for urban agriculture is a complex issue; there is not a policy about how to make land available for urban agriculture; only a set of criteria that have been set up to facilitate the process which is a big step but not ensuring success on this. The idea is to use existing resources available; making land suitable for implementing urban agriculture, using temporary vacant public open land and promoting multifunctional land use. Besides, using public or private land located in some public facilities such as schools, clinics, libraries, old age homes, and council buildings will ensure land availability, access to water provision, electricity and security to the gardens. However, the temporary use of vacant public and private land for urban agriculture has not been nor developed neither enforced yet. City of Cape Town could take into account this

approach to use undeveloped land based on a negotiation between the owner and the user.

Some projects have failed also due to lack of commitment from community members. Most of them are looking for better opportunities to survive in this apartheid economy; and urban agriculture is introducing in their environments as an economy viability to improve their living situation. Farming in Cape Town is not necessarily cheap, and they required the support from local government, NGOs or private sector to make their projects successful. Proper social engagements, good leaders driving the process and ensuring the permanent commitment of group members are key strategies to have successful sustainable initiatives.

There is not enough complete and reliable information that works as basic tools to understand the urban agriculture dimension and perspective that enable policy makers, urban planners, governmental bodies, NGOs, etc to build up policies, regulations, planning tools and strategies to allocate urban agriculture in sustainable city's development.

The complexity lies on operational process at the institution level. The city and the Urban Agriculture Unit do not have the sufficiently human and financial resources to manage urban agriculture for developing strategies to solve the challenges mentioned above. They have the valuable desire to be more proactive and to have the ability to hands on in a longer commitment.

The effective integration of urban agriculture into the strategic planning and land use management is required, as well as more governmental support, budget, political will, proper recognition, interaction and communication among departments in order to tackle the main challenges and foster urban agriculture in Cape Town.

The Role of Urban Agriculture in Public Open Space

There are some strategic alternatives setting up by the zoning schemes to use public open space; providing a productive and safe character, creating trade infrastructures that enable community to work on it. The Spatial

Development Framework is promoting the concept of open public space to build and scale city, allowing commercial, mixed-use developments for small-scale enterprises and home-based income generating options such as urban agriculture, providing smaller and accessible residential courtyards with more sense of safety and belonging for the community, as well as creating an extension from the house to the public areas with sustainable activities that actively engaging communities.

However, the process to launch an urban agriculture project in public space lies on political and historical complexities. It is political decision to designate land for urban agriculture in public space area. In the history's legacy, Cape Town has not registered much more sense of belonging on these areas. Mainly for this reason, public space is conceived underutilised, neglected, vandalised and perceived as unsafe zone without management and poorly maintained.

Implementing urban agriculture in public open spaces should be the new sustainable vision of Cape Town in order to transform these areas into green productive safe zones; reducing criminality and giving a new green character. Urban agriculture will become in social, economic and environmental infrastructures which requires certain comprehensive criteria to ensure sense of belonging and security along the whole implementation process in public open space.

Reconnecting Cape Town through implementing urban agriculture

Communities actively engaged in urban agriculture are mostly located in poorer areas, working on strategies that can be replicated along the city for reconnecting green areas and hands on the soil, creating food system dynamics. Home and community gardens are bottom up approaches in which people at the grassroots level are working in building up a sustainable city with the support of NGOs within a legal framework. These approaches are tools to bridge the gap among formulation of strategies and implementation process.

The majority of home, school and community gardens are located in Cape Flats District in which apartheid planning has created impoverished communities and neglected landscapes in risk of degradation. Since the apartheid era, not a single green area has been built in this district by the local government. The connectivity with productive green areas like urban agriculture could be seen as a solution to improve environmental concerns.

Regarding the main benefits of home gardens are focused on doing gardening in a very small scale occupying a small piece of land, using the land in an eco-efficient manner; growing organic vegetables and recycling organic waste and materials available; producing more with less for feeding their families. However, the main difficulties facing refer to community complexities forced them to fence their public open space area to protect their products from thieves and vandalism situations.

Community gardens are producing fresh food locally in accordance with seasons, leading to goods that are more attractive on the market due to their taste, nutritious value, cost and minor ecological impact. These gardens are creating job opportunities, embracing biodiversity, educational and cultural identity, while implementing low-tech water harvesting, food production and social programmes. Urban farmers have gotten the appropriate knowledge, competency, leadership skills to develop and spread their expertise and capacities through NGOs support.

The main benefits perceived are focused on healthy and nutritious food produced by community members, the NGOs' support, working as means for providing skills capacities and economic benefits that assist to improve their economies and guarantee a monthly income. The main difficulties are focused on consuming electricity and water affordability.

Fezeca-Gugutethu garden is one of the most successful examples that are using commonage land in an efficient way, implementing the project in vacant public open space in a sustainable way, producing food and contributing to reconnect the city through this

green movement from the ground level. The public space used to be a dumping area, recovered by these urban farmers through the support of the NGO Abalimi Bezekhaya. This sustainable initiative is connecting with the urban actors involved to benefit the local community and other parts of the city, creating a sense of belonging among urban farmers to this public space with productive character.

This garden is following the policy regulation and main planning tools in Cape Town. On one hand, the zoning schemes regulations approved the consent use developing farming activities in public open space. On the other hand, according to the Spatial Development Framework, the garden is fulfilling the criteria established in terms of location, infrastructure and support.

Planning vision

The main green lung source in regards to urban agriculture in Cape Town is Philippi Horticultural Area (PHA). This is the only area with a management plan, included into the Spatial Development Framework and Zoning Scheme as significant agriculture value with specific regulations. Strengthen and promote urban farming in the PHA, in conjunction with conservation of historical agricultural setting is needed; from the two main planning tools in Cape Town. Lack of clear directions in terms of planning environmental matters promotes inappropriate land uses, public space as dumping areas, encroachment and high pressure for urban development under this land. These urban issues should encourage local government to proceed with clear regulations that protect the main green area of Cape Town.

Official Recognition of urban agriculture as land use

With the official recognition of urban agriculture as land use in Cape Town major impacts are expected to forceful its implementation, facilitating the identification of tracts of land available, as well as identifying the types of agriculture suitable for such location in proximity to urban farmers. Allocating and designating land base on specific criteria, including efficiently urban agriculture in mixed use strategies and complementing new housing

development, public facilities, slum upgrading and urban renewal projects. This process will enhance economies; assist to increase access of the urban poor to available and suitable space for food production and proper infrastructure such as public open land, water, energy, proper monitoring and projects' evaluation.

In conjunction with the formal land designation, it is important to create strategies to access to land, through assessing the availability of land for urban agriculture; establishing short, medium or long-term period of usability according to the city's development challenges and priorities. These ones are important steps to set up proper criteria in policy framework and main planning tools. If there is land designation, the priorities will be established and the competition among land uses will be reduced. After making an inventory of vacant open public land available in Cape Town; using public space suitable for implementing urban agriculture with all the requirements needed, will be a permanent or temporary way of using these types of areas for city's sustainable development.

Cape Town can adapt the concept of public open space with multifunctional land use character that could play a crucial role in city's development. The promotion of multifunctional land use could be done through encouraging community participation in management public open spaces, where food can be grown in combination with other urban functions such as recreation and city greening, reserving open public areas for future urban sustainable development with the capacity to feed the city and assist to tackle some current and future urban challenges.

However, political thinking in sustainability matters is urgently required to assist to catalyst the productive use of land with the implementation of urban agriculture projects throughout the city. Without political will, changing land use regulations will be not enough. It is important to count with political support, better results, better participation in planning and better promotional of the benefits of urban agriculture to the general population.

RECOMMENDATIONS



10



A set of workable recommendations at the city management level are developed in order to contribute to the effective integration and implementation of urban agriculture in public open spaces into the spatial planning and land use management in Cape Town. The recommendations elaborated have been based on the literature review, information gained from the field interviews and surveys; interactions with the main stakeholders involved from the governmental bodies, academy, NGOs, private sector which effectively drawn up comments and perspectives suitable to be integrated in this set of recommendations. The process and discussions held with urban farmers and community members in the field work contributed to develop these recommendations.

The multiple functions, benefits and role in urban issues of urban agriculture, have provided sufficient reasons for its proper integration into sustainable urban development. However, urban planning tools and design regulations are needed to facilitate this integration.

The recommendations proposed in this research are organized in two sections. First of all, the sustainable assessment of urban agriculture, creating suitable tools for decision-making and developing the strategic action plan.

Secondly, guidelines for an action plan are formulated to provide visions for strategic planning of urban agriculture. It contemplates a set of planning tools for effectively integrate and implement urban agriculture, using public open space as vehicle to create productive green sustainable infrastructure and use land towards eco-efficient concepts in Cape Town.

10.1 Sustainable Assessment of Urban Agriculture

The main idea is to build up mechanisms to assess the integration and implementation of urban agriculture in public open spaces into the policies, spatial planning and land use management in order to provide City of Cape Town with relevant tools for decision-making to develop a strategic action plan to bridge the gap among policy, planning tools and

implementation process. Reliable data contributes to create awareness and strategic interventions with all key role players involved.

This research assessed home and community food gardens in Cape Flats District through implementing urban farming sustainable indicators. It enables the research to prove, that conduct evaluations in projects already implemented in public space are needed, to support formulation and evaluation of policies' execution, regulations and spatial planning strategies. There are approximately 3.500 urban farmers that are using public open areas to grow food. Regulations and planning tools require to be formulated in harmony with the reality and reliable information.

The sustainable indicators implemented and analyzed in the research are good example to understand how urban agriculture can be assessed providing wide range of information suitable to be used for building up policies, correcting existing or creating innovate planning tools, including it into proper city's programmes.

Besides, the information gathered through this type of sustainable assessment assists to tackle current complexities and challenges ahead, mainly focused on land accessibility, availability, water affordability, competition among land uses and lack of funding and proper support to NGOs and community members, among others.

The main governmental bodies involved should count with this type of information that will facilitate decision-making process, develop proper regulations, guidelines and criteria to allocate urban agriculture in public open space; as well as assisting in the integration and implementation process of urban agriculture into spatial planning and land use management.

Information is the main tool required to understand the dimension, advantages and disadvantages of integrating urban agriculture in city's development agenda. It also assists to coordinate actions across multiple stakeholders, programmes and agencies. The provision of ongoing extension, technical assistance, training, education and skills capacities is possible through knowing dimension's movement,

clarifying people actively engaged on urban agriculture among other multiple parameters.

Sustainable indicators adopted and created in this research assist to do monitoring and evaluation related to positive and negative impacts about projects already launched. Information regarding successful and non successful cases will enable to create procedures to be executed in long, medium and short term according to the needs identified.

It is important to create common agreement about the sustainable indicators to be implemented according to case dimension (home, school, community gardens and large urban farming areas); establishing who will the entity in charge of monitoring and leading the responsibility to processing the data. The results of these evaluations should go to consultative forums with multi- stakeholders to create the strategies and actions. It is expected that, crucial communication and cooperation of all stakeholders assist to lead this process successfully.

Assessing urban agriculture with sustainable indicators provides sufficient tools to proceed with sustainable strategies at the political arena, creating a political voice in Cape Town, while providing reliable information to policy makers, urban planners, researchers, NGOs, community members, international agencies, etc.

The assessment plays an important role in developing criteria to assess suitability of land for urban agriculture. The identification, zonification, allocation and designation of land are urgently required to foster the proper implementation of urban agriculture in Cape Town.

This evaluation implies to visit urban home, school and community gardens already launched to evaluate impacts of activities, outcomes, main benefits and constraints. The study will reveal gardeners capacity to track approaches, identifying several detail information according to the social, economic, health, environmental and spatial category. Conduct formal and informal interviews is required to fulfill the main purpose with collectively contribute to

enhance the implementation process. This process should be in conjunction with urban farmers' registration for creating data base and ensuring the future technical assistance by NGOs, Urban Agriculture Unit, private sector or international agency.

The information gathered from the assessment will be a platform to promote worldwide the case of urban agriculture in Cape Town with reliable information that clarifies the scope and, scale and geographic concentration of urban agriculture. This information will be support to researches to defense area of significant agricultural value like Philippi Horticultural Area, the green lung of Cape Town; currently, in risk for encroachment with many complexities compromising its original land use.

In annex 22 is possible to analyze in detail the number of indicators per category that were used in the research field and provided suitable information to create proper knowledge on urban agriculture in public space in Cape Town. The categories evaluated were social, economic, environmental, health and spatial (See figure No.65).

These indicators about social, economic, environmental and health categories were selected based on the model formulated by The Five Borough Farm which is a Design Trust for Public Space projects in New York. In addition, the research contributes with new indicators per category that were suitable to be integrated according to the case studies analyzed.

The indicators for the spatial category are new research contributions which enable to measure the main scenario to implement urban agriculture. Public space is well analyzed in this category that works as a component of sustainable infrastructure able to transform and reconnect the city through redesigning productive green spaces.

The social category includes social capital, youth development, age integrated spaces and food access in order to analyze the level of participation among community members into urban agriculture process, capacity development; commitment, training

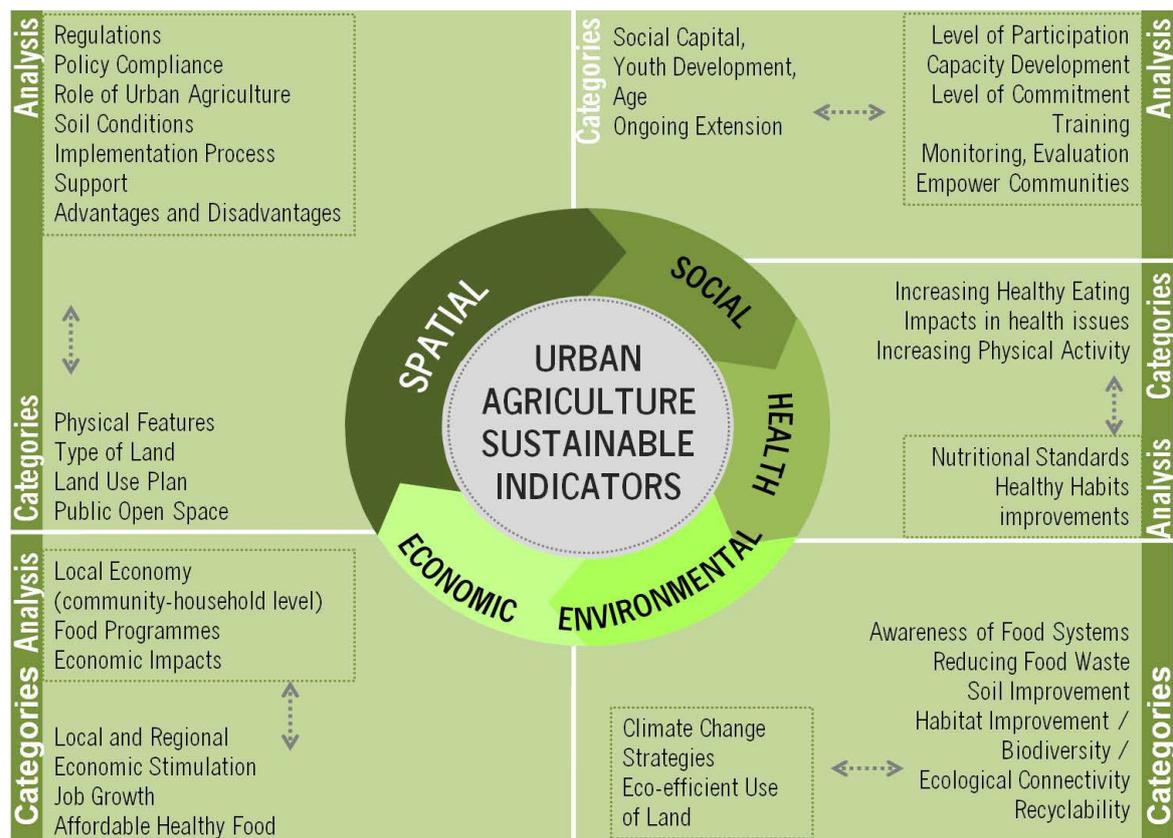
opportunities as well as indentifying the main problems in empower community process. The new indicators proposed in this category are referring to ongoing extension, monitoring, evaluation and education.

The economic category covers local and regional economic stimulation, job growth, affordable healthy food, to understand how the implementation of urban agriculture is impacting the local economy at the community and household level; as well as levels of training and coverage regarding food programmes and their impacts.

The environmental category is focused on awareness of food systems ecology, stewardship, conservation and stormwater management, reducing food waste, soil improvement , habitat improvement / biodiversity / ecological connectivity; to analyze climate change strategies for mitigation and adaptation, the eco-efficient use of land, pros and cons regarding recyclability. The new indicators proposed in this category are related to recyclability process (reusing waste and water).

The health category embraces issues related to increasing healthy eating, impacts in health issues and increasing physical activity; to measure nutritional standards and healthy habits improvements.

The spatial category is an essential element, working as physical scenario to hold the development of all sustainability approaches, playing a crucial role in urban agriculture integration and implementation. This category analyzes physical features, type of land, land use plan and regulations, public open space; in order to assist to identify the main advantages and disadvantages of projects implementation.



10.2 Visions for Strategic Planning of Urban Agriculture: Urban Agriculture Action Plan

There is a need to create mainstream development policies, strategies, efficient planning tools and specific action plan which guide the process to effectively contribute to city's sustainable development with the inclusion of green productive public spaces.

The second recommendation for assisting City of Cape Town with the integration and implementation of urban agriculture into the spatial planning and land use management is based on guidelines for an action plan that should be complemented with reliable data gathered by the sustainable assessment based on urban agriculture indicators. This information will be used as instrument for creating the capability to evaluate, monitor and propose workable strategies in short, medium and long term; formulated by all stakeholders involved.

Urban Agriculture Action Plan + Strategies

Practical initiatives are needed to integrate urban agriculture in sustainable city development.

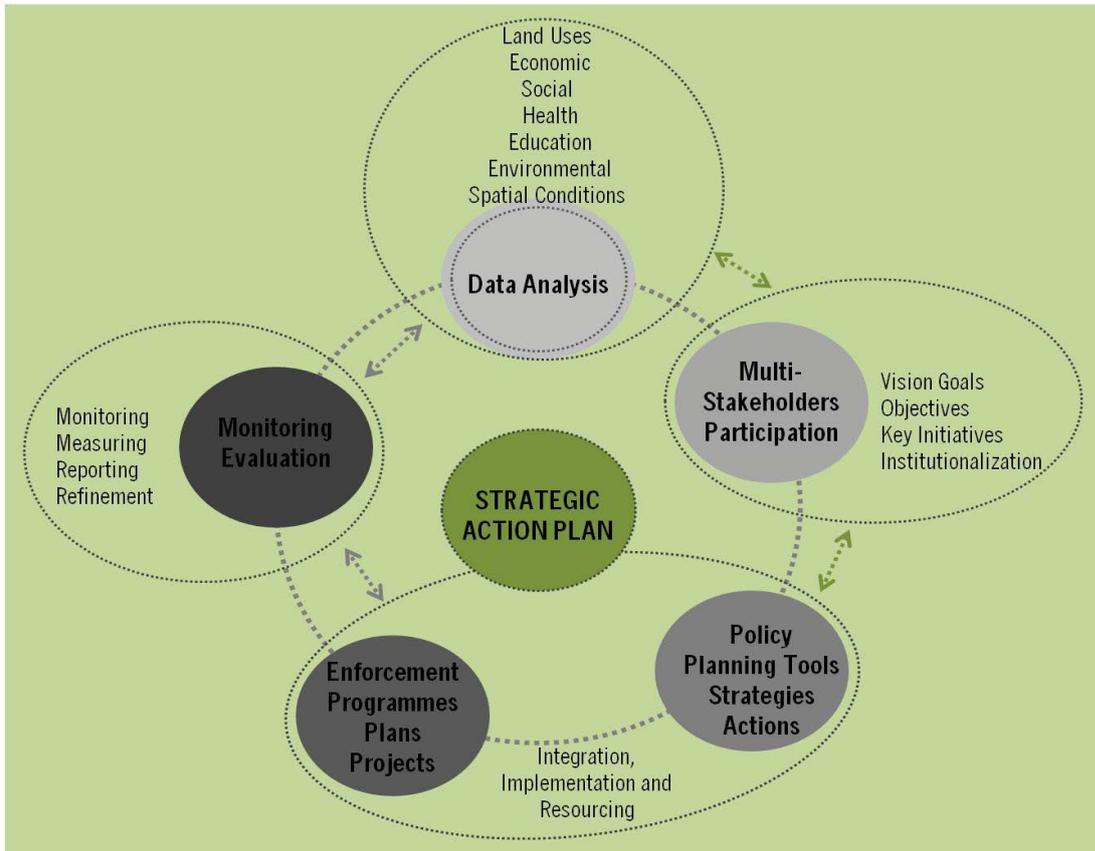
Figure No.65 Urban Agriculture Sustainable Indicators, Source: Designed by the author 2012.

As was mentioned in previous chapters policy makers, planners and governmental bodies are in a reactive momentum in regards to urban agriculture. It is not consider a priority on the urban agenda, although there are high level of food insecurity and this is an interesting strategy that can effectively assists to foster economic development, reduce poverty, improve environmental conditions and security issues among others in Cape Town.

There is an urgent need to enhance planning tools and mandates for promotion urban agriculture, support urban gardens, tackle impacts and create new scenarios for implementing projects. The urban agriculture plan should set up objectives, stakeholders roles, scope and scale, planning tools, strategies and policy.

There are five clear components in an urban agriculture plan. First, gather and analyze data on land uses, economic, social, health, education, environmental and spatial conditions. Second, the creation of consultative forums

through multi-stakeholders participation, engaging a wide range of key players to shape the plan. Third, the creation of specific planning tools, strategies and actions formulated in the legal framework, approving the procedures. Fourth, the enforcement of policy, programmes and plans created in the consultative forums. Finally, the monitoring and evaluation process, ensuring proper updates according to needs identified or new visions (See figure No.66)



With a plan in place, City of Cape Town would have an opportunity to capture the full social, economic, environmental, health, and spatial benefits of a larger and more robust network of gardens developed in public space; with the possibility to create business and food system vision. An adopted plan should have legal recognition, established in compliance with the existing urban agriculture policy, Zoning Schemes Regulations and Spatial Development Framework.

Figure No.66 Urban Agriculture Action Plan, Source: Designed by the author 2012.

Data Analysis

As was mentioned, there is a lack of basic and reliable information about urban agricultural activity which enables policy makers, urban planners and politicians to understand the dimension, benefits and constraint to create proper planning tools concerning urban farming matters.

After conducting surveys implemented urban agriculture indicators, the next step is focused on analyzing and processing the data to create strategies and actions in short, medium and long term to tackle the main impacts identified, promote benefits; as well as formalizing and

legalizing procedures and institutionalize processes to enforcement policies and planning tools.

Collecting and analyzing data on urban agriculture takes time, effort, and some technical knowledge that can be supported by national and international practitioners. However, government bodies, support organizations, NGOs, private sector all should contribute in supporting the collection of data on urban agriculture's impacts.

Multi-stakeholders participation

As was mentioned before, bottom up and top down strategies are integrated in the multi-stakeholders participation, creating interesting dynamics among institutional and non-institutional participants that will assist to formulate policies, strategies and actions; according to real needs through improving or creating planning tools.

Organization, coordination and communication among key role players are essential to provide proper recognition and promotion to urban agriculture strategies and actions; as well as creating awareness and specific roles in the strategic planning. Governmental bodies already identified in this research, NGOs, academy, private sector and community should recognize the leader who will guide and institutionalize the democratic process. This leader should help to establish responsibilities for actions' execution, provision of technical support, access to resources needed, organizational support and function coordination, monitoring, evaluation.

State and non-state stakeholders should lend their expertise according to their field in shaping policy, and enabling them to fully document the current status quo, potential impacts and challenges ahead of urban agriculture. Donor organizations are new stakeholders that should be integrated to increase funding and facilitate actions execution.

Community members and urban farmers are crucial role players that should develop the commitment to actively participate in these consultative forums in order to understand current status quo of urban agriculture and

needs which require urgent attention. Establish planning, implementation and feedback mechanisms between policy level and communities for efficient participation to steer development of planning tools and actions.

The main steps to follow are summary as follows: create scenario for multi-stakeholders participation, identify key role players from different categories and levels, institutionalize the process, define a leader, establish the coordinating body, create the channels of permanent communication and cooperation, establish functions and responsibilities per stakeholder, set up strategies and actions according to needs, provide legal framework to all these strategies through ordinances or mandates, institutionalize procedures to evaluate and monitor urban agriculture based on sustainable indicators, establish procedures to oversee law enforcement in compliance with the stakeholders' common agreement.

Policy

The legal recognition of urban agriculture was officially granted by the Urban Agriculture Unit, currently, working in the formulation of the second version. The urban agriculture policy should include parameters and recommendations to integrate it more fully into City of Cape Town.

Although the new version is based on sustainability approaches, increasing the scope and scale, there are some parameters identified during the research process that should be included in such policy.

Ten aspects require the attention to be revised:

1. Provide universality to the policy, including all citizens in food production as measure to reconnect city, avoid disparities and inequalities.
2. Mapping suitable land for allocating urban agriculture (criteria to identify land)
3. Setting guidelines for infrastructure required to adequately support the projects and programs.
4. Funds and annual operating budget and human resources allocation.
5. setting up conditions to multi-stakeholders participation.
6. Health risks associated to urban agriculture
7. Integration into city's programmes and official agencies.
8. Possible donors and guidelines for

an urban agriculture action plan. 9. Clarifications of Environmental Impact Assessments to community gardens allocated in public open space. 10. Create transparent and participatory process in policy formulation, enabling stakeholders to influence decision-making.

By modifying or adjusting existing regulations and procedures for developing city-owned land, integrate new role and responsibilities; government agencies have many opportunities to facilitate grassroots efforts and encourage creation of new gardens and preserve areas of significant value in agriculture matters, the case of PHA.

Integral part city strategies

Establish integration with existing plans and programmes related to greening the city, food security, poverty, VIH, economic development, education, youth engagement, Millenium Development Goals, among others; are required to incorporate urban agriculture into integral part of city strategies.

The urban agriculture policy, programmes, action plan should be developed in harmonization with departments, policies and programmes related to land, health, food, poverty, education, waste, water; already launched or in further development in order to work as integral component. With the aim to hold common efforts in the sustainable vision of Cape Town.

Linking of urban agriculture activities with other areas of sustainable city development such as waste and water management, informal economies, local markets is an important step in the promotion of citizens economic development.

Institutional revision: Urban Agriculture Unit

The Urban Agriculture Unit should establish objectives in line with the new land use category; as well as, looking for more financial resources to support existing and future urban agriculture activity.

The Unit urgently requires more human resources in order to create a work coordination

team that develops the new functions responsibilities acquired in the action plan.

The Urban Agriculture Unit should be in charge of creating and setting the conditions to hold the process of consultative forums, multi-stakeholders participation, broaden participation in policy formulation, decision making and planning. Conduct the process of monitoring and evaluation, policy enforcement and promotion of local markets to ensure economics improvement.

One of the most important new roles is mapping suitable for urban agriculture and creating the inventory to allocate projects according to certain criteria in compliance with the Spatial Planning Department. Other important functions are the establishment of equitable access to material and financial resources and reduce bureaucratic procedure to urban farmers to get subsidies in regards to land and water.

Ongoing Extension and Networking

Urban farmers should receive permanent technical support and extension. Services in regards to education, management capacity and inputs such as compost, seedlings, seeds should make available to community members interested in launching urban agriculture gardens.

Legal advice and support mechanism in terms of access to land for developing gardens in public open spaces should be provided by the Urban Agriculture Unit. Financial support and facilities are new components that require special attention in order to foster projects' implementation.

Provide support for more networking among farmers ensures to benefit, learn and transfer proper knowledge that enables to enhance urban gardens and skills capacities. The large, medium scale events should be focused on food production, urban garden techniques, low tech, high tech, nutritional standards, seasonal crops, among other. It is an interesting strategy to reconnect city of Cape Town.

Land in planning tools

Land issues can be solved through proper mandate, mapping areas to ensure land availability and accessibility, agricultural infrastructure, registration, monitoring and evaluation; including tools and guidelines into zoning schemes regulations, spatial development framework and policy.

New strategies to understand urban agriculture dimension, get access to land, infrastructure should be developed through the enforcement of the two planning tools in Cape Town. The main idea is to transform public open space into a more productive use, permanent or temporary.

The first strategy proposed by this research is to create *Mapping land* in two lines; existing gardens and vacant public open land suitable for implementing urban agriculture. Methodologies for mapping vegetable production on open spaces have been successfully implemented in some cities around the world. Mainly Geographic Information Systems (GIS) can be used for mapping land for urban agriculture in which the mapping procedure comprised an analysis of aerial imagery, mapping in the field, and integration of the results into a GIS. This is a way to document all existing urban agriculture scenarios at home and community level in Cape Town.

All vacant lots located in public open space can be identified and geo-referenced to build up an inventory which information about location, plot size, status of sites, quality of soil, community in proximity the area, water and electricity suitability, costs to convert the site to an agricultural, use land owner, etc.

Through mandate the Planning tools should make the identification, zonification, allocation and designation of land. If these areas are identified and defined for urban agriculture purposes by mandate, the competition among uses will be substantially reduced. This is the methodology to identify scenarios of urban agriculture and create a productive green infrastructure during the next years, ensuring the sustainable development of City of Cape Town.

The identification of parcels of public and private land located in public facilities such as schools, clinics, libraries, old age homes, council buildings will be a huge step to ensure proper allocation of urban agriculture with all the infrastructural facilities required.

Second strategy is the creation of a Land Bank based on the information gathered in the mapping section. It will contain all the available lots, parcels, vacant plots located in public open space or public facilities and public land that will be used in future time for infrastructure development. All this land information should be accompanied by the specifications and features that categorize the land suitable to grow food. This information will enable the Urban Agriculture Unit to make a classification of the suitability of those areas according to various criteria. It will bring opportunity to make negotiations with landowners for temporary or permanent use according to needs and guidelines. It will enable to monitor these areas in order to avoid encroachment or illegal uses.

Third strategy is the creation of medium or long term leases to ensure land tenure by urban farmers with accessible credits that encourage communities to work on urban agriculture. The lease should help to organise farmer groups. Landowners will be benefited by providing a tax reduction.

Fourth strategy is to foster mixed use concept through implementing urban agriculture in new housing development projects, urban renewal strategies or slum upgrading. It is well known that the priorities lie on housing; the concept mixed use development can be successfully integrated for enhancing economies, greening the area, providing recreational activities, benefiting communities, while creating productive green spaces in public open spaces with the implementation of urban agriculture projects.

Philippi Horticultural Area

As was mentioned before, the Philippi Horticultural Area (PHA) is the major green lung, centrally located within the City and has the sufficient urban arable land to feed the whole city. PHA has 3400 hectares which more

than 1,200 hectares are suitable for food production. This area produces significant volumes of food, most of which goes directly into the Cape Town food system.

The Zoning Schemes Regulations and Spatial Development framework should develop specific guidelines, strengthen and promote urban farming in the Philippi Horticultural Area, in conjunction with the conservation of the historical agricultural area.

There are extensive public and private open spaces in PHA, the stakeholders are focused on protecting this area and implementing urban agriculture, there are planning tools and policy framework for urban agriculture created; as well as there are some needs to provide food security, reduce poverty, unemployment rate, improve the environment and be prepared for food crisis, urban growth, peak oil among others. This area should be use a reserve land for urban development located in public open space with the capacity to provide the sustainability vision to Cape Town. The creation of productive sustainable infrastructure in large scale, that is able to feed the whole city. The big mission on protecting this area by using planning tools is the main challenge ahead for policy makers and urban planners in Cape Town.

Food Systems and Programmes

It is important to identify the role of urban agriculture in food systems' strategy in Cape Town; as well as developing guidelines to include it into the main programmes related to increase nutritional standards, food access and food support provision in schools and old age homes. New development projects should integrate urban agriculture as strategy to improve economic development and greening the city. Integrating urban agriculture policy into the existing city policies and plans to address the main issues aforementioned is required to build up a solid implementation.

It is important to take advantage of the existing resources available such as the Philippi's Food Produce Market, currently, working in low capacity and which has the complete infrastructure required process all the vegetables produced by urban farmers; ensuring

good standards of quality and constant production.

Community

Community is playing the most important role in urban agriculture implementation. For this reason, they need to create organization and commitment around urban agriculture. They should be actively involved in the development of planning tools and decision-making.

Education in agri-business and management is required for building leadership concepts and commerce capacities. Urban farming organizations embrace the concepts of organized cooperatives that can interact to create networking, transfer knowledge, provide support and reconnect city.

It is important to establish planning, implementation and feedback mechanisms between the Urban Agriculture Unit and communities for efficient participation to steer development and make corrections urgently required.

Budget and Funds

It is important to increase the provision of budget to the Urban Agriculture Unit for being more proactive and develop the new functions and responsibilities granted in the action plan. Acquisition of new funds, resources, donors and support organizations are required to provide proper support and enforcement the urban agriculture policy.

Reliable information regarding urban agriculture assist to provide clear perspective and explain donors the current situation and challenges ahead; as well as helping to design programmes and grants to meet the needs properly.

The urban Agriculture Unit should establish annual operating budget, infrastructure, needs and challenges to adequately support the urban agriculture action plan. Adequate staff is required to carry out the tasks of implementing the policy. Engage the urban agriculture community in the budget process.

The possible foundations or donors can fund specific home or community gardens, education, tools, training, data collection and leverage

public investment in a wide range of initiatives to support urban agriculture. The main idea is to create awareness of sustainability matters and foster its position in the political arena to increase the governmental attention and budget.

Urban agriculture tourism facility, Educational Urban farms

As is promoted by the Spatial Development Framework, it is important to establish the basis for environmentally sustainable tourism with strategic activities and resources that enhance people's quality of life; as well as contributing to improve citizens economies. Eco-tourism and agro-tourism are activities essentially included to contribute to poverty reduction, economic empowerment, job creation, business and skills development. According to the location of projects this tourism activities can generate recreational and economic opportunities.

Underprivileged communities through implementing urban agro-tourism can be benefited increasing their economies and gaining voice in the sustainability scenario projects. Philippi Horticultural Area has naturally created the scenario to promote urban agriculture agro-tourism.

Promoting the new concept of educational urban farms organized by NGOs in which users can learn how to do farming and develop their skills capacities, learning from people at the grassroots level, is an interesting strategy that requires further exploration.

The urban agriculture tourism facilities can be enhanced by the user's scenic experience and understanding of the new vision of transforming the city through redesigning public space with urban agriculture projects.

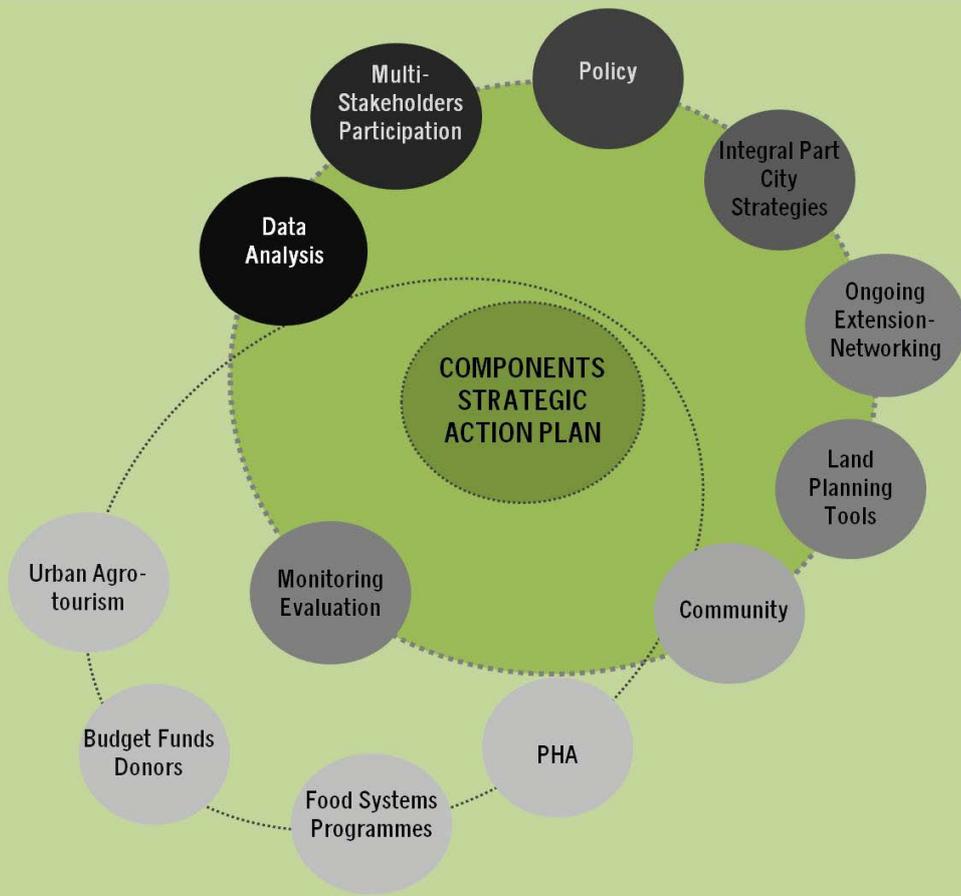


Figure No.67 Components Strategic Urban Agriculture Action Plan, Source: Designed by the author 2012.

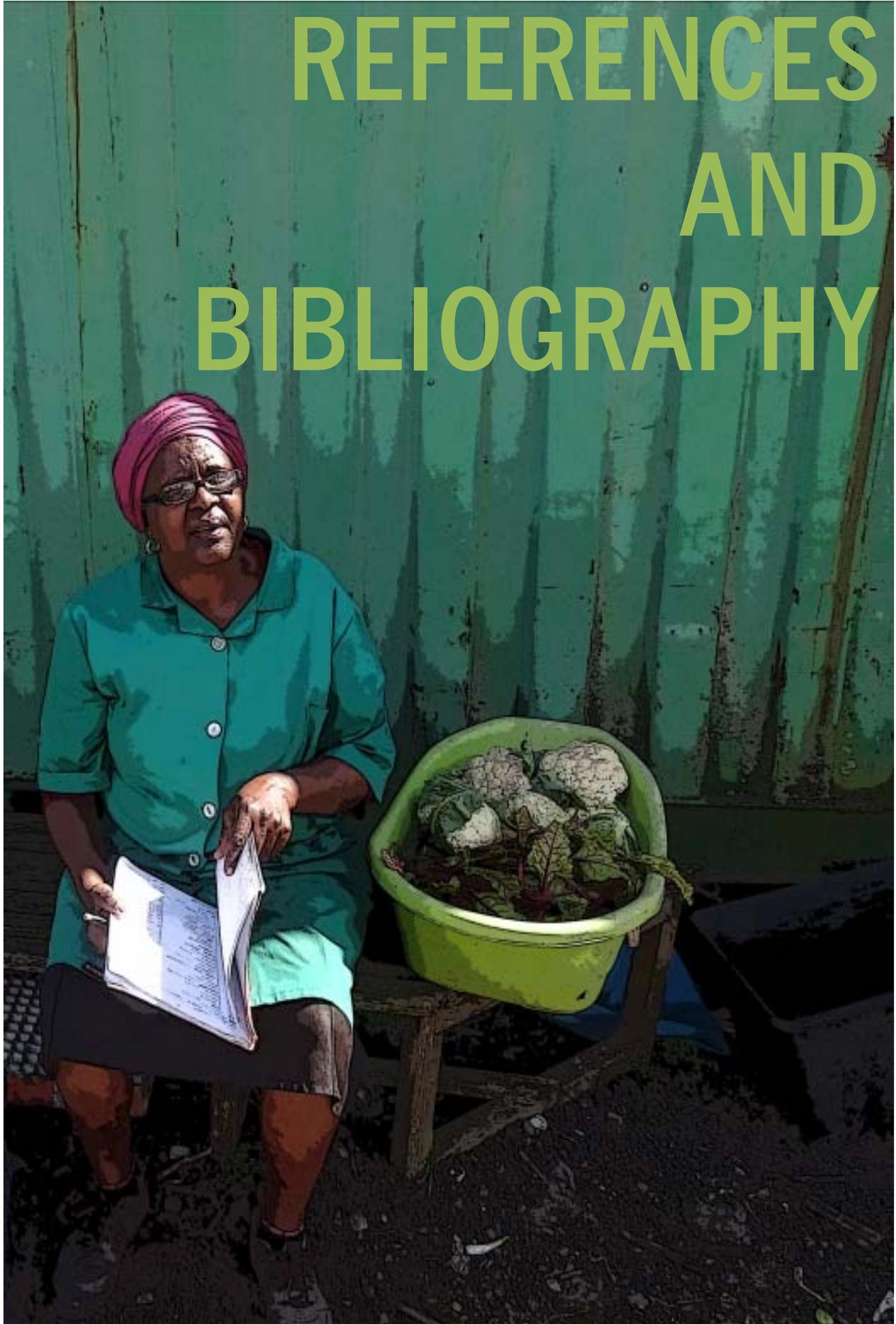
Final conclusion

The vision of integrating urban agriculture into the spatial planning and land use management was created in order to assist to catalyze its implementation and provide tools to encourage its inclusion in the political agenda of Cape Town. Raising awareness among urban planners, governmental bodies and politicians is the main task to foster and position urban agriculture as a sustainable productive infrastructure able to feed the city.

This research empirically demonstrates that it is possible to integrate urban agriculture into the urban development agenda to tackle the main urban challenges, providing formal recognition to it; as well as implementing strategic and innovated planning tools, using existing resources available in the city and creating the most perfect scenario for developing it: public open space, a productive green infrastructure.

The successful and sustainable integration of urban agriculture into urban land use systems requires multi-stakeholder approach for developing shared vision, resolving conflicts, formulating policy, developing joint action programmes and participating in decision making.

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ANNEXES
Annex 01a

LIST OF FORMAL CONDUCTED INTERVIEWS IN CAPE TOWN			
Date	Name	Position	Organization/ Department
INSTITUTIONAL LEVEL			
11-10-2012	Stanley Visser	Head: Development Facilitation, Urban Agriculture Unit Agronomic Engineer	Directorate: Economic and Human Development, City of Cape Town
11-10-2012	Peter Grey	Project Packaging Unit Town Planner	Directorate: Spatial Planning and Urban Design Economic, Environmental and Spatial Planning, City of Cape Town
11-10-2012	Claus Rabe	Metropolitan Spatial Planning and Growth Management Urban Manager	Directorate: Economic, Environmental & Spatial Planning, City of Cape Town
15-10-2012	Spencer Fowlie	Assistant Project Officer in Urban Agriculture unit. Environmental education and community development Environmental Educator	Rooftops Canada
17-10-2012	Schalk De Jager	Senior professional Officer: Land Use Management Planning and Building Development Management Department	Directorate: Planning and Building Development Management, City of Cape Town
22-10-2012	Bradley Burger	Coordinator: Planning and Development, City Parks.	Directorate: City Parks, City of cape Town
22-10-2012	Andre Human	Head: Property Management Department Development Manager	Directorate: Property Development Department, City of Cape Town
22-10-2012	Janeth Bodenstein	Head: Environmental Impact Assessment regulations	Environmental Department
23-10-2012	Vernon Moonsamy	Senior professional office: District spatial planning City and regional planner, environmental and geographer	Directorate: District Spatial Planning, City of Cape Town
23-10-2012	Sonette Smit	Principal Landscape Architect)	Directorate: Spatial planning and Urban Design, City of Cape Town
28-10-2012	Brian Verwey	Deputy Chief Architect Architect	Directorate: Human Settlements Department Provincial Department
NGOs LEVEL			
12-10-2012	Louise Vaughn	Manager of the training team social Anthropologist and Psychologist	Soil for life NGO

16-10-2012	Rob Small	Head and Founder Engineer	Abalmi Bezekhaya Harvest of Hope The Farm and Garden National Trust
18-10-2012	Katharine Miszewski	VPUU Educator	VPUU (Violence Prevention through Urban Upgrading programme)
ACADEMY SECTOR			
23-10-2012	Jane Battersby Lennard	Professor and Researcher Urban Social and Cultural Geographer	Researcher and professor of University of Cape Town (Urban Food Security and Contemporary Urban Challenges, Convenor)
PRIVATE SECTOR			
25-10-2012	Thomas Swana	Chief Executive Officer of PEDI	Philippi Economic Development Initiative
26-10-2012	Matthew Thomas	Marketing and PR	Philippi Economic Development Initiative
COMMUNITY LEVEL			
12-10-2012	Royce Peters	Urban Farmer	Home Garden
12-10-2012	Charles Military Heights	Urban Farmer	Home Garden
16-10-2012	Mamas Philipina and Mabel Bokolo	Heads of Guguletu garden: Abalimi Bezekhaya NGO	Community Garden
16-10-2012	Ria M	Volunteer of Guguletu garden: Abalimi Bezekhaya NGO	Community member
16-10-2012	Mary Agiakatsikas	Beneficiary	Community member
18-10-2012	Mamas Lulekwa and Leziwe	Heads of Khayelitsha garden: Abalimi Bezekhaya NGO	Community Garden

Electronic Interviews			
INSTITUTIONAL LEVEL			
24-10-2012	Kier Hennesy	Principal Spatial Planner	Southern District & Cape Flats District, City of Cape Town
ACADEMY SECTOR			
29-08-2012	Gareth Haysom	Programme Manager of the Sustainable Agriculture Programm	University of Stellenbosch, Sustainability Institute
PRIVATE SECTOR			
14-11-2012	Gita Goven	Architect	ARG Design

INSTITUTIONAL LEVEL

Annex 01: Questioner; Urban Agriculture Unit: Agronomic Engineer **Stanley Visser**

1. How Urban Agriculture Unit interacts with the other departments (spatial, land, environment, economic, water)?
2. What are the main challenges regarding urban agriculture?
3. Is there a competition for land among urban functions, land uses (housing, industrial, commerce, education, etc) and urban agriculture?
4. How is the process to set up an urban agriculture project?
5. How local government is supporting communities for implementing UA, How is the whole process for implementing and authorizing a community garden?
6. How do you control or monitoring these gardens? Who is in charge of that?
7. How is distributing the budget for UA projects?
8. Why only the 4% of urban agriculture has been implemented after launching the policy in 2007?
9. How is the relationship among the UAU and the stakeholders involved in UA?
10. There is a clear competition for land and some intentions for housing development in Phillipi area, this situation is putting in risk the urban agriculture areas, and how UAU protects, controls or gives priority to this area?
11. what about the role of UA as a land use?
12. Is there a revision of the UA policy coming up?
13. How long does it take to finish the revision and launch the new version, how is this process?
14. What are the priorities in the new version of UA policy?
15. How is the relationship with the water department? UA policy is promoting subsidize water for UA (10 kl), how this process works?
16. There are some community gardens reusing waste and water?
17. Why the urban agriculture policy does not contemplate the whole population and it is only focus on the poor communities?
18. How the UAU works? How many people work?
19. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
20. How is the process with UA products in CT?
21. Food system is a new vision for CT?
22. How is the perception of urban agriculture in Cape Town? Do you think that the policy regarding urban agriculture would be implemented in a comprehensive manner?
23. Do you know in which area of Cape Town, community/ NGOs/ Government have already set up projects in regards with urban agriculture in the public space?

Annex 02 y 03: Questioner; Economic, Environmental & Spatial Planning, Metropolitan Spatial Planning and Growth Management: Urban Manager **Claus Rabe**

Spatial Planning and Urban Design
Economic, Environmental and Spatial Planning: Town Planner **Peter Gray**

1. How Metropolitan Spatial Planning and Growth Management branch perceived the integration of urban agriculture in spatial planning? Do you think that it would be included as a land use plan?
2. How is the perception of urban agriculture in Cape Town? Do you think that the policy regarding urban agriculture would be implemented in a comprehensive manner?
3. How spatial planning department interacts with the Urban Agriculture Unit?
4. How do people have access to land for urban agriculture purposes?
5. What kind of types of urban agriculture the city of Cape Town has?
6. Why urban agriculture does not have major significant in the city?

7. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
8. what about the role of UA as a land use?
9. Why the spatial planning through the SDF does not promote UA as main activity for economic development and food security?
10. Is it possible to consider UA as a complement for new housing development or slum upgrading projects?
11. Which departments should be involved in UA?

Annex 04: Questioner; Urban Agriculture unit from Roof tops Canada: Environmental Educator **Spencer Fowlie**

1. What are the main challenges regarding UA?
2. Which department is responsible for UA?
3. What is the role of the local government, private sector and NGOs in UA?
4. How is the relationship between local government and NGO?
5. What are the main challenges regarding UA?
6. Who has the responsibility for training and monitoring the UAU, the NGOs?
7. Which departments are in charge of empowering UA?
8. Is there a gap between the formulation and the implementation?
9. Why the UA policy does not clarify the health risk involved in UA, when the projects reuse water and waste?
10. How the subsidized water for venerable groups that implement UA project works?
11. Has the UAU identified and mapping the number of UA gardens?
12. Which departments are in charge of collecting data regarding UA and mapping the gardens?
13. What is the new vision of the new UA policy?
14. What are the strategies to promote UA?
15. To what extent UAU could be more proactive?
17. How Capetonians perceive UA?
18. How the UAU can get more budgets?
19. What would happen if UA is considered as a land use?
20. How is the process to get land for UA?
21. Are there some guerilla gardens in CT?
22. What happen when the local government find out some illegal gardens, they legalize them?
23. Is it possible to implement UA in the vacant plots in CT?
24. is there cooperation for creating the new policy?
25. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
26. Why the UA does not set up UA projects?
27. What is needed in UAU to increase the human resources?
28. Has UA potential in CT?

Annex 05: Questioner; Land Use Management: **Schalk De Jager**

1. How the land use management department interacts with the UAU and the other departments (spatial, environment, economic, water)?
2. In the new version of zoning schemes UA will be consider as a land use?
3. What will be the impacts of this new land status for UA?
4. is possible to allocate land areas suitable for UA?
5. Is there a competition for land among urban functions, land uses (housing, industrial, commerce, education, etc) and urban agriculture?

6. Is PHA in risk for housing development?
7. What is the process to get land for UA?
8. Is it possible to implement UA in the vacant lots in CT, more specific in the public open areas?
9. Will be a new version of the land use ordinance?
10. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
11. How are the prices for land in terms of UA?
12. What are the strategies to promote more UA in the city?
13. How do you act when you find out an illegal UA project?
14. How is the relationship with the water department if the application is for UA?
15. How do you monitor that the land is being using for the right property?
16. Which should be the main departments involve in UA?

Annex 06: Questioner; City Parks: Bradley Buger

1. How city parks department interacts with the other departments and the UAU?
2. What are the criteria for identifying land for UA?
3. What are the main challenges regarding UA?
4. What are the advantages and disadvantages of implementing UA in public open space?
5. What are main problems in PHA?
6. What would be the strategies to foster the implementation of UA in public open space?

Annex 07: Questioner; Property Management Department: Development Manager Andre Human

1. How property management Department works and how this department interacts with the other departments?
2. How does this department interact with the environmental, land an economic department?
3. How is the relationship with UAU?
4. is possible to identify suitable land for UA and allocate this?
5. How is the process to have access to land for UA?
6. What happen if the land is not using it in the proper purposes that were required for?
7. Who is in charge of monitoring the whole process?
8. How is the process for allocating land?
9. How long does it take this process?
10. What are the main challenges regarding UA?
11. What kind of resources the UAU need in order to work properly?
12. What would be the strategies to foster UA?
13. Which departments should be involved in creating these strategies?
14. What would be the advantages and disadvantages to get the status of land use to UA?
15. Who is in charge of establishing these priorities?
16. Is there an option to combine housing development with UA?
17. What are the positive and negative effects to implement UA in vacant plots in UA?
18. How many land has this department allocated for UA purposes?
19. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?

Annex 08: Questioner; Environmental Department: Janeth Bodenstein

1. How Environmental Department works and how this department interacts with the other departments?
2. How the Environmental Impact Assessment for UA project?
3. Who is in charge of monitoring UA projects?
4. How environmental department control projects that are impacting the environment?
5. How do you monitor vacant plots that have been converted into dumping areas?
6. What are the main challenges regarding UA?
7. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
8. Has the environmental department collaborated with the UAU to build up the new version of the policy?
9. Which departments should be involved in UA?
10. What would be the advantages and disadvantages to get the status of land use to UA?

Annex 09: Questioner; District Spatial Planning: City and regional planner, environmental and geographer **Vernon Moonsamy**

1. How District Spatial Planning department works and how it interacts with UA?
2. Have you had already mapping the UA projects?
3. In which kind of projects is this department working on PHA?
4. What would happen if UA get a new status like land use?
5. is it possible to implement UA in the vacant plots in CT or the priority will be housing?
6. Why district planning department is doing in PHA?
7. Does district planning department have historical maps of PHA, in order to understand the illegal activities and the problems with the edge?
8. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
9. How the spatial planning department can promote UA?
10. Who suggested integrating PHA in the SDF?
11. What the SDF has improved the projects that the city has done?
12. Based on what kind of criteria this department prioritizes the investment?
13. Is there any decision made on that land already regarding housing development in PHA?
14. How urban agriculture should be assessed in the future in the city? Which department should do this process, based on what kind of criteria?
15. What kind of criteria the spatial planning should be considered for allocating land for UA?

Annex 10: Questioner; Spatial planning and Urban Design: Landscape Architect **Sonette Smit**

1. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?

Annex 11: Questioner; Spatial Planning, Southern District & Cape Flats District: Spatial Planner **Kier Hennesy**

1. How is the perception of urban agriculture in Cape Town?
2. What are the main challenges regarding urban agriculture?
3. Is there a competition for land among urban functions, land uses (housing, industrial, commerce, education, etc) and urban agriculture?
4. This competition is affecting urban agriculture implementation in public open space?

5. There are plenty green areas in Cape Town, Is there any option to implement urban agriculture in this vacant plots? What is the process to have access to this public land for implementing urban agriculture? Which department is in charge of providing access to land for urban agriculture purposes?
6. How the Spatial planning department interacts with the other departments (land, environment, economic, water, and waste) and the urban agriculture unit in order to support urban agriculture projects? What the role of this department in urban agriculture in Cape Town?
7. What are the advantages and disadvantages of implementing urban agriculture in public open space?
8. What would be the strategies to foster the implementation of urban agriculture projects in public open space?
9. Why urban agriculture policy has not been implemented in a comprehensive manner?
10. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
11. There is a clear competition for land in Philippi area, this situation is putting in risk the urban agriculture areas, how is possible to protect, control or give priority to this area?
12. What have been the main experiences in Philippi Horticultural area? Could you explain me the vision plan for Philippi Horticultural area in the spatial development framework? How was the process to integrate PHA in the SDF?
13. Do you have historical maps regarding Philippi horticultural area, the recent policies related to PHA, Schaapkraal

Annex 12: Questioner; Human Settlements Department: Architect Brian Verwey

1. How the local, provincial, national government works, how is decision making process?
2. How do you interact with the other departments?
3. What are the main priorities in Human Settlements department?
4. How do you prioritize the services and the people?
5. What are the main challenges regarding UA?
6. How the human settlements department can help to promote UA?
7. How do you get the land?
8. What is the process that designs follow in human settlements departments?
9. Will the human settlements department promote UA in the green areas available? At the community centers?
10. Integrated UA in the human settlements projects could be a new vision?
11. What is the potential of UA in CT?
12. Is there any interaction between the human settlements department and the UAU?
13. Does the human settlements department need more budget in order to integrate UA into the projects?
14. In the case of integrate UA in the human settlement projects, which entity will be in charge of monitoring the UA project?
15. How many projects regarding housing development the human settlements department has?
16. Are there some provinces at the human settlements level that are in better position than the other ones?
17. What are the main challenges in human settlements department?
18. What are the positive aspects of this department?
19. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
20. Which departments should be involved in UA?
21. Has the human settlements department opened to collaborate in decision making in terms of UA?

NGOs LEVEL

Annex 13: Questioner; Soil for life: social Anthropologist and Psychologist Louise Vaughn

1. When was the organisation established? How did the organisation come into being?
2. What legal status does the organisation have? Where and how is it registered?
3. In what fields does it work? Is the NGO specialized in a field (consulting, education, advocacy, training etc.)?
4. Do you approach the community or people come to Soil for life asking or some support in regards to training for UA?
5. How the community members can apply to this of this training?
6. How many people are employed? What is their professional background?
7. What role plays the community into the NGO, levels of participation?
8. What the NGO means for the community?
9. How is the management/internal decision-making organised (democratic, professional, hierarchy)?
10. How do you implement projects regarding urban agriculture, process? How is the procedure (land, regulations, access, and approvals)?
11. Do people implement UA in their own public space in front of their house?
12. How the NGO interact with the local government to launch projects focus on urban agriculture?
13. Who finances the NGO?
14. How many projects regarding urban agriculture are currently implemented?
15. How is urban agriculture perceived in Cape Town? Is there a common understanding about it?
16. Do you think that the local government has a clear understanding about UA among the different departments?
17. Do you have common goals with UA policy: food security, economic development?
18. Who are the target groups? Does the organisation work with specific groups (ethnic, men/women/youth, professional groups)?
19. Do you have other alliances with NGOs or private sector?
20. How is the relationship with other NGOs such as Abalimi?
21. How do you define goals in the NGO?
22. Are you training people with the reuse of waste and water? Explaining the health risk?
23. What is your opinion about the UA policy?
24. Why are you teaching people in UA?
25. Why the urban agriculture policy has not been implemented in a comprehensive manner?
26. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
27. What are the main challenges regarding UA?
28. Why some gardens are successful and others are not?
29. How many people are actively participating in the home gardens?
30. How many hours people spend doing UA?
31. Some people are selling or exchanging food? There s a food system?
32. How many product the community is cropping?
33. How many students are participating in the school gardens?
- 34, the students are reinforcing UA I any subject?
35. Why the NGO is called Soil for life?

Annex 14: Questioner; Abalmi Bezekhaya, Harvest of Hope, the Farm and Garden National Trust: Engineer Rob Small

1. What role is playing Abalimi in UA in CT?
2. Should the local government be more proactive in terms of UA?
3. What are the main challenges regarding UA?

4. Has Abalimi contributed to the new version of UA policy?
5. Is there a competition for land among urban functions, land uses (housing, industrial, commerce, education, etc) and urban agriculture?
6. Are there problems with weather conditions in CT that are affecting UA?
7. What would happen if UA is considered as a land use?
8. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
9. When did you start this garden?
10. How many gardens do Abalimi have?
11. What is the Abalimi's scheme?
12. How is the training?
13. How do you get water for UA projects?
14. How much the training cost?

Annex 15: Questioner; VPUU: Educator Katharine Miszewski

1. What is the vision role of VPUU in UA?
2. How you will get land to implement UA projects?
3. What are the projects that VPUU has been involved?
4. What is the main aim of VPUU?
5. How do you get land from provincial and the city?
6. Do you receive support from some departments?
7. What is your area of scope in CT?
8. What are the levels of participation of the community, how do they are involved?
9. How the community perceives these kind of initiatives?
10. How long has VPUU operated in CT?
10. Who finances VPUU?
11. Who will be involved in UA projects?
12. How many projects have VPUU implemented in the last years, all of them in Khayelitsha? And how many projects are running now? Do you have some statistics regarding the impact of these projects in the community?
13. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?

ACADEMY SECTOR

Annex 16: Questioner; University of Cape Town: Urban Food Security and Contemporary Challenges Department: Urban Social and Cultural Geographer Jane Battersby Lennard

1. How is the perception of UA in CT?
2. What are the main challenges regarding UA in CT?
3. Is there a competition for land among urban functions, land uses (housing, industrial, commerce, education, etc) and urban agriculture?
4. Is this competition among land uses affecting UA implementation in CT? or what are the factor that have been affecting comprehensive implementation of UA in CT?
5. What should be the role of the local government in UA? Which departments should be involved?
6. Is it possible to implement UA in the vacant plots in public open space CT?
7. Why are some successful and non successful projects regarding UA in CT?
8. Which entity should be in charge of mapping UA projects and make a record?
9. How did you get to the number that only 5% of UA projects have been implemented after the UA policy?

10. What are the advantages and disadvantages to implement UA in public open space?
11. What would happen if UA gets a new status as a land use?
12. What has been your experience in PHA that inspired you to write about the problematic in this area?
13. What are the strategies to promote UA in CT?
14. How the academy can support UA in CT?
15. What are the strategies to protect PHA?
16. Is there potential to UA in CT?
17. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?

Annex 17: Questioner; Sustainability Institute: Gareth Hyasom

1. How is the perception of urban agriculture in Cape Town? Do you think that the policy regarding urban agriculture would be implemented in a comprehensive manner?
2. Do you know in which area of Cape Town, community/ NGOs/ Government has UA projects?
3. Which are your general thoughts regarding UA in CT?
4. What have you been your experience in PHA?

PRIVATE SECTOR

Annex 18: Questioner; Philippi Economic Development Initiative: Thomas Swana

1. How is the perception of urban agriculture in Cape Town? Do you think that the policy regarding urban agriculture would be implemented in a comprehensive manner?
2. Do you know in which area of Cape Town, community/ NGOs/ Government have already set up projects in regards with urban agriculture in the public space?
3. Which are your general thoughts regarding UA in CT?
4. What have you been your experience in PHA?

Annex 19: Questioner; ARG Design: Gita Goven

1. What are the main challenges regarding urban agriculture in Cape Town?
2. Is there a competition for land among urban functions, land uses (housing, industrial, commerce, education, etc)? Is this competition among land uses affecting urban agriculture implementation in Cape Town? Or what are the factors that have been affecting the comprehensive implementation of urban agriculture in Cape Town?
3. What would happen if urban agriculture gets a new status and it is considered as a land use?
4. What are the advantages and disadvantages to implement urban agriculture in public open space?
5. What would be the positive and negative effects to implement and integrate urban agriculture into strategic planning and land use management?
6. Can urban agriculture work in Cape Town as a strategy to reconnect people?
7. What would be the strategies to foster the implementation of urban agriculture projects in public open space? Who should drive this process?
8. How urban agriculture could help to build resilient communities in Cape Town?

COMMUNITY

Annex 20: Questioner; Head of Guguletu garden: Abalimi Bezekhaya NGO Mama Philipina. Home Gardens: Royce Peters and Charles

1. What Abalimi means for the farmers?
2. Why did you decide to work in this garden?
3. How long have you been working here?
4. What kind of products do you crop in this garden?

5. Do you crop different products according to the weather conditions?
6. How and who drives the process for selecting the positions that you have in this garden such as the leader?
7. Did you know how to crop products before came here?
8. What is the percentage of food that s available to go to the market?
9. How is the training process?
10. Do you have a garden in your home?

Annex 21: Survey

URBAN AGRICULTURE SUSTAINABLE INDICATORS

Social Category

Urban agriculture can promote thriving communities by bringing people of all ages together, developing young peoples' skills and knowledge, and creating safe spaces (Cohen et al 2012). The sub categories selected are: Social capital/connection, Youth development, Food Access, Age integrated spaces. These subcategories enable to analyze the level of participation among community members into urban agriculture process, capacity development; commitment, training opportunities; as well as indentifying the main problems in empower community process.

Social capital/connection
<ul style="list-style-type: none"> • # of people participating in farm/garden programs or activities (women, men) • # of total person-hours spent working on the farm/garden per year • Community members' perceived benefits and concerns about urban agriculture • # of farmer's markets the farm/garden sells in
Youth development
<ul style="list-style-type: none"> • # of youth participating in the farm/garden • #, % of farm/garden programs that employ youth (*) • # of youth the farm/garden trained in job skills • # of total youth-person-hours spent working on the farm/garden per year • #, of youth who participated in a program reporting that they are/identify with being "part of their food community" (*)
Food Access
<ul style="list-style-type: none"> • # (\$), % of sales from food access programs (*) • # pounds of food produced by the farm/garden
Age integrated spaces
<ul style="list-style-type: none"> • # of participants over 65 years of age
Ongoing Extension (**)
<ul style="list-style-type: none"> • # of gardens launched in public space with the supported of NGOs, local government, or Private Sector • # of people receiving training, education and support from NGOs • # of gardens receiving monitoring and evaluation <p># of people receiving agri-business education</p>

Economic Category

Urban agriculture can help stimulate local economies, provide jobs and job training, and offer opportunities to earn income through sales of produce and other agricultural products (Cohen et al 2012). The sub categories selected are: Local and regional economic stimulation, Job growth, Job readiness, Affordable healthy food. These subcategories permit to understand how the implementation of urban agriculture in the case study

areas is impacting the local economy at the community and household level as well as levels of training and coverage regarding food programmes and their impacts.

Local and regional economic stimulation
<ul style="list-style-type: none"> • \$ total value of food produced • % of total revenue generated from sales of regional produce • # (hours) of volunteer-time contributed to the farm/garden (*) • #, (\$) from urban agriculture-based farmers market sales (*)
Job growth
<ul style="list-style-type: none"> • # of people employed by the farm/garden (*) • #, % of new jobs created by the farm/garden (*)
Job readiness
<ul style="list-style-type: none"> • # of people the farm/garden has trained in job skills • # of youth the farm/garden trained in job skills • #,% of farm/garden programs that employ youth (*)
Affordable healthy food
<ul style="list-style-type: none"> • # (\$), % of sales from food access programs • # of beneficiaries (family members, schools, community members)

Environmental Category

Urban agriculture sites can contribute to stormwater capture, soil remediation and enrichment, and biodiversity. Additionally, urban agriculture can promote stewardship and community-led planning, as well as a shift toward local and regional food systems (Cohen et al 2012). The sub categories selected are: Awareness of food systems ecology, Stewardship, Conservation, Stormwater management, Habitat improvement / biodiversity / ecological connectivity. These sub categories aims to analyze climate change strategies for mitigation and adaptation; as well as the eco-efficient use of land. Pros and cons regarding recyclability.

Awareness of food systems ecology
<ul style="list-style-type: none"> • # of school students participating in food system ecology programs (*) • # of people training in recyclability process (**) • # of community members participating in recycle process: organic food, water (black, grey, yellow and brown) (**)
Stewardship
<ul style="list-style-type: none"> • # of total participants in food system ecology programs • Community perceptions of the importance of urban agriculture as part of green/open space
Conservation
<ul style="list-style-type: none"> • # (\$) annual consumption of water use • # (\$) annual consumption of energy • #, % (square footage) of land/lot that could potentially grow food • #, % (square footage) of land/lot actually used to grow food • # (pounds) of food waste processed (for compost)
Stormwater Management
<ul style="list-style-type: none"> • # (pounds) of compost produced/processed
Reducing food waste
<ul style="list-style-type: none"> • # (pounds) of food waste collected
Soil improvement
<ul style="list-style-type: none"> • # lead level in the farm's/garden's soil, per year

<ul style="list-style-type: none"> • # (pounds) of compost produced/processed
Habitat improvement / biodiversity / ecological connectivity
<ul style="list-style-type: none"> • # of activities related to increase biodiversity • # of crops grown • % of produce grown without use of synthetic pesticides • % of produce grown without use of synthetic fertilizers

Health Category

Urban agriculture can help improve access to, and affordability of, healthy food for undeserved communities, improve people’s understanding of what makes food healthy or unhealthy, increase healthy eating, and increase physical activity (Cohen et al 2012). The sub categories selected are: Increasing healthy eating, Impacts in health issues.

Increasing healthy eating
<ul style="list-style-type: none"> • # of participants in the farm/garden's health-related programs • # of healthy eating program strategies being implemented
Impacts in health issues
<ul style="list-style-type: none"> • # of community members who improve nutrition standards through food produced in community gardens
Increasing Physical Activity
<ul style="list-style-type: none"> • # of people engaged in farming/gardening on the farm/garden • # of total person-hours spent farming/gardening on the farm/garden per year

Spatial Category (**)

Urban agriculture could be set up in public space without following regulations or policies, resulting in good community sustainable initiatives or in unexpected consequences. The implementation of urban agriculture in public space into cities is conceived as an essential element for sustainable urban infrastructure (Viljoen et al 2009). The sub categories selected are: physical features, type of land, Land use plan and regulations. These subcategories play an important role in the urban agriculture integration, policy compliance, soil conditions, implementation process, support; as well as helping to identify the main advantages and disadvantages that arise when the local government does not monitor the process. This category is a research contribution designed by the author.

Physical features (**)
<ul style="list-style-type: none"> • # of sqm or ha of arable land • Types of products produced • Quality of soil • Quality of setting conditions • Accessibility to infrastructure conditions (Water, Energy) • Quality of setting conditions • Quality of setting conditions
Type of Land (gardens location) (**)
<ul style="list-style-type: none"> • % of Expansion area • % of protected areas • % of invasion or illegal area • % of eviction after urban agriculture implementation • Type of use before implementing urban agriculture

Land use plan and regulations (**)
<ul style="list-style-type: none"> •Urban gardens following urban agriculture policy and guidelines •Urban gardens in compliance with official planning tools (zoning Scheme Regulations and Spatial Development Framework) •Urban gardens out of planning official tools (zoning Scheme Regulations and Spatial Development Framework) • Urban gardens monitoring by local government • Urban gardens monitoring by NGOs. • Urban gardens treating by land use change
Public space (**)
<ul style="list-style-type: none"> • % # of public space that were improved through urban agriculture implementation • % # of public open space or green areas in need of improvement/ total surface of public space • % # of public space suitable for implementing urban agriculture

(*) Apply only to Community Gardens

(**) Designed by the author

Annex 22: Awards NGO Abalimi Bezekhaya

LIST OF AWARDS SINCE 1992

1. Green Trust Environmental Award: 1992
2. Peace Gardens Award: 1994
3. Department of Environmental Affairs and Tourism: Conserva Award: 1995
4. President's Social Forestry Award: 1995
5. Green Trust Environmental Award (for the Manyanani Peace Park): 1995
6. President's Social Forestry Award (for the Manyanani Peace Park): 1996
7. Cape Times Centenary Environmental Award: 1999
8. Shoprite/Checkers Woman of the Year Award: Community Affairs (for Outreach Worker, Christina Kaba): 2001
9. Rotary International (via Waterfront Rotary): Paul Harris Fellowship (for Director, Rob Small): 2001
10. Mail & Guardian/ Green Trust SA/ Nedbank: Urban Environmental Sustainability Award: 2002
11. Nestle: Community Nutrition Award (for Outreach Worker, Christina Kaba): 2002
12. Desmond Tutu Footprints of Leadership finalist (for Outreach Worker, Christina Kaba): 2002
13. Ashoka Fellowship (for Director, Rob Small): 2002
14. Cape Times / Caltex Award finalist (for SEED): 2003
15. Green Trust: Individual finalist (for Outreach Worker, Christina Kaba): 2003
16. Green Trust: Environmental Education finalist (for SEED): 2003
17. Impumelelo Silver Award (for SCAGA): 2004
18. Khayelitsha Achiever Award for Community Development (for Christina Kaba): 2004 (Presented by KDF and City of CT)
19. Social Business Plan award from Business Place Network Nov 2009

20. Impumelelo Innovations Gold Sustainability Award June 2010 for “ABALIMI-Harvest of Hope from seed to table” food security and job creation micro-farming development chain
21. SAB Innovation Award 2011
22. Western Cape Government 110% Green Campaign Flagship project 2012
23. Topos (international landscape mag) 20th Jubilee award at the International Landscape Architects Biennial in Barcelona Sept 2012

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Arch. Gloria Gavidia Sánchez