AN INVESTIGATION OF URBAN AGRICULTURE PROJECTS AS A LOCAL ECONOMIC DEVELOPMENT MECHANISM TO ALLEVIATE POVERTY IN THE NELSON MANDELA BAY MUNICIPALITY

By

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Submitted in partial fulfillment of the requirements for the Degree of Masters in Development Studies in the Faculty of Economic Sciences at the Nelson Mandela Metropolitan University

December 2011

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DECLARATION

This research represents original work by the author and has not been submitted in any form for any degree to any other University. Where use has been made of the work of others, it is duly acknowledged and sourced in the text.

Signature: ----------

ACKNOWLEDGEMENTS

I want to thank my Lord Almighty for giving me the wisdom and the strength to complete this important phase of my life;

I dedicate this study to my spiritual mentor and role model, my late grandfather, Mr Dumani Thomas Khomo;

I want to thank my supervisor, Professor Deon Pretorius, for his guidance and support throughout this journey;

I want to thank my wife, Tembisa, for her support, understanding and encouragement and for always believing in me. I want to extend this gratitude to my family, especially my mother, Vuyiswa (Hilda), my uncle, Agrippa, my elder brother, Mbulelo, and my sister, Nomakhazi;

I would also like to share my appreciation with my extended family members, friends and colleagues who have always trusted me and expressed their good wishes.

DEDICATION

Dedicated to my late grandfather, Mr Dumisani Thomas Khomo.

ABSTRACT

Around the globe, towns and cities are growing rapidly in developing countries due to migration. The rate of urban growth outweighs job creation and the ability of most governments to provide basic services and infrastructure. The process of migration often precipitates into high levels of poverty and hunger, leading many urban dwellers to engage in agricultural activities to help themselves in satisfying their food need.

The context of the research area is the NMBM townships where urban agriculture projects are taking place. There are three urban agriculture projects that were selected for this study and these are located in three different townships within the NMBM. Two of these projects are located in the Port Elizabeth area, which are the Emmanuel Haven Hydroponics Project, which is located in Motherwell Township, and the Walmer Hydroponics Co-operative that is in Walmer Township. The third project is located in the Uitenhage area near Kwa Nobuhle Township and that is the Tinarha Agriculture Tourism Initiative (TATI). The discussion in this research focuses on the NMBM poverty alleviation projects in the form of urban agriculture as a key driver of LED. The discussion also focuses on different factors that are required for urban agriculture projects to be effective and sustainable in the NMBM.

Five project participants from each project responded to a structured questionnaire. Two municipal officials, the Agricultural Technician and the Urban Agriculture Director were interviewed and responded to a separate structured questionnaire. The third official, Assistant Director for Economic Development and Recreational Services was not interviewed but completed a questionnaire.

The aim of the interviews was to determine the following from the project participants:

(i) The impact of the projects in their livelihood;
(ii) The role of the projects in creating employment;
(iii) The views of the project participants regarding the sustainability of the projects.

The aim of the interviews was to determine the following from the municipal managers:

(i) The approach of the NMBM to urban agriculture initiatives as a LED strategy;

(ii) The role of NMBM to ensure sustainability of the urban agriculture projects.

The theoretical base that underpins this research hinges on four theoretical approaches: the basic needs approach, the people-centred development approach, the participation approach and the sustainable development approach. The research method that was chosen for this study is qualitative method included the following data collection instruments a literature review, a documentary analysis, a survey using questionnaires and interviews with project participants and municipal officials responsible for urban agriculture in the NMBM. The literature review formed the conceptual basis against which the information gained from documentary analysis, interviews and questionnaires were analysed.

The projects that participated in the study were formed, amongst others, to alleviate poverty, thereby serving one of the basic needs which is food. Food is one of the basic needs in terms of Maslow's Hierarchy of Needs. The data collected in this study revealed that the three projects helped the project participants a great deal in meeting their basic needs, especially the food need. Therefore, there is a direct connection between the Basic Needs theory and the rationale behind the formation of these projects.

In conclusion, the researcher has been able to draw a link between the theoretical underpinnings of the study and the practice as represented by experiences of the group sample. The researcher has also been able to demonstrate how the aims and the objectives of the study have been met.

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ACRONYMS / ABBREVIATIONS

ABCD:	Asset-Based Community Development
ECSECC:	Eastern Cape Socio-Economic Consultative Council
FAO:	Food and Agriculture Organization
IDP:	Integrated Development Planning
IPC:	International Potato Centre
LED:	Local Economic Development
MDGs:	Millennium Development Goals
NMB:	Nelson Mandela Bay
NMBM:	Nelson Mandela Bay Municipality
TATI:	Tinarha Agriculture Tourism Initiative
UDDI:	Uitenhage Despatch Development Initiative
UN:	United Nations

CHAPTER 1

INTRODUCTION AND CONTEXT

1.1 Background to the study

Around the globe, towns and cities are growing rapidly in developing countries due to migration. The rate of urban growth outweighs job creation and the ability of most governments to provide basic services and infrastructure. Mougeot (2006: 2) states that the past half-century has seen a massive movement of population in most developing countries. Until the latter half of the 20th century, the developing world was predominantly rural. At the midpoint of the 1900s, fewer than 20% of people in developing countries lived in cities and towns. By the turn of the millennium, that percentage had more than doubled. The process of migration often precipitates into high levels of poverty and hunger, leading many urban dwellers to engage in farming activities to help themselves in satisfying their food needs.

The character of African poverty is changing from what was once considered a mainly rural phenomenon to one that includes millions of unemployed that lives at the fringes of the formal urban economy. According to the United Nations Human Settlements Programme (2009: 26), in many countries in sub-Saharan Africa, rapid urbanization is taking place within the context of economic stagnation or low economic growth, poor agricultural performance, rising unemployment, financially-weak municipal authorities incapable of providing basic services, poor governance and the absence of a coherent urban-planning policy.

Urban Harvest (2007: 33) states that unlike agriculture in the rural areas, crop production or livestock raising in and around cities is enmeshed in a complex web of policies, regulations and competing stakeholder interests, which can resist, constrain and sometimes outlaw the practice. This adds further insecurity to households already often suffering food and income insecurity. Municipal recognition and support for safe urban and peri-urban agriculture is an essential pre-condition for its contribution to urban development. Mougeot (2006: 13) states that in September 2000, the United Nations Millennium Declaration set out eight Millennium

Development Goals. These were designed to provide the international community with an expanded vision of development and a framework for measuring development progress. First amongst those goals is: eradication of extreme poverty and hunger. He further states that urban agriculture contributes directly to this goal.

Urban agriculture can be used both to reduce poverty and also to help to grow the local economy. The Food and Agriculture Organization (FAO) of the United Nations (1996: 5) defines urban agriculture as being food production that occurs within the confines of the cities. Such production takes place in backyards, or roof tops, in community vegetable and fruit gardens and on unused public space. This research focuses on urban agriculture projects that are taking place at the townships. These projects include representatives of often marginalised subgroups, women and the poor.

Pearson, Pilgrim and Obe (2010: 22) state that in developing countries urban agriculture is generally practised for food-producing activities that generate self-employment, direct revenues or savings, thus contributing to greater social stability. According to FAO (1996: 48), urban agriculture provides economic, recreational and ecological benefits to the city. FAO (1996: 49) further states that there are less visible benefits of urban farming, such as shorter distances from producer to consumer, meaning that there is less need for marketing, transport and packaging than there is for products grown at a distance; thus providing a cost advantage over rural agriculture. Finally, there are extremely important, but often ignored, ecosystem benefits to hydrologic systems, biological diversity and air quality that can replace some of what the urban systems destroy.

Land is a very expensive commodity in South Africa and most land owners that own land suitable land for urban agriculture located within the city precinct prefer to sell their land to an open market system. Such land is sold at an exorbitant price sometimes to property developers who buy the land for the purpose of developing business complexes, townhouses and residential houses. The municipalities are unable to compete with the development agencies due to their limited budgets and this is hindering urban agriculture from being widespread in South Africa. Hebinck and Shackleton (2011: 289) state that limited access to land and water and lack of

sure tenure over land being used for farming are invariably identified as important constraints on growth of agriculture in South African townships.

The discussion in this research focuses on the Nelson Mandela Bay Municipality (NMBM) poverty alleviation projects in the form of urban agriculture as a key driver of Local Economic Development (LED). The discussion also focuses on different factors that are required for urban agriculture projects to be effective and sustainable in the NMBM.

1.2 Rationale for the study

Pillay, Tomlinson and Du Toit (2006: 42) state that government departments have not yet taken on board some key international thinking about rural-urban linkages, the important role of agriculture in promoting urban economic development, the advantages of small towns and dispersed urbanisation and agricultural potential of cities and peri-urban areas, particularly in the promotion of sustainable livelihoods for the poor. Hebinck and Shackleton (2011: 285) state that urban agriculture is mainly viewed as an activity of the poor people, particular of poor African people living in townships and informal settlements. Development of urban agriculture in South Africa lags behind other countries, including several African countries. This is partly explained by historical policies which outlawed some or all farming activities within city limits, particularly livestock rearing. They further state that in 2010, South Africa still had no comprehensive policy framework for urban agriculture, and farming in the cities continued to be governed by the specific municipal bylaws that applied in the past.

Since there is very little information available on the topic, this study further contributes to the body of knowledge on urban agriculture projects in the NMBM. This study is important as it elaborates on the importance of urban agriculture in LED at a municipal level and how urban agriculture can be used to contribute to the economic growth of the NMBM. The study also focuses on factors required for the urban agriculture projects to be sustainable.

1.3 The main research question

What are the factors required for urban agriculture projects to be sustainable in the NMBM?

In order to solve the main research problem, the following tabulated research sub-foci areas are identified to be addressed:

- What are the benefits for local community participating in urban agriculture in the NMBM?
- What is the role of urban agriculture projects in creating employment in the NMBM?
- What is the approach of the NMBM to urban agriculture initiatives as a LED strategy?
- How are urban agriculture projects supported by the NMBM to ensure sustainability?
- What are the views of the project participants and the NMBM officials pertaining to urban agriculture?

This study provided answers to the above mentioned research sub-foci and led to a better understanding of the importance of urban agriculture projects to the economy and their role in the LED. The better understanding of these research sub-foci served as a platform needed to ascertain the underpinning factors required for urban agriculture projects to be sustainable.

1.4 Research aims and objectives

The aims and objectives of this research are tabulated below:

- To establish the benefits for local community participating in urban agriculture in the NMBM
- To ascertain the role of urban agriculture projects in creating employment in the NMBM
- To establish the NMBM approach to urban agriculture initiatives as a LED strategy

- To ascertain the NMBM strategies of ensuring that urban agriculture projects are sustainable.
- To establish the views of the project participants and the NMBM officials pertaining to urban agriculture.

1.5 The scope and the scale of the research

The research problem area is that of urban agriculture projects as a LED mechanism to alleviate poverty in the NMBM area.

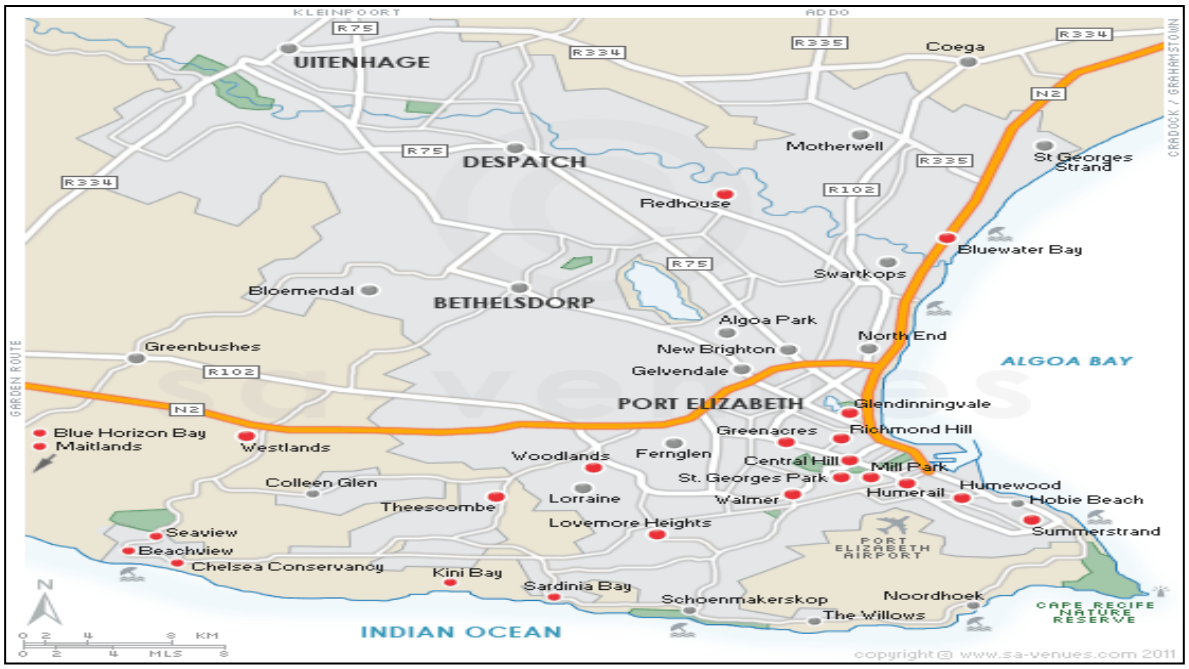

Figure 1.1: Nelson Mandela Bay Municipality map (Source: www.sa-venues.com/maps/)

The Nelson Mandela Bay Metropolitan Municipality was formed by a merger of the local authorities of Port Elizabeth, Uitenhage and Despatch with other several smaller adjacent local authorities. The merger took place in 2000 and gave rise to one metropolitan municipality. According to the Eastern Cape Socio-Economic Consultative Council (ECSECC) (2007: 6), Nelson Mandela Bay (NMB) is home to about 1.3 million people, and the Bay is the economic hub of the Eastern Cape Province, accounting for over 40% of Provincial Value Added. It further states that despite the Metro's status as an economic hub, levels of poverty and unemployment remain high, although lower than the Provincial average. HIV prevalence is also relatively high (2007: 7).

The context of the research area is the NMBM townships where urban agriculture projects are taking place. There are three urban agriculture projects that were selected for this study and these are located in three different townships within the NMBM. Two of these projects are located in the Port Elizabeth area, which are the Emmanuel Haven Hydroponics Project, which is located in Motherwell Township, and the Walmer Hydroponics Co-operative that is in Walmer Township. The third project is located in the Uitenhage area near Kwa Nobuhle Township and that is the Tinarha Agriculture Tourism Initiative (TATI).

The respondents of this research are the hydroponics project participants and the NMBM officials. The research also focuses on the urban agriculture value proposition and value chain. According to NMBM Economic Development Strategy (2009:12) the population of NMB is characterized by:

- low levels of education
- low levels of employment
- low levels of income
- high levels of involvement in formal and subsistence economic activity
- deepening poverty
- and high levels of income inequality.

1.5.1 The Emmanuel Haven Hydroponics Project

According to the Impumelelo Innovation Centre, the Emmanuel Haven Hydroponics Project was established in 2004. A comprehensive public-private-community partnership was formed, focusing on specific “clusters” of activity, with two clusters being dominant: the HIV/AIDS, and the horticulture clusters. The first step was the construction of two greenhouses, or hydroponics tunnels that focused on growing mainly tomatoes and cucumbers. These were completed in 2005, and by the end of the first year, had produced 266 tons of cucumbers, and generated a profit of R450 000. The following year, the profit increased to R790 000.

The EC Agriculture Department provided R800 000; the NMBM gave R1.6 million towards the establishment of the hydroponics project. The Coca-Cola Foundation

donated R750 000 to the renovation of the building; the Boardwalk sponsored R516 000; Canon EC gave R250 000; the Bosasa Group donated R50 000. The Emmanuel Farms needs R140 000 a month to run its operations and it is currently making R140 000 a month. The Wellness Centre needs R50 000 a month to run and once the project is running at full capacity it will be self-sustainable. The horticultural cluster has generated permanent employment for 30 people; 30 casual workers are employed during picking time and when the 250 greenhouse tunnels are established, 250 families stand to benefit (www.impumelelo.org.za).

1.5.2 The TATI Hydroponics Project

According to the Uitenhage Despatch Development Initiative (UDDI) the TATI in Kwa Nobuhle, Uitenhage, is a commercial agricultural project. An organic farming operation will be created, with a section of the crop envisaged for the export market. This project will create 100 jobs during the inception period, escalating to between 300 and 400, provided a value-added, high-tech pack-house is built. The total project cost is estimated to be around R15 million (www.uddi.co.za).

1.5.3 The Walmer Hydroponics Project

According to Thina Sinako, the overall objective of this action is to attack the joblessness engulfing the Walmer Township and ultimately the Nelson Mandela Bay Metro. This emerges from its project purpose of consolidating the current Walmer Hydroponics project into an urban agricultural incubator that enables locals in the township and the greater municipal area to competently exploit the local agricultural market. The following results will be achieved:

(i) a pack shed and cool room
(ii) a retail shop for the sale of produce from site
(iii) one mini truck delivering produce to main clients
(iv) 50 fully-trained unemployed locals
(v) and fertilizers and chemical inputs over 12 months to enhance yield and manage spoilage (www.thinasinako.co.za).

1.6 Literature review

This section deals with the theoretical grounding of the study. It also deals with the international perspective, and the national and local policy framework and approach, to give a context of the study in relation to international, national and local policy discourse and agenda.

1.6.1 Theoretical grounding for this research

The theoretical base that underpins this research hinges on four theoretical approaches: the basic needs approach, the people-centred development approach, the participation approach and the sustainable development approach. These theories are elaborated in Chapter Two.

1.6.2 International perspective

In 2000 world leaders agreed on the Millennium Declaration at the United Nations (UN) Millennium Summit. The declaration contained expressed commitments around accelerating democratization and securing peace, scaling up development and poverty reduction, ensuring environmental sustainability, and promoting global partnerships. This development agenda was further elaborated in 2001 in the form of the Millennium Development Goals (MDGs). The MDGs are measurable targets with timelines for curtailing problems like poverty, hunger, environmental degradation, discrimination against women and diseases. Cole, Lee-Smith and Nasinyama (2008: 59) state that from a global perspective, the rising price of basic foodstuff, ensuring protest about food access and price, and the general global concern about future food security, reinforce the importance of local government policies and practices surrounding food and agriculture. Layered on top of these very urgent and real global food challenges are international laws that formally and directly oblige both national and local governments to improve access to food and eliminate hunger. Together, these global factors suggest that there is an urgent need for governments to reconcile the relationship between urban agriculture and health.

Satterthwaite (2003: 10) states that most MDGs are compatible with poverty reduction because they demand better performance outcomes that are important to the poor. He further states that the MDGs also include other goals that have particular importance for poverty reduction, including:

- Promoting gender equality and empowering women
- and ensuring more work opportunities for youth (2003: 11).

According to The World Bank (2005: 3), four of the MDGs relate directly to the agricultural sector: having the proportion of the people living in extreme poverty and hunger, promoting gender equality and empowering women, ensuring environmental sustainability, and developing global partnerships through increased market access. For instance, access to better-quality food will improve health and reduce disease susceptibility, especially in women and children's education.

1.6.3 National and local policy framework and approach

The national government designs and develops a policy framework and also provides research funds for initiates relating to international benchmarking exercises. Municipalities design and develop their LED strategies. The LED strategies become part of the Integrated Development Planning (IDP) process. The IDP concept was introduced in the South African municipal in 1996 as a form of strategic planning for local governments. IDP is a central mechanism that guides all planning and decision-making in a municipality. According to Craythorne (1997: 149), the concept of IDP was first introduced into municipal law by the Local Government Transition Act (Second Amendment Act, Act 97 of 1996). The Act required metropolitan councils to have an IDP and permitted district councils to formulate and implement an IDP for a local council. The LED strategies are based on the overall vision outlined in the IDP Plan and should take into account the result of the analysis done to identify problems and prioritise development projects. LED encourages the public, private and civil society sectors to establish partnerships and collaboratively find local solutions to common economic challenges.

Urban agriculture reduces urban poverty and food insecurity and also enhances urban environmental management. Viljoen, Bohn and Howe (2005: 35) state that in the developing world in particular, urban agriculture can greatly contribute to urban food security, improved nutrition, poverty alleviation and local economic development. Urban agriculture can be used as a key driver in LED and can contribute immensely in greening of our environment. Shackleton, Pasquini and Axel (2009: 25) state that there is change on the African continent as well, and well-known examples here include Benin, Botswana and Zambia, where the development of thematic programmes and strategies, such as the national food security policies, poverty reduction strategies and sustainable city development policies, include elements that support, or at least are sympathetic with, urban agriculture. There is more proactive planning in Kampala, Dares Salaam, Bulawayo (Zimbabwe) and Port Elizabeth (South Africa), where local governments are formulating urban agriculture policies.

Given the above literature review, it is clear that local municipalities in South Africa need to properly use urban agriculture as a key driver to achieve the LED objectives, which are employment creation and poverty alleviation. The research sub-foci to be investigated will provide a platform where urban agriculture can be properly utilized for LED objectives.

1.7 Research methodology and research design

When considering the approach that may be used in a research project, the researcher has three options:

- a quantitative methodology;
- a qualitative methodology;
- and a mixed method approach.

The choice centres on the nature of the research topic, the setting, the possible limitations and the underlying theoretical paradigm that informs the research project. This study follows the qualitative research method. Daymon and Halloway (2002: 107) state that qualitative researchers usually initially take an inductive approach to their data, meaning that they do not wish to test a hypothesis - that is, they do not

work from a rigid framework or predetermined theory but start out with an open mind. This means they have flexibility throughout.

Qualitative research has its roots in social science and is more concerned with understanding why people behave as they do: their knowledge, attitudes, beliefs and fears, amongst other things. Qualitative research allows the subjects being studied to give much richer answers to questions put to them by the researcher, and may give valuable insights which might have been missed by any other method. Not only does it provide valuable information to certain research questions in its own right but there is a strong case for using it to complement quantitative research methods (Mays and Pope, 1995: 109). This methodology was selected because of its objective being to describe, analyse and understand the strategy, rather than merely to describe it. Given the choice of the qualitative research method for the research design, the research objective and purpose is evaluative in nature.

The formulation of the research questions' subfoci was done in order to easily collect information and analyse it in a meaningful manner. Data was collected from project participants by conducting focus-group interviews and by making use of questionnaires. Semi-structured interviews were conducted with municipality officials in order to understand the situation better. Furthermore, documents on municipality's published reports and handbooks were be scrutinized. The researcher expands in detail on the research methodology and research design in Chapter Three.

CHAPTER 2

LITERATURE REVIEW

2.1 Theoretical grounding for this research

The theoretical framework is outlined in this chapter. The concepts of Asset-Based Community Development strategies and permaculture principles are unpacked under the sustainable development approach. The International perspective is also dealt with in this chapter to demonstrate how the international agenda in the form of the MDGs links with the national and local policy framework and approach, and also with urban agriculture initiatives aimed at poverty alleviation and creating employment.

2.1.1 Basic needs approach

The basic needs approach to development became prevalent in the later 1970s and its aim was the alleviation of poverty through services such as education, health and social welfare programmes. According to the United Nations Commission on Science and Technology (1997: 60), a basic needs approach can be defined as a type of development that attaches a special weight to the satisfaction of the fundamental material and non-material requirements of a particular society, to enable it in the shortest time to empower all of its citizens to participate in its chosen objective. Because the basic needs of the poorest people are less likely to be fulfilled in the normal cause of development, the poor are, accordingly, identified as a priority target group. Gillespie, Jeannet and Hennessey (2011: 141) state that Abraham Maslow's Hierarchy of needs divided human needs into four levels and proposes that humans will satisfy lower-level needs before seeking to satisfy higher-level needs. The lowest level of needs is physiological needs. These include the need for safety, food, and shelter. The urban agriculture projects are aimed at alleviating poverty and thereby serving one of the basic needs, which is food.

2.1.2 People-centred development approach

Martinussen (1997: 41) states that people-centred development has four approaches, namely, capacity building, a decentralisation approach, social development and a community development approach, which have a common goal to empower people. Capacity building is whereby a society exhibits development primarily in the form of better abilities and greater capacity to make decisions and implement them effectively. In fact, the notion of people's participation is primarily a means of development. People-centred development stresses the participation of the majority of the population, especially those who were previously excluded, for example women, the youth and the illiterate in the process of development, which can be achieved by decentralising the decision-making process. LED is seen as one of the most important ways of alleviating poverty and it is people-centred in character. Viljoen *et al* (2005: 220) state that food-growing projects have a huge power to bring people together and engender a lost sense of community. They act as a source for learning, an opportunity for minority and special needs groups, and can contribute to local economic development. They further state that urban agriculture initiatives take many forms and most are typified by their fine-grained and people-centred character.

2.1.3 Participatory approach

The participatory approach seems to suggest that the local people, irrespective of how poor they are, usually have appropriate information about the hardware and software; therefore, it is not up to outsiders to prescribe to local people what the local priorities are in terms of development (Swanepoel and de Beer, 1997: 67). The participatory approach locates the power to the people to take decisions pertaining to the development goals, methods to achieve them, in the hands of the intended beneficiaries. According to the United Nations Habitat (2005: 2), LED is a participatory process where local people from all sectors work together to stimulate local commercial activity, resulting in a resilient and sustainable economy. It is a tool to help create decent jobs and improve the quality of life for everyone, including the poor and marginalised.

2.1.4 Sustainable development approach

Goldin and Winters (1995: 01) define sustainable development as the kind of economic development which meets the needs of the present generation but not at the expense of the future generation, and the main concern of sustainable development is care for the natural environment and reversing the current destructive patterns in society that threaten all forms of life on planet earth. Venter (2010: 112) states that urban agriculture offers an immense opportunity to increase the welfare of all citizens, and help to repair the ecological damage. It has a potential to make a significant contribution to the solution of many current urban problems, and can lead to healthy communities and sustainable development.

2.1.4.1 Asset- Based Community Development strategies

Asset-Based Community Development (ABCD) is a strategy for sustainable community-driven development that places an emphasis on the resource that people have at their disposal as opposed to what they need, as a bases for development. Phillips and Pittman (2009: 267) state that the asset-based approach is to plan and initiate an increasingly ambitious program, one that builds upon the significant knowledge, skills, resources, and community that every established community possess, regardless of its economic status. It should identify and cultivate local residents' organizing, research, planning, and development knowledge and skills, to enhance the organizational capacity of a local community-based development system. According to UN-Habitat (2008: 9), asset-based approaches also foster a sense of place based on the unique features of the locality. The important first step in capacity-building is to recognize a community's talents and capacities, whereas need-based training does not require intimate familiarity with local physical, social and political resources.

According to Lerner, Jacobs and Wertlieb (2003: 478), the ABCD approach suggests the mapping of local assets, using an inventory process to identify local resources at the individual and associational levels. An individual capacity inventory or associational inventories effectively serve as the launch pad for activities dedicated to whole community development through the use of such mapping tools, the

community gains awareness of and access to the rich array of local assets available for mobilization towards an increased community well-being.

2.1.4.2 Permaculture principles

Whitefield (2005: 4) states that permaculture is a process of looking at the whole, seeing what the connections are between the different parts, and assessing how these connections can be changed so that the place can work more harmoniously. This may include introducing some new elements or methods especially on an undeveloped site. But these changes are incidental to the process of looking at the landscape as the whole. Although permaculture started out as permanent agriculture, the principles on which it is based can be applied to anything we do, and now that it is thought of as permanent culture it has grown to include: building, town planning, water supply and purification, and even a commercial and financial system. It has been described as 'designing sustainable human habitats'.

In a nutshell, permaculture is about environmentally-sound ways of producing food. Mars (2005: 2) states that permaculture is the harmonious integration of design with ecology. She further states that the outcomes of good design should include:

- sustainable land use strategies, without waste and pollution
- established systems for healthy food production, and maybe some surplus
- restoration of degraded landscapes, resulting in conservation of endemic species especially rare and endangered species
- integration and harmony of all living things on the property - all things on the property – all things live in an atmosphere of co-operation or interact in natural cycles
- and minimal consumption of energy.

2.2 International perspective

According to Herbel (2010: 51), the MDGs can be viewed as social contract. They make poverty visible and make the task of poverty alleviation urgent and central for international development and global partnership. However, the achievement of the

MDGs now faces significant obstacles. The 2008 MDG report, recently released by the United Nations, makes note of the swelling ranks of the world's poor. A perfect storm of rising food prices, climate change and environmental vulnerability, and the financial crisis with cutbacks in aid, now stand to threaten the gains made in poverty alleviation in the early years of the 21st century. The MDGs are now at the heart of the global development agenda. For each goal, one or more targets have been set, mostly for 2015, using 1990 as a benchmark. Indicators have been identified to measure progress against each target. Each goal, with its respective targets and indicators, needs to be adjusted according to the specific country's context. Urban agriculture is seen as an important component of urban development and environmental management. It can be a viable source of income, jobs and food for the poor. According to Anderson and Taylor (2010: 225) the United Nations measures world poverty in two ways. Absolute poverty is the situation in which people live on less than $1 per day. Extreme poverty is defined as the situation in which people live on less than $275 a year, that is, on less than 75 cent a day.

The MDG goals are:

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development.

Koc, MacRae, Mougeot and Welsh (1999: 228) state that promoting urban agriculture is an important means of ensuring sustainability of regional community food security and human settlements. They further state that when approached as a vehicle for community development, urban agriculture can bring multiple benefits: economic benefits, by providing opportunities to earn income; educational benefits, by teaching technical and job skills; environmental benefits, such as land reclamation and, finally, empowerment, by enabling communities to take control of family food

security. It is a crossroads of these goals, meaning that urban agriculture projects can thrive and influence the character of human settlements.

2.3 National and local policy framework and approach

The Draft National Poverty Strategy (2010: 18) has two strategic objectives, which are the eradication of poverty and the reduction of inequality in society. According to this strategy, there are four guiding principles underpinning the approach being proposed in this Anti-Poverty Model, namely:

(i) Sufficiency, implying that the South African society has, as its priority, that everyone should reach at least a minimum threshold (e.g. a minimum standard of living) sometimes also closely related to human rights;

(ii) Priority, implying that the needs of the most vulnerable should take priority;

(iii) Equality of process, implying the quality of relations between people, the interactions between them, and the interactions between people and institutions;

(iv) Equality of opportunity, implying resources, talents, institutions, and effort.

According to Policy Coordination and Advisory Services (2005: 03), the Provincial and Local Government departments have an important role to play in contextualizing national imperatives and grounding them within the realities and specificities of each province, and guiding local government in the development and implementation of IDPs and programmes for sustainable development. The concept of an IDP was first introduced in 1996 as a form of strategic planning for local government throughout South Africa. The level of sustainable local economic development in the NMBM is determined by policy formulators and experts in the Local Economic Development's Business Unit. The Business Unit for LED is made up of municipal officials who are responsible for the provision of administrative services required for the promotion of the general welfare of citizens of the municipality through the development of a local economy that can provide jobs, as well as combat poverty and unemployment.

The Department of Economic Development and Environmental Affairs (2010: 04) states that the National Framework for Local Economic Development makes it clear

that local government “does not create jobs”. It goes on to point out that “local economic development is about creating a platform and an environment to engage stakeholders in implementing strategies and programmes.” Selai (2008: 20) states that an overarching imperative is the need for local government, such as that of the Nelson Mandela Metropolitan Area, to continuously support and facilitate the creation of an enabling social and economic environment in which small businesses can thrive and succeed. It is with this in mind that the proposed integrated SMME Support Strategy in the Nelson Mandela Metropolitan Area seeks to achieve – an entrepreneurial environment, through which social and economic burdens of the metropolitan region can be redressed.

According to ECSECC (2007: 22), Urban Agriculture receives support from the Municipality’s Economic Development, Tourism and Agriculture Business Unit. The Metro is well suited to this type of economic activity: there is a huge demand for market gardens and nurseries, transport costs for fresh produce are low, and water and land are available. Urban Agriculture projects also can improve the food security of poor people.

CHAPTER 3

DATA COLLECTION AND INTERPRETATION

3.1 Introduction

This chapter seeks to explain how information for the purposes of this research was obtained, what data collection methods were used, and why those particular methods were used. This chapter also provides a detail of the research design which has been utilised in the study. It provides a clear account of the research methods that were used during the research project. In this study, structured questionnaires and informal interviews were used to collect information on the existing and planned activities relating to urban agriculture in the NMBM. Relevant municipal documents were used to identify critical factors that contribute to the sustainability of the urban agriculture projects in the NMBM. In a nutshell, in this chapter the researcher discusses the methods that were used to collect data.

Face-to-face interviews were used to record more than the verbal responses of the interviewee, which are often superficial. This is because when people communicate directly with each other much more information is communicated between them. The communication is not only confined to the verbal expression, but the researcher can read the nature of words used, the facial expressions and the body language, all of which communicate what the other party means.

Due consideration was given to the timing of the interviews by looking at the daily schedule, seasonal activities, and work habits of respondents - both the project participants and the NMBM officials. The respondents were told the purpose of the study and how the data was to be used. A standard approach was used for each interview. The research questions were derived from the research sub foci areas and after the data collection process, the data was analysed in a meaningful manner. Data was collected from residents by conducting focus-group interviews and by making use of questionnaires. Semi-structured interviews were conducted with municipality officials and in order to understand the situation better.

3.2 Research Design

The research design defines the procedure and the methods for collecting information needed during the research. It is the overall framework or plan that outlines what information to collect from which sources and by which procedures. The research design is aimed at tackling the questions and objectives of the study. The construction of an appropriate research plan, however, is dependent on a number of factors, such as the purpose of the research, the nature of the information, data sources and methods of data collection. The research design that was developed and used by the researcher is provided as an annexure (Annexure A) at the end of this study.

Maxwell (2005: 3) states that design in qualitative research is an ongoing process that involves “tracking” back and forth between the different components of the design, assessing the implications of goals, theories, research questions, methods and validity threats for one another. It does not begin from a predetermined starting point or proceed through a fixed sequence of steps, but involves interconnection and interaction among the different design components. The research design process is underpinned by three elements, which are planning, structure and strategy. Planning entails spelling out the research focus area; the structure focuses more on the specific aspects of the research and the strategy deals with the methods to be used for the collection and data analysis. It is the specification of methods and procedures for acquiring the information needed for solving the research problem.

3.3 Qualitative Research Method

Denscombe (1998: 207) states that qualitative research is an umbrella term covering a wide variety of styles to conduct social research which originates from a wide range of disciplines, such as sociology, social anthropology and social psychology. According to Leedy and Ormond (2005:94), generally the quantitative method is suitable for answering questions about relationships on measured variables with the aim of explaining, predicting and controlling phenomena. Qualitative research is aimed at establishing the ‘why’, ‘what’ and ‘how’ of the research problem through the analysis of unstructured information. Hesse-Biber and Leavy (2011: 3) state that the

qualitative research approach to research is a unique grounding, the position from which to conduct a research that fosters particular ways of thinking through the problem. They further state that the questions asked in this kind of research usually begin with words like how, why, or what. Welman and Kruger (2001: 8) state that in qualitative research the researcher studies the social phenomenon. While conducting the research the researcher becomes the primary research instrument and takes control over the functions of the control group in order to rule out counter explanations, observe whatever it is that is being observed and keep explanations under control.

3.4 Data Collection

Nel (1999:51) states that the evaluation of LED programmes, particularly those which focus on the achievement of social objectives, requires specific research methods which permit the objective assessment of both social and economic achievements. The increasing recognition of the importance of understanding social achievements, such as empowerment, unified communities and improved quality of living, leads one to conclude that previous standardised evaluation measures that focus solely on quantitative, economic scores are of limited relevance. Particularly when seeking to understand complex relationships involving poor communities, it is essential that the researcher adopts appropriate assessment methods that are relevant to LED initiatives and what sectors of the economy are used to achieve LED objectives.

The research method that was chosen for this study is qualitative method included the following data collection instruments a literature review, a documentary analysis, a survey using questionnaires and interviews with project participants and municipal officials responsible for urban agriculture in the NMBM. The literature review formed the conceptual basis against which the information gained from documentary analysis, interviews and questionnaires were analysed.

3.4.1 Questionnaires

The questionnaires were hand-delivered to the respondents. This was done to ensure deliverability and receipt. This was also done to build trust through face-to-face contact. The researcher explained the purpose of the questionnaire, how and when the questionnaire should be returned and confidentiality around the responses. The questionnaires were formulated out of straightforward questions to avoid ambiguity. George (2004:104) states that mailing of questionnaires holds many benefits when compared with other data collection methods because they are a relatively low cost, they eliminate interviewers and field supervisors, have a central control, and promise anonymity for respondents. Some researchers believe that mail questionnaires give the respondent more time to reply objectively; yet one of the disadvantages is the low response rate.

Gillham (2000: 6) states that a research questionnaire has the following advantages:

- Lost cost in time and money
- Easy to get information from a lot of people very quickly
- Respondents can complete the questionnaire when it suits them
- Analysis of answers to closed questions is straightforward
- Less pressure for an immediate response
- Respondent's anonymity
- Lack of interviewer bias
- Standardization of questions (but true of structured interviews)

According to Babbie (2008: 283), despite attempts to provide mutually exclusive answers in closed-ended questions, often more than one will apply for respondents.

3.4.2 Relevant Documents

In order to have a full grasp of the number of decisions and actions taken, the researcher perused of the legal framework and reviewed the NMBM LED and poverty alleviation related policies, manuals and records. Minutes that gave a guide to some of the actions taken were also scrutinized.

3.5 Research Setting

The purpose of this study is to investigate urban agriculture projects as a LED mechanism to alleviate poverty in the NMBM. This research ascertains factors required for urban agriculture projects to be sustainable in the NMBM.

The targeted population for this study was 18 people, inclusive of all interviews. This comprised of 3 NMBM officials working in the Agriculture department and 15 project participants.

(i) For the municipal officials, the main focus on the interviews was centred on the strategy and the role that urban agriculture plays in the LED strategy. In this case, interviews were held with the Urban Agriculture Director and the Urban Agriculture Technician. The Assistant Director for Economic Development and Recreational Services was not interviewed but was requested to complete the questionnaire.

(ii) For project participants, the main focus of the interviews revolved around the following areas:

- impact of the projects in their livelihood;
- the role of the projects in creating employment;
- the views of the project participants regarding the sustainability of the projects.

3.6 Sampling

Sampling is the process of selecting units from a population of interest so that by studying the sample we may fairly generalise our results back to the population from which they were chosen. Rangaswamy and Arankancami (1995: 214) state that a portion of a population is a sample. The process of selecting a sample is known as sampling. They further state that the basic probability sampling method is the simple random sampling. It is used when the population is homogenous. A random sample of 3 urban agriculture projects was drawn from the NMBM. This procedure was conducted irrespective of the age distribution, level of education, socio-economic status, gender or creed. The data collection and the findings were compared with a

theoretical proposition from the literature review in order to arrive at a realistic conclusion.

3.7 Conclusion

The questionnaires and interviews were justifiably chosen to serve as data collection instruments in this study. The researcher used qualitative research methodology because it is a methodology that supports community-based research, as well as accurately presenting the life experiences of local communities.

This chapter has outlined and provided theoretical support for the research methods that were utilised in this study. The methods chosen were deemed most applicable for acquiring the information needed to effectively analyse and evaluate the role that urban agriculture can play as an effective poverty alleviation strategy in the NMBM. The following chapter discusses the findings of the research before progressing to Chapter Five, which focuses on the conclusion and recommendations of this study.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

Data gathered from both interviews and by questionnaires is analysed in this chapter. Firstly, the data sources are identified. Then, an analysis and evaluation of data gathered by questionnaire is carried out. Finally, brief comparisons are made between the three urban hydroponics projects selected for the study.

The three projects that participated in this study are the Municipality the Emmanuel Haven Hydroponics Project, the Walmer Hydroponics Co-operative and the TATI. Five project participants from each project responded to a structured questionnaire. Two municipal officials, the Agricultural Technician and the Urban Agriculture Director were interviewed and responded to a separate structured questionnaire. The third official, Assistant Director for Economic Development and Recreational Services was not interviewed but completed a questionnaire.

The aim of the interviews was to determine the following from the project participants:

(i) The impact of the projects in their livelihood;
(ii) The role of the projects in creating employment;
(iii) The views of the project participants regarding the sustainability of the projects.

The aim of the interviews was to determine the following from the municipal managers:

(i) The approach of the NMBM to urban agriculture initiatives as a LED strategy;
(ii) The role of NMBM to ensure sustainability of the urban agriculture projects.

The interpretation of the research findings is divided into three sections, namely sections A, B and C. The project participants' questionnaire, section A, deals with the analysis of the biographical information; section B provides analysis of the respondents' economic information and section C provides analysis of the

respondents' perceptions around the sustainability and also the impact of the projects to the respondents' livelihood. The NMBM official questionnaire section A contains biographical information; B and C deal with NMBM's approach to urban agriculture and NMBM's support to urban agriculture respectively.

4.2 PROJECT PARTICIPANTS' DATA ANALYSIS AND INTERPRETATION SECTION

4.2.1 SECTION A: Project Participants' Biographical Information

4.2.1.1 Gender

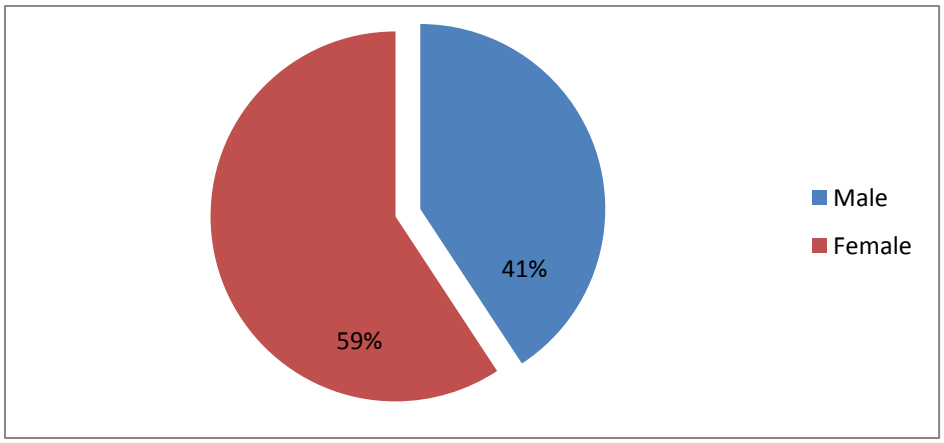

Figure 4.1: Gender

The data reveals that the majority of the participants were women. In this study, fifty-nine percent (59%) of the respondents were female and forty-one percent (41%) were male. This indicates that these projects were attracting more women than men. This is in line with one of the MDGs, which is promoting gender equality and empowerment of women.

According to the World Bank (2011: 4), the Millennium Development Goal Summit concluded with the adoption of a global action plan to achieve the eight goals by 2015. The summit also adopted a resolution calling for action to ensure gender parity in education and health, economic opportunities, and decision-making through gender mainstreaming in development policy-making. The resolution and the action plan reflect the belief of the international development community that gender equality and women's empowerment are development objectives in their own right

(MDG 3 and 5), as well as serving as critical channels for achieving the other MDGs and reducing income and non-income poverty.

4.2.1.2 Language

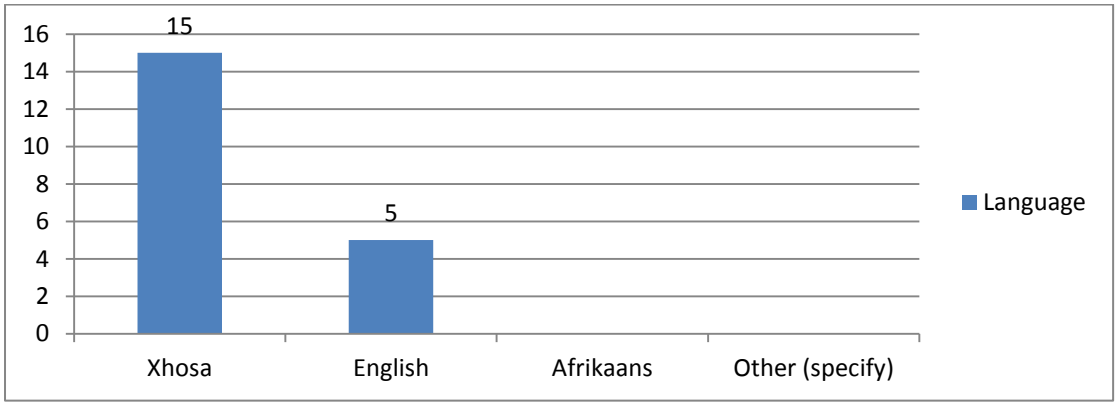

Figure 4.2: Language

The data shows that all the respondents were proficient in the Xhosa language, which is their mother tongue. Only 25% of the respondents were proficient in English and 75% indicated that they could not communicate in English. Since English is the business language, 75% of the respondents had difficulty in entering the formal economy. This shows that these projects attract people that have limited chances in entering the formal economy. All respondents indicated that they were not proficient in Afrikaans and other languages. The researcher then inferred that since these projects are located in townships, these help to provide employment to people that have difficulty in finding jobs in the formal economy.

4.2.1.3 Age Distribution

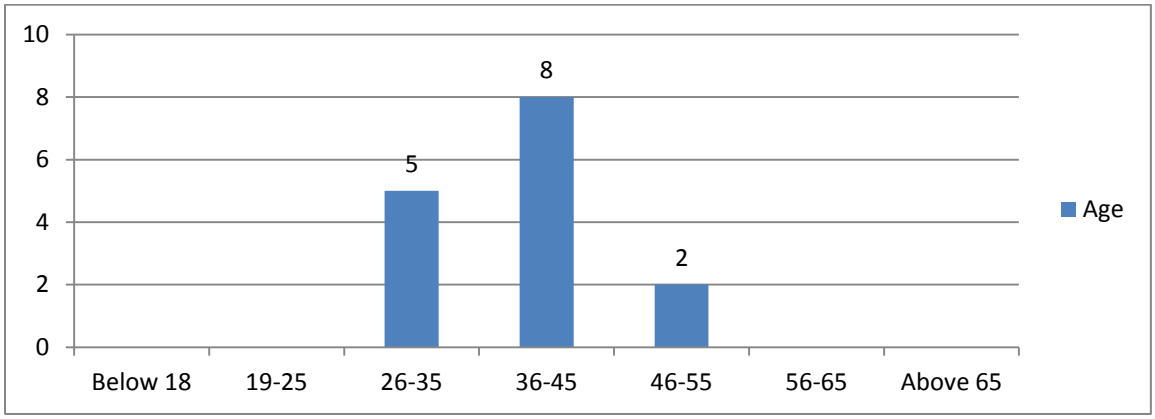

Figure 4.3: Age

The above graph illustrates that the majority of respondents were between the ages of thirty-six and forty-five (53%), followed by the ages between twenty-six and thirty-five (34%). The ages between forty-six and fifty-five were the least represented ages and constituted 13% of the participants. This can be attributed to the energy levels required for people to work in hydroponics projects. People that are working in these schemes are required to be physically fit to withstand the physical work involved while standing for long hours.

None of the projects participating in the study employed people whose age is below the legal age requirement, which is 18 years.

4.2.1.4 Marital Status

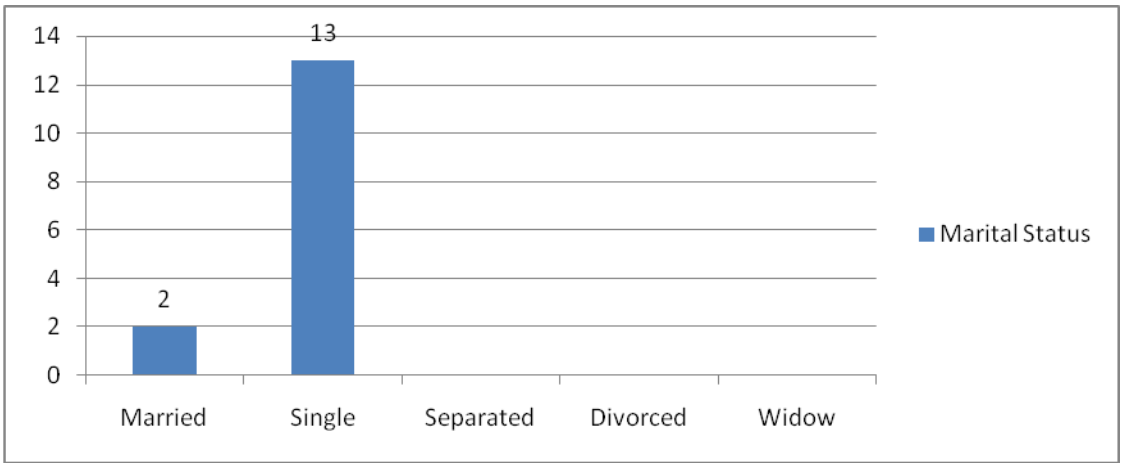

Figure 4.4: Marital Status

The graph illustrates that a large proportion (87%) of the participants were single and had never been previously married; followed by a small portion (13%) that were married. Since the respondents were from poor communities, this could be attributed to the costs associated with marriage, especially in the Xhosa culture where a man is required in terms of their tradition to pay a lobola prior the wedding.

Kaschulla (1997: 37) states that today Xhosa people generally have a Christian wedding ceremony, followed by a traditional ceremony that includes lobola negotiations. A family living in an urban area may decide that the lobola be paid in cash rather than in cows. Marriage is therefore an expensive event for Xhosa men.

4.2.1.5 Education Level

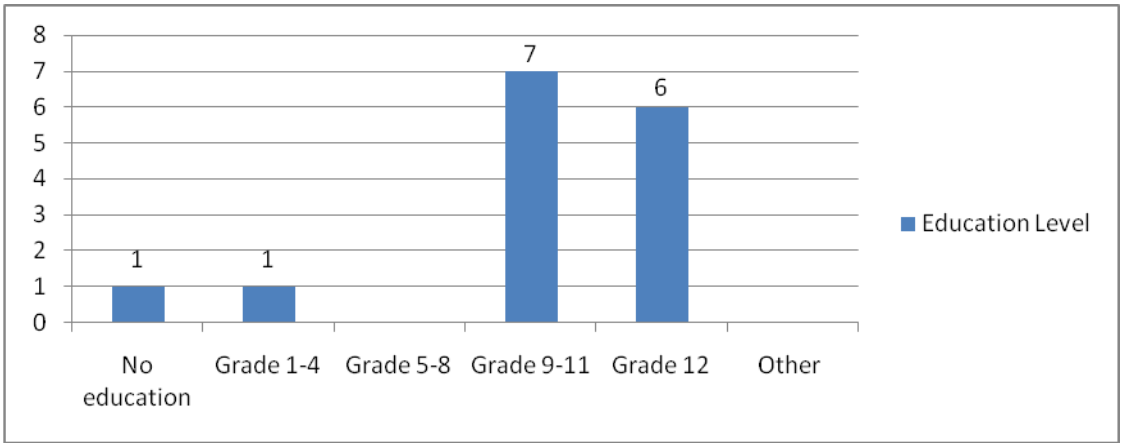

Figure 4.5: Education Level

The graph above depicts that the most participants (46%) had completed grades nine to eleven, followed by a portion (40%) that had completed grade twelve. A small portion (7%) had no formal education and the other portion (7%) had between grades one to four. The data showed that none of the respondents had a tertiary qualification.

The researcher is of the opinion that the lack of formal education amongst the participants might be the reason why many of them were unemployed and struggling to find employment. Being educated increases employability chances. The chart above also illustrates that the participants were fairly literate as most of them (86%) had completed grades nine, ten, eleven and twelve. It can be interpreted that the low level of education within these communities played a role in their level of understanding of the English. The inability to comprehend and converse in English limited most of the respondents' attempts to improve their lives.

The MDGs are time-bound development targets that address many dimensions of poverty, such as hunger, disease, inadequate water supplies and lack of education. According to the World Bank (2007: 29), when a country educates its girls, its mortality rates usually fall, fertility rates decline, and the health and education prospects of the next generation improve. This assertion is reinforced by Black and White (2004: 184), who state that in the MDGs education is doubly emphasized, as it is also viewed as a vehicle for promoting gender equity and empowerment. Improved

education status, increased share of women in wage employment in the non-agricultural sector, and the proportion of seats held in the national parliaments are represented as indicators of the increased gender equity and empowerment of women.

4.2.2 SECTION B: Project Participants' Economic Information

4.2.2.1 Number of people living in a household

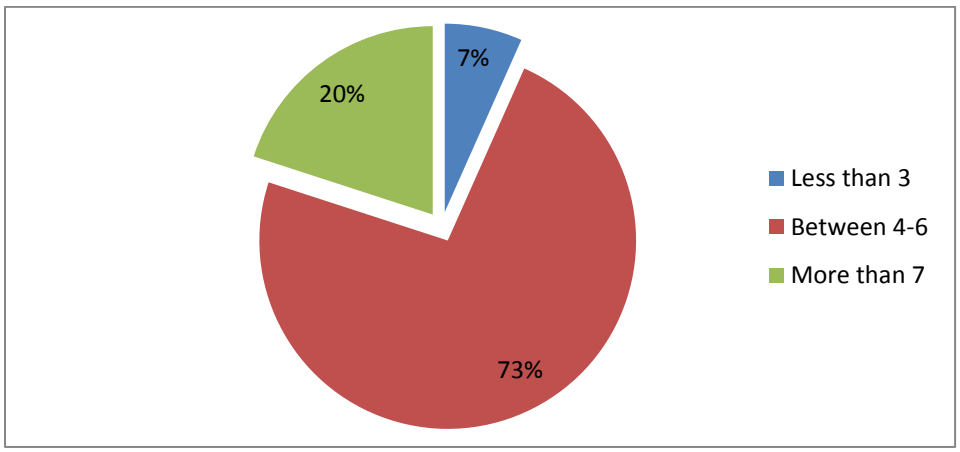

Figure 4.6: Number of individuals living in a household

The above graph illustrates that the majority (73%) of the participants in the study lived in households that consist of four to six individuals staying in one house. The other portion (20%) consists of more than seven and only a very small portion (7%) consists of fewer than three individuals living in a household. This information has been interpreted in tandem with other data relating to the households' disposable income derived from the hydroponics projects selected for this study and from other sources of income, including state grants.

According to the United Nations Conference on Trade and Development (2006: 78), the micro-economic approach to poverty analysis adopts the household as the basic unit of analysis; divides the poor to non-poor on the basis of a chosen income or consumption poverty line; and then focuses on the characteristics which distinguish the poor from the non-poor. Hence the researcher elected to analyse the number of people living in a household.

4.2.2.2 Project Participants' other employment

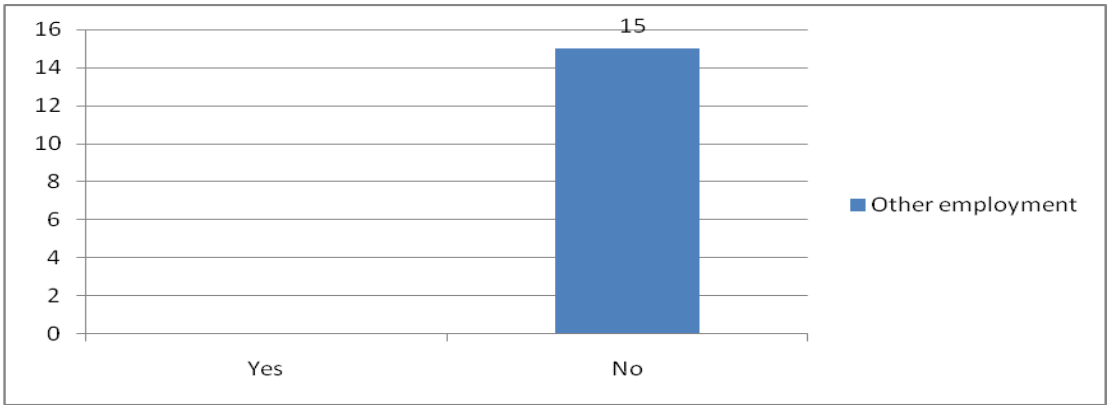

Figure 4.7: Other employment

The data reveals that all participants had no other employment. It could be inferred that these hydroponics projects contributed immensely in improving the lives of the participants by creating employment and curtailing poverty in their community.

The three hydroponics projects selected for the study are located next to poverty-stricken areas. The problem with poverty is that it can be hereditary, meaning children from poor households are likely to be poor when they are old as compared to those from well-off households. These projects play a significant role in the attempt to break away the chain of poverty by giving people opportunities to gain skills and employment.

4.2.2.3 Other Project Participants' financial support

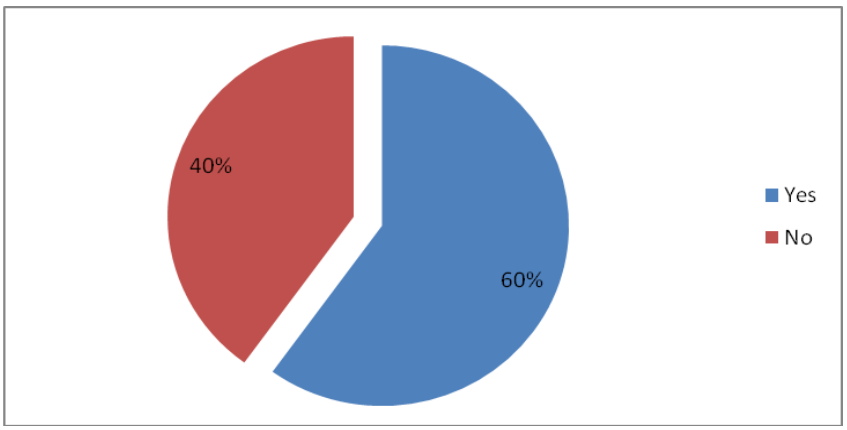

Figure 4.8: Other financial support

The graph above shows that the majority of the participants (60%) have other financial support while the minority (40%) have none. Some of the participants

reported that their family members worked part-time as gardeners and some as domestic workers or house maids. The participants also expressed appreciation for the temporary employment of their siblings because they alleviate financial pressures in their households.

4.2.2.4 Project Participants' sources of income

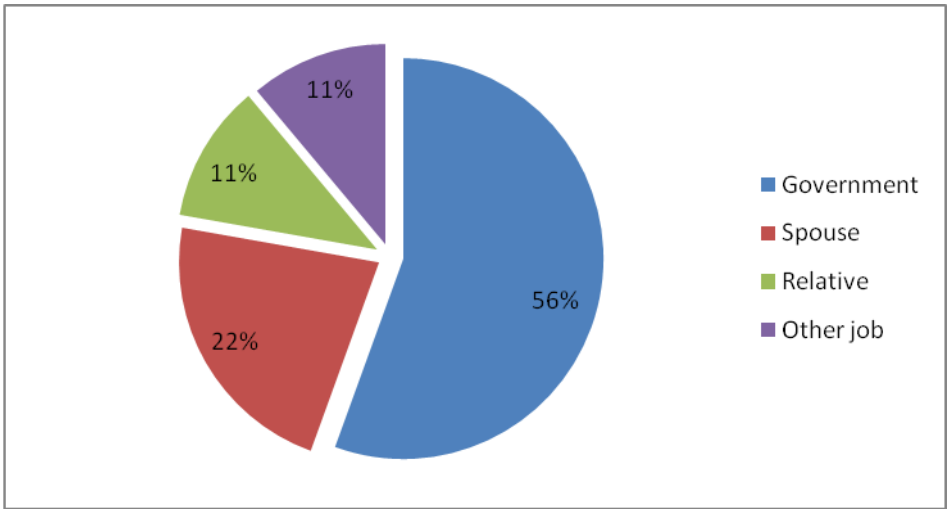

Figure 4.9.1: Other sources of finance

The data reveals that most of the participants (60%) were receiving financial support from government in the form of grants. These were followed by a portion (22%) whose other source came from their spouses; a small portion (11%) were supported by their relatives and the other small portion(11%) by other ad hoc jobs.

The researcher also found that most participants in the study mainly received other financial assistance from the government grants. The participants reported that the government grants they received as additional income in the form of disability grants, old age pensions and child support grants, were the second most important source of income.

4.2.2.5 Project Participants' other income per month

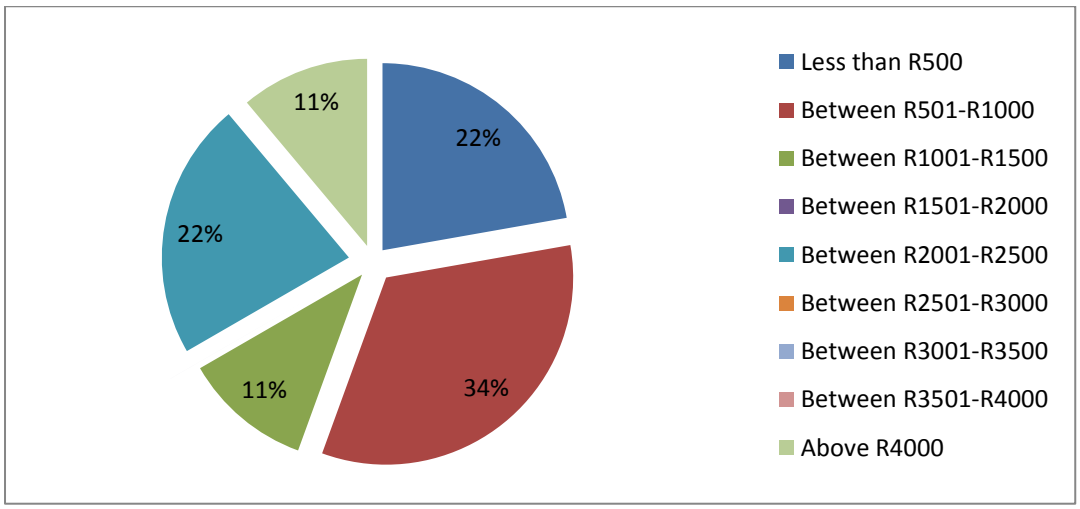

Figure 4.9.2: Other income per month

The data in the graph above depicts the supplementary income monthly the respondents had been receiving either from government grants, their spouses, and relatives or from ad hoc jobs. A large portion of participants (34%) had been receiving between R501-R1000, followed by two portions at (22%) that had been receiving less than R500 and between R2001-R2500. The other two portions (11%) had been equally receiving R1001-R1500 and above R4000.

4.2.3 SECTION C: Project Participants' Perceptions and the impact of the Project

4.2.3.1 Project Participants' duration of involvement

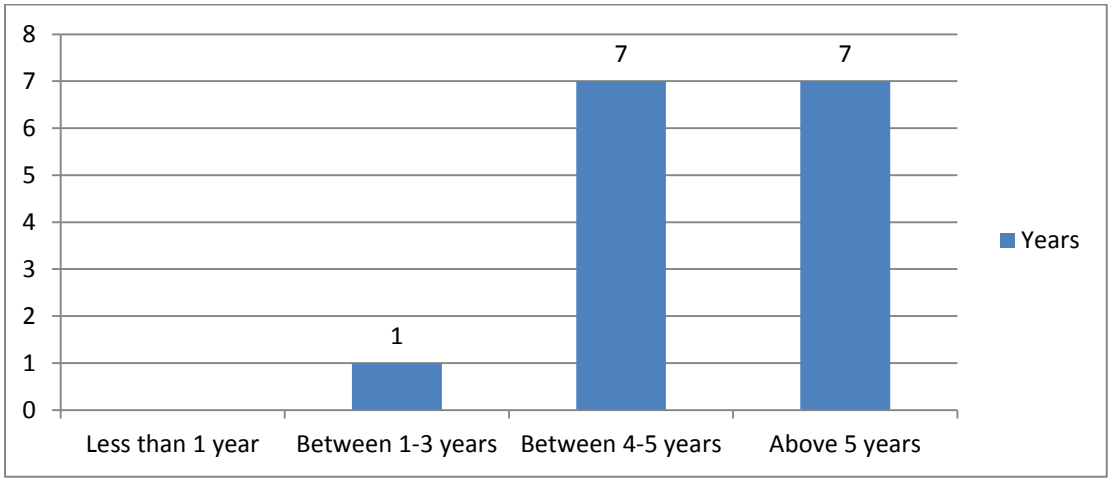

Figure 4.10: Duration of involvement

The above graph shows most of the respondents have been participating in these projects above 5 years (47%), also between 4 to 5 years (47%) and only one participant has worked between 1 to 3 years (6%).

4.2.3.2 Designations of the Project Participants

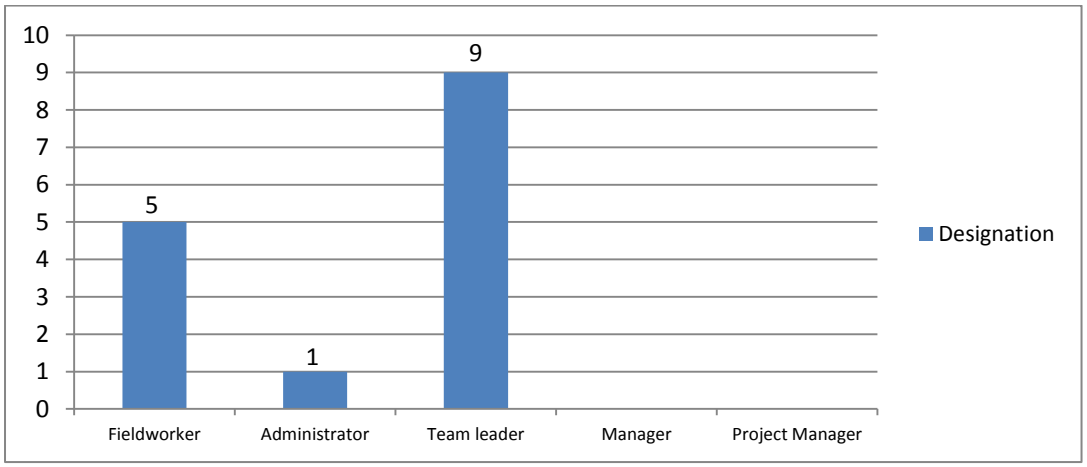

Figure 4.11: Designations

In the above graph the data shows that most respondents (60%) that participated in this study stated that they were working as Team Leaders, followed by thirty-three percent (33%), with one respondent (7%) working as an Administrator.

4.2.3.3 Project Participants' personal circumstances before project

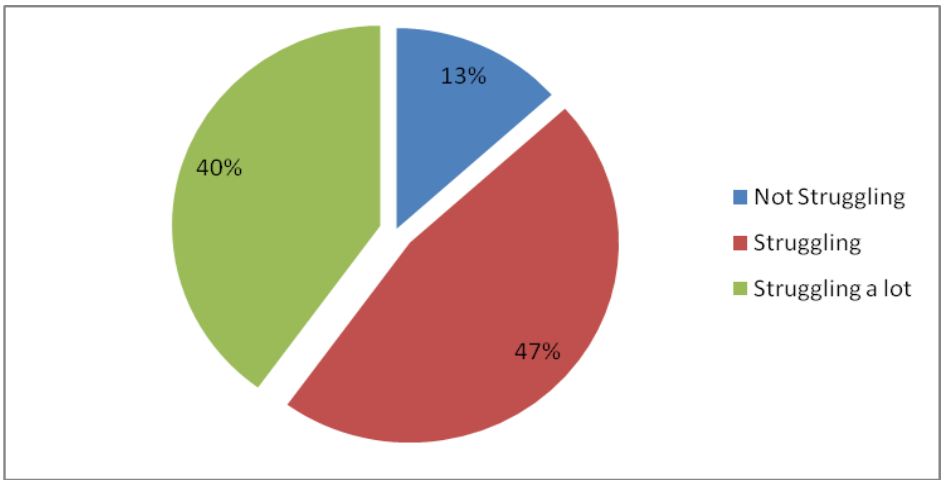

Figure 4.12: Personal circumstances before the project

The chart above shows that most (47%) of the participants in the study were struggling to make ends meet, followed by a portion (40%) of participants that were

struggling a lot and reported that they would sometimes go to bed without enjoying a meal. A small portion (13%) reported that they were not struggling. They were receiving a form of financial assistance from a relative or a family member who was receiving a government grant, and this was helping them mitigate the effects of poverty.

The OECD states that Samson (2008) studies using panel labour force survey tracking social grants recipients in South Africa over time, found that workers in households receiving social cash transfer (grants) looked for work "more intensively and extensively". Consequently, they were more successful in finding new jobs than workers in comparably poor households who did not receive such grants. Sampson explained that social grants are likely to mitigate social risks and relax liquidity constraints on poor households, thereby encouraging migration and employment search (2011: 55).

4.2.3.4 Project Participants' ability to meet basic needs

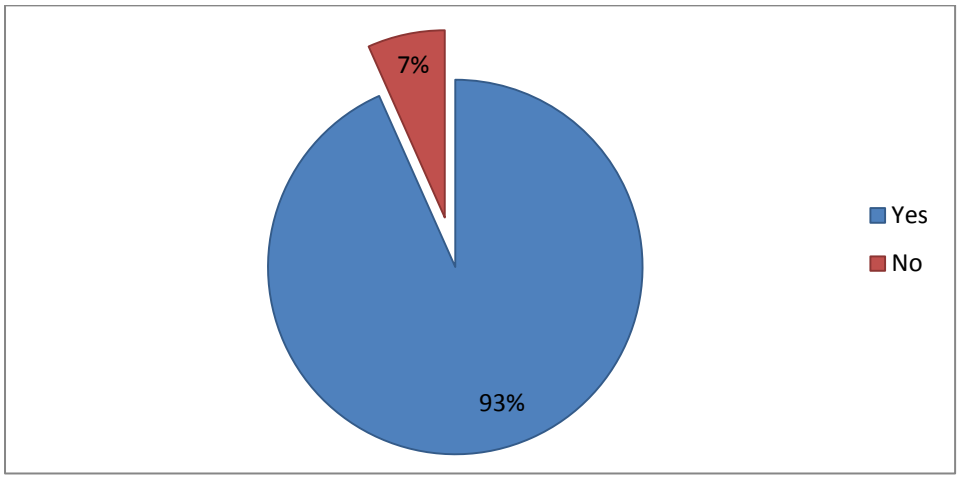

Figure 4.13: Ability to meet basic needs

The above figure shows that the overwhelming majority (93%) of the participants were able to meet their basic needs. These respondents reported that they did not go to bed at night without enjoying a meal since they started participating in these Hydroponics projects. They mentioned that they augmented their salaries with other sources of income that are referred to in Figure 8.1 to improve their standard of living. They reported that they now had household disposable income for food, municipal rates and services, their children's school fees and school clothes and

they were paying for things that were needed at school, such as fees for school outings.

Only seven percent (7%) of the respondents reported that sometimes they would sleep without eating food especially towards the end of the month. The latter also mentioned that that their household income was not sufficient to take them through to the end of the month. and that can be attributed to greater numbers of people living in the same household who are relying on their earnings derived from the Hydroponics projects.

4.2.3.5 Other benefits that derived from the project

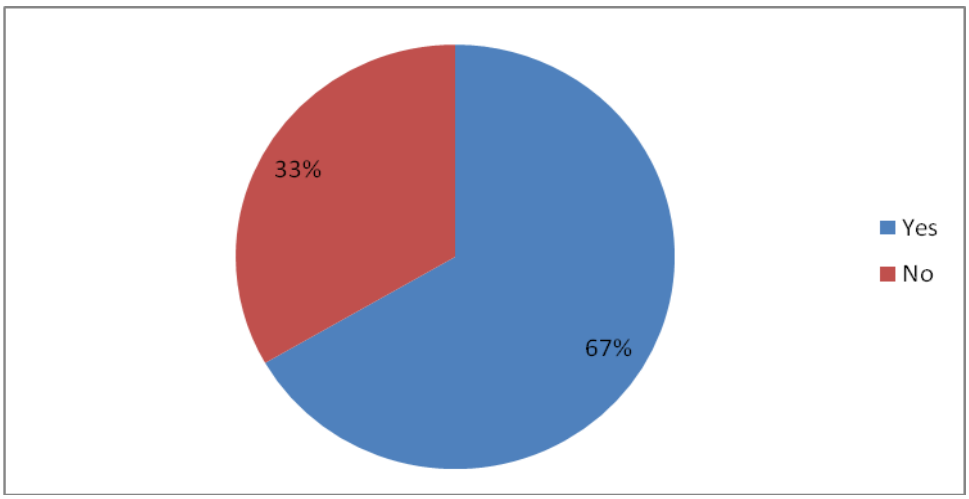

Figure 4:14: Other benefits that derived from the project

The majority (67%) of the respondents indicated that they have derived other benefits from these Hydroponics projects, such as training opportunities; and are sometimes sent to workshops. Some mentioned that they have acquired trimming, sorting and picking skills. Others mentioned that they were now able to send their children to school and buy clothes, whilst others reported that had attended fertilizer, irrigation, financial, basic management, sorting and fumigation training. The researcher inferred that the three projects viewed training as one of the business imperatives and also noticed from the data collected that one was lagging behind regarding training of its participants.

4.2.3.6 Project Participants' earnings per month

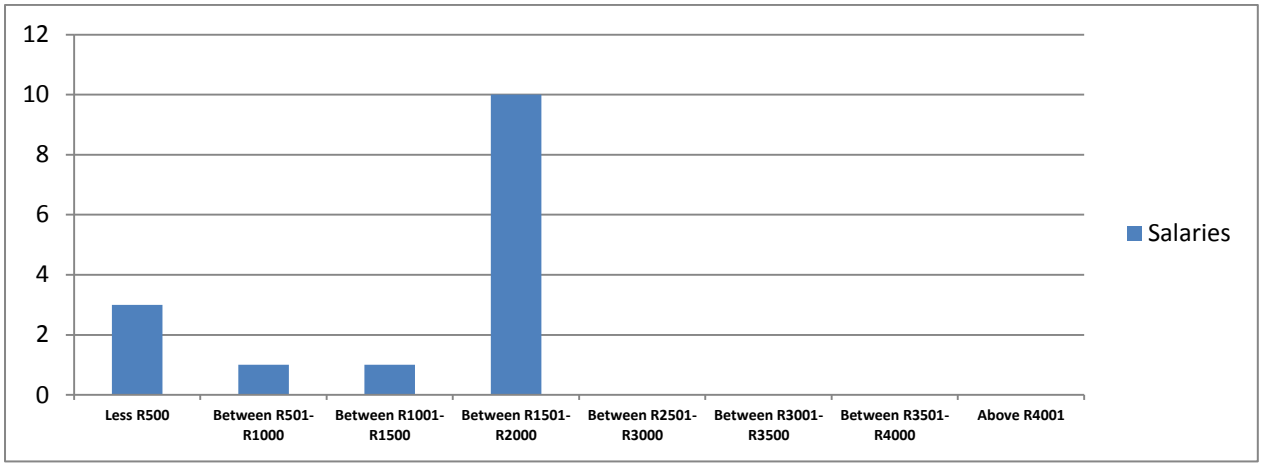

Figure 4:15: Earnings per month

The data showed that the majority (66%) of the respondents earned between R1501-R2000, followed by three (20%) that earned less than R500. One (7%) earned between R501-R1000 and the other one (7%) earned between R1001-R1500.

4.2.3.7 Training attended

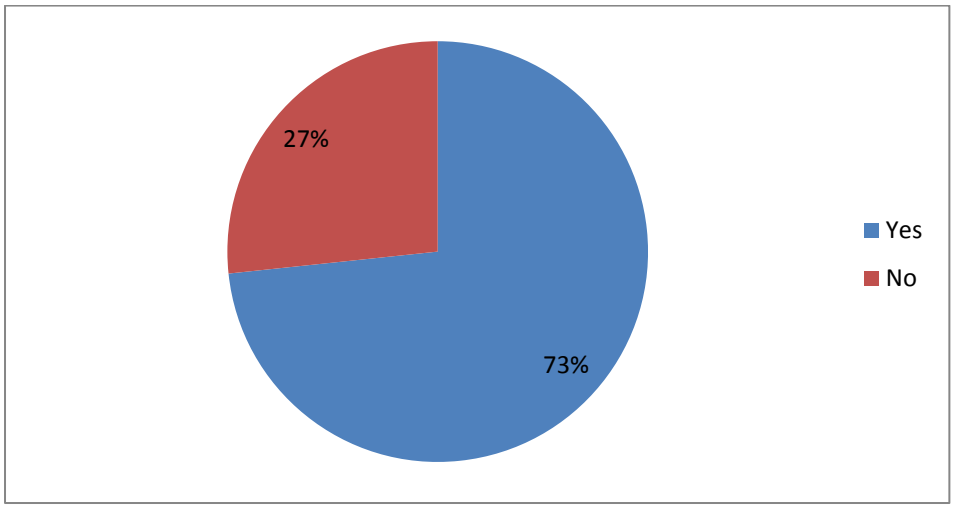

Figure 4.16.1: Training attended

The above chart shows that the majority (73%) of respondents attended training, whilst the minority (27%) indicated that they had never attended any training. Those that attended training reported that they found training valuable. It ,enriched their knowledge and helped them to skilfully dispense their projects' day-to-day operations.

4.2.3.8 Types of training attended

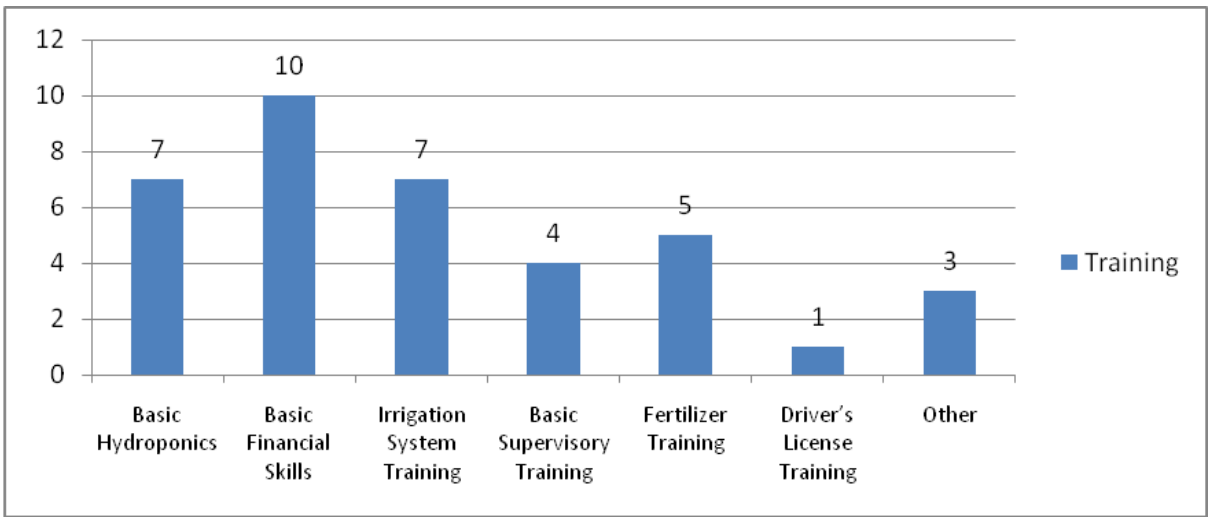

Figure 4.16.2: Types of training attended

The above graph shows that ten respondents (27%) attended Basic Financial Skills training, seven (19%) Basic Hydroponics, seven (19%) Irrigation System, five (13%) fertilizer training, four (11%) Basic Supervisory training and one (3%) attended the Driver's Licence training. Three respondents (8%) indicated that they attended Computer skills training and Health and Safety training. Training is central to the development of skills and the success of the business. People with skills stand a better chance of employability than those with no skills.

The data shows that the participants attended a variety of training courses that are relevant to the business of running Hydroponics. This is very positive as training is one of the critical elements for the viability and the sustainability of these projects.

4.2.3.9 Types of produce that are offered by these Hydroponics projects

One project produces cabbages, carrots, spinach, beetroot, maize, butternuts, pumpkins, broccoli, tomatoes and onions. The other produces green peppers, cocktail patty pans, baby marrows, brinjals, cocktail tomatoes and normal tomatoes. The third project produces tomatoes, spinach, onions, celery, beetroot, parsley, red peppers, green peppers and yellow peppers.

4.2.3.10 Municipal help for market access

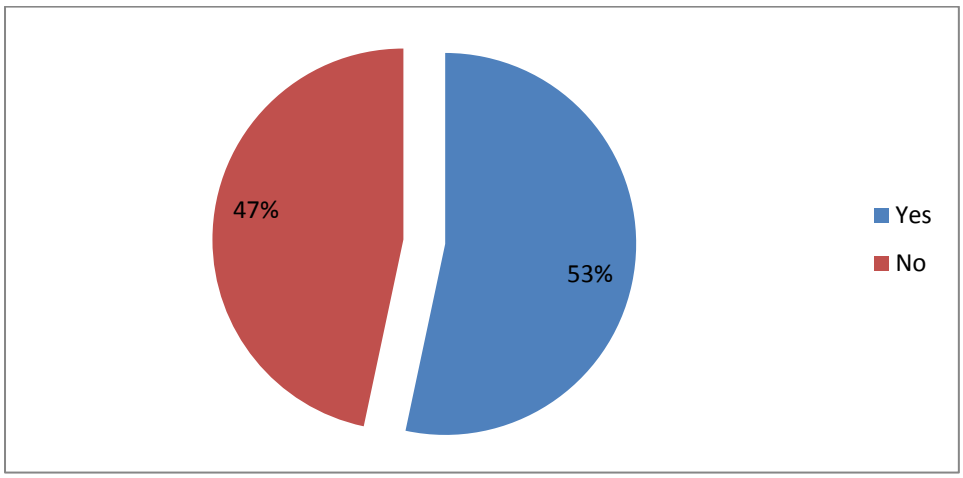

Figure 4.17: Municipal help for market access

The graph above indicates that the majority (53%) of the respondents reported that the NMBM had facilitated market access for these Hydroponics projects, whilst forty-seven percent (47%) thought that NMBM had not facilitated access. Market access is the lifeline for the success for any business. It is crucial for its viability and its sustainability.

4.2.3.11 Markets for the Hydroponics Projects

The three Hydroponics projects sell their products to different markets. The respondents reported that the markets include Fruit and Veg, Spar Supermarket, M.C Brothers, Wasper Agents, A.M.A. Trust, MacKay, Pick Fruit, Waterkloof, Milkwood Farm, some restaurants, the market and the general community.

4.2.3.12 Project Participants' perceptions about the project sustainability

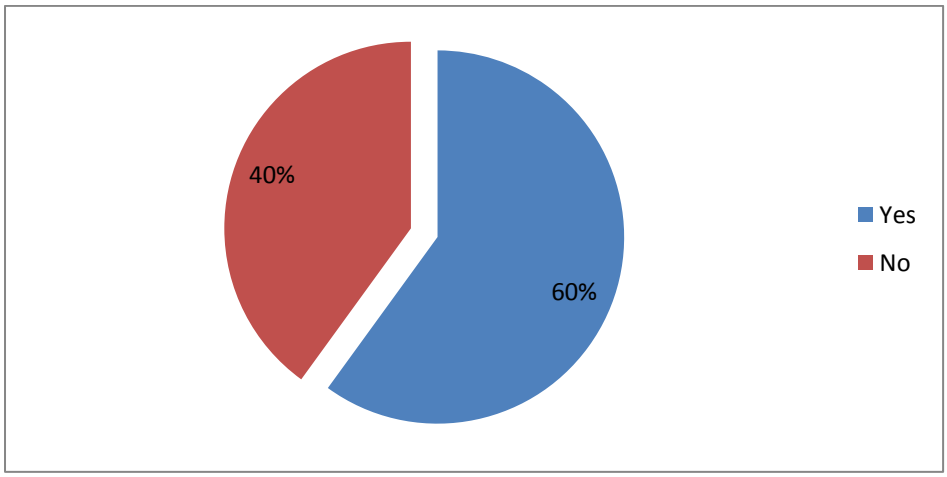

Figure 4.18: Perceptions about the project sustainability

The graph shows that the majority (60%) of the respondents were of the view that these projects were sustainable whereas a minority (40%) expressed that the project were not sustainable.

4.2.3.13 Comparison of the challenges of the three Hydroponics projects

Respondents from the TATI project reported their challenges were:

- transport for their produce;
- municipal turnaround time to fix damaged tunnels;
- and operational costs deficiencies.

Respondents for the Walmer Hydroponics project reported that their challenges were:

- theft by people from the nearby community of produce during the time of harvest;
- shortage of field workers whilst the project could not afford to employ more field workers;
- operational costs deficiencies;
- and municipal turnaround time to fix damaged tunnels.

Respondents from the Emmanuel Haven Hydroponics project reported that their challenges were:

- theft of produce by people from the nearby community;
- inefficient delivery of pesticides and this results in high waste levels;
- lack of safety equipment for the field workers, such as safety goggles for working acid powder and rain suits for rainy weathers;
- and no lockers for workers in which to put their personal belongings.

The data showed that theft was a common problem for the Walmer Hydroponics project and the Emmanuel Haven project. Data also showed that operational costs deficiencies were a major setback for both the Walmer Hydroponics project and the TATI.

4.3 MUNICIPAL OFFICIALS' DATA ANALYSIS AND INTERPRETATION SECTION

4.3.1 SECTION A: NMBM Officials' Biographical Information

4.3.1.1 Gender, age, language and educational qualification

The two respondents that participated in the study are both males between the ages of 36 and 45 years and they are proficient in English and Xhosa. It also shows that both respondents have Bachelors in Agriculture and one respondent also majored in Economics.

4.3.2 SECTION B: NMBM's approach to Urban Agriculture Projects

4.3.2.1 Urban agriculture projects that NMBM support

One respondent reported that there are over forty (40) urban agriculture projects that NMBM supports in the Metropole and estimated that there are hundreds of people participating in these projects.

4.3.2.2 NMBM's mid-term (1-3 years) or future (4 years and above) roll-out plan

One of the respondents indicated that the NMBM had appointed a consultant to undertake project-by-project appraisal where all supported projects, including the Hydroponics projects, would be assessed and evaluated according to the performances. This process would then provide NMBM with outcomes and recommendations that would be used to prepare mid-term and future roll-out plans.

The other respondent reported that agro-processing was a new field in the sector and in the mid-term NMBM would highly encourage and support initiatives that were focused on agro-processing.

4.3.2.3 The formation and the drivers of the urban agriculture projects in the NMBM

One of the respondents reported that some of the urban agriculture projects that NMBM supports, were initiated, formed and driven by communities. The respondent added that this approach was entirely based on demand. The other respondents said that some of these projects were initiated by the NMBM and the project participants had been identified within various Wards in consultation with the Ward Councillors.

4.3.2.4 NMBM's process of identifying land for urban agriculture projects

The respondent reported that the NMBM Urban Agriculture office, in consultation with the Ward Councillor of a particular area, identified suitable land for the project. The respondent further reported that Environmental Impact Assessment (EIA) was normally done before the project commenced and also soil sampling analysis was done to determine the suitability of the land.

The other respondent indicated factors such as:

- proximity of the land to the community where intended project participants reside;
- suitability of the land for the intended purpose;
- whether authorization is granted for the land to be used;
- and market availability.

The respondent further indicated that in most cases due to the size of development, the risk assessment was not carried out. However, NMBM calculated financial risk in determining project viability.

4.3.3 SECTION C: NMBM's support for urban agriculture projects

4.3.3.1 Training, market access strategy and other forms of support

Both respondents reported that NMBM had sent project participants from the Hydroponics projects that participated in the study on the follow training courses:

- Basic Hydroponics

- Irrigation Systems training
- Basic Financial skills
- and Fertilizer training.

One respondent mentioned that some participants from these Hydroponics projects had been sent on a Basic Supervisory training course and they had sent participants from other urban agriculture projects to a Poultry and Broiler Production course.

One of the respondents reported that NMBM had facilitated market access for the Hydroponics projects and for urban agriculture projects in general. They reported that NMBM's strategy was to provide these projects with space reserves at the Fresh Produce Market so as to establish a centralized marketing, branding and distribution centre for all urban agriculture projects products. The other respondent mentioned that NMBM utilized platforms like Agrifair and other agricultural shows where urban agriculture projects were showcasing their produce and network with other players in the industry. The respondent added that NMBM from time to time invited potential retailers and arranged visits to these projects.

One respondent mentioned that NMBM also offered support for the Hydroponics projects and other urban agriculture projects with the following services:

- Land preparation
- Infrastructure development
- Purchasing of production inputs
- and Technical and advisory services.

4.3.3.2 NMBM challenges in supporting urban agriculture projects

The respondents reported that the challenges included project participants' commitment, theft, land protected for other intended purposes (spatial development framework), lack of urban agriculture development framework, lack of alternative water accessibility and unavailability of land.

The other respondent added water restrictions, budgetary constraints associated with the increasing number of projects to be supported, a disproportionately large number of participants per project, theft and vandalism.

CHAPTER FIVE

FINDINGS AND RECOMMENDATIONS

5.1 Introduction

The research problem area for this study is to investigate poverty alleviation projects in the form of urban agriculture and LED in the NMBM area. In order to solve the research problem, the researcher focused and addressed the following tabulated research sub-problems:

- What are the benefits for the local community participating in urban agriculture in the NMBM?
- What is the role of poverty alleviation projects in creating employment in the NMBM?
- What is the approach of the NMBM to poverty alleviation initiatives as a LED strategy?
- How are poverty alleviations projects supported by the NMBM to ensure sustainability?
- What are the views of the project participants and the NMBM officials pertaining to urban agriculture?

The investigation research problem area focused on poverty alleviation projects in the form of urban agriculture as one of LED key drivers in the NMBM area. The context of the research area was the Nelson Mandela Bay impoverished townships where urban agriculture is taking place. The respondents of this research were the urban agriculture project participants and NMBM municipal officials.

5.2 Conclusive Summary

The study focused on three hydroponics projects: the Municipality Emmanuel Haven Hydroponics Project, Walmer Hydroponics Co-operative and TATI. The three selected projects fall within the NMBM jurisdiction. Structured questionnaires and informal interviews were used to collect information about the socio-economic impact

and the sustainability of the urban agriculture projects and also to ascertain the past, on-going and planned urban agriculture activities in the NMBM. This study showed that urban agriculture plays a significant role for the LED and contributes to household food security and the livelihood of the people.

The NMBM is supporting urban agriculture projects as part of the diversifying of LED and also aims at reducing unemployment and alleviating poverty in the metropole. The NMBM role is very critical in increasing the livelihood of the communities that are in dire straits where unemployment, illiteracy and poverty levels are high. The majority of households depend on social grants and assistance in the poor areas and the NMBM role is critical in helping needy communities in meeting their basic needs. Urban agriculture is a crucial integral component of the NMBM broad antipoverty strategy that aims at breaking the poverty cycle and creating food independency.

5.3 Summary of Chapters

5.3.1 Chapter One

This chapter set the scene for the study, and the critical components of the study were briefly outlined. These were the areas, the study background, research aim and objectives, the research scope and scale, literature review, theoretical grounding, international perspective, the national and local government framework approach and the methodology and design for the study. This was done to demonstrate the relevance and the importance of the study.

5.3.2 Chapter Two

This chapter outlined the theoretical foundation for the study. The study is predicated upon a number of theories and approaches namely, the basic needs approach, the people-centred development approach, the participatory approach, the sustainable development approach, asset-based development strategy and permaculture principles. In this chapter the international perspective was elaborated upon by looking at the MDGs and the related views from different authors.

5.3.3 Chapter Three

This chapter provided a roadmap for the study by explaining how information was obtained, what data collection methods were used and why particular methods were used. It also outlined the research design. It was outlined in this chapter that in this study structured questionnaires and informal interviews were used to collect information on the existing and planned activities in urban agriculture in the NMBM. Relevant municipal documents were be used to identify critical factors that contribute to the sustainability of the urban agriculture projects in the NMBM. In this chapter the theoretical support was outlined and provided for the research methods that were utilised in this research.

5.3.4 Chapter Four

In this chapter the data collected was thoroughly analysed and interpreted. Data gathered from both interviews and by questionnaires was analysed. Firstly, the data sources were identified. Then, an analysis and evaluation of data gathered by questionnaire was carried out. Finally, brief comparisons were made among the three hydroponics projects selected for the study. In this chapter the researcher presented the analysis and interpretation of the qualitative and quantitative data collected through the questionnaires and interviews. The findings were predicated on the perspectives of the respondents, based on the data collected from the NMBM officials and the project participants from the three projects selected for the study. The researcher drew the findings from the respondents' perspectives in tandem with the data analysis and interpretation presented in Chapter Four.

5.3.5 Chapter Five

In this chapter a concluding summary, the summary of each chapter for the study, was presented. Recommendations and findings of the study were also presented. The recommendations and findings were hinged on a thorough analysis of the data collected. The gaps and opportunities that were identified during the data interpretation were considered for the formulation of the recommendations. The

opportunities that emerged from the data analysis and interpretation were highlighted in the conclusion.

5.4 Recommendations

Based on the findings of this study, the researcher recommends the following:

5.4.1 NMBM needs to formulate a comprehensive Urban Agriculture policy

NMBM does not have a policy to guide and regulate urban agricultural activities in the metropole and this was confirmed by one respondent who is a NMBM official. An urban agriculture policy should be developed and the policy should include, but not be limited to, the following aspects:

- The target group
- The selection criteria
- The support that the municipality offers for the different urban agricultural activities
- A clear procedure for the needy community members to follow in order to get municipal support

5.4.2 NMBM needs to develop a Monitoring and Evaluation mechanism

NMBM needs to develop a framework and a monitoring and evaluation mechanism for measuring urban agriculture development progress. A database for all projects that are being supported, the different kinds of support that these projects receive from the municipality and financials relating to the support that is being rendered, should form an integral part of this mechanism. This database can be in a form of an electronic system in which data will be loaded and stored. The system should have the following capability:

- provide a specific number of all urban agriculture beneficiaries in a given period;
- provide a specific number and details of all beneficiaries per project in a given period;

- provide a specific number and details of all beneficiaries of similar projects in a given period;
- provide information with regards to money spent by NMBM in support of a specific project in a given period;
- provide information with regards to money spent by NMBM in support of similar projects in a given period.

5.4.3 Environmental Impact Assessment

An environmental Impact Assessment should be a pre-condition for the urban agriculture projects for large urban agriculture projects that are receiving support from the NMBM. Offering support without conducting EIAs can be very dangerous. This can blemish the image of the municipality if a project that receives or has received municipal support has been undertaken in an area that is later found to be posing an environmental risk. This can also lead to loss of investments.

5.4.4 Water boreholes application

Treated water is very costly and water-related municipal bills have been identified as a challenge by the respondents of one the projects. Water boreholes can help in solving the problem relating to water municipal bills. The installation can depend on the scale of the project.

5.4.5 Maintenance of damaged Hydroponics tunnels

There should a turnaround time for fixing damaged tunnels because if damaged tunnels are not fixed promptly this could hamper the viability and the sustainability of the projects. When damaged tunnels are left unattended for too long this decreases production levels and it is easy for insects from outside the hydroponics setting to ruin the produce. The respondents from TATI and the Walmer Hydroponics project reported that the municipality is taking too long in aiding these projects when a tunnel has been damaged by strong winds.

Another way of getting around this problem will be to explore the possibility of insuring the tunnels through an Insurance Company. In a case where the tunnels are insured, there should be an agreed turnaround time for fixing damaged tunnels.

5.4.6 Issuing of Pesticides

It was reported by respondents from one of the projects that the delay in issuing pesticides is a major problem, resulting in high waste produce. They also said that better chemical management can improve the product levels and reduce waste. The researcher therefore recommends that their stock levels should be monitored carefully and pesticide orders should be made in advance before the stock is depleted. This means that there should be a paradigm shift for the current reactive approach to a more proactive approach. At best, the prompt provision of pesticide can make a project more viable and at worst, it can render a project to be sustainable.

5.4.7 Security

Security is a crucial factor pertaining to the sustainability of these Hydroponics projects. Some project participants reported that theft of produce by thieves from the nearby community was a major challenge and that accounted for a great loss of revenue. These projects need to consider investing more on security, either from the revenue they generate or to solicit funding from the NMBM or any other donor to beef up security. The researcher further recommends the installation of night vision security cameras, sensor lights and loud sirens. NMBM should include security as an integral part of the overall project plan when it is going to invest in an capital intensive urban agriculture project like the TATI and the Walmer Hydroponics project.

5.5 Conclusion

There is a great distinction between the Basic Needs approach and ABCD strategy. The two are like the two sides of the same coin. While the Basic need approach

places emphasis on the needs of the community, the latter places emphasis on assets which the community have at their disposal as the starting point for development. The projects that participated in the study were formed, amongst others, to alleviate poverty, thereby serving one of the basic needs which is food. Food is one of the basic needs in terms of Maslow's Hierarchy of Needs. The data collected in this study revealed that the three projects helped the project participants a great deal in meeting their basic needs, especially the food need. Therefore, there is a direct connection between the Basic Needs theory and the rationale behind the formation of these projects.

The Walmer Hydroponics project and the TATI project are community-based projects. It was reported by one of the NMBM officials that the Walmer Hydroponics project was started by the NMBM, and the project participants were identified within a Ward in consultation with the Ward Councilor. The TATI project was started by the UDDI. These two projects have committees, with a chairperson, a secretary and a treasurer. The committees serve as a viaduct between the project participants, the municipal officials and other funders. The committees are an integral part of the management strategy for the projects. There is great participation of project participants in the decisions about how the project should be run. The Emmanuel Haven Hydroponics project is run by a board of trustees, and there's minimal participation in the decision-making by the project participants.

ABCD is a strategy for sustainable community-driven development. The most important aspect is that the ABCD starts by using what is already in the community. The NMBM needs to gravitate its support towards ABCD sustainable initiatives, the kind of initiatives where people start projects from what they have and thereafter approach the municipality for help. This strategy encourages creativity and initiative from the communities as opposed to communities waiting for the municipality and outside agencies to start projects for them.

People-centred development stresses the participation of the majority of the population, especially those who were previously excluded, for example women, the youth and the illiterate in the process of development, which can be achieved by decentralising the decision-making process. LED is seen as one of the most

important ways of alleviating poverty and it is people-centred in character. Venter (2010: 112) states that urban agriculture offers an immense opportunity to increase the welfare of all citizens, and help to repair the ecological damage. This is in line with the sustainable approach and the permaculture principles. Urban agriculture has a potential to make a significant contribution to the solution of many current urban problems, and can lead to healthy communities and sustainable development. Based on the responses from the respondents, the three projects are sustainable and linked well with both the people-centred and the sustainable approaches as articulated in the literature review section, in Chapter Two. These projects are also people-centred and there's great participation of women.

In this study, the researcher has been able to answer the sub foci question by developing questionnaires that were aimed at sourcing data relevant to the aims and the objectives of the study. Data was collected by conducting structured individual interviews with the Urban Agriculture Director, the Assistant Director and the Urban Agriculture Technician, and by conducting group interviews with the project participants.

In a nutshell, the aims and objectives of the study can be compressed into two points:

(i) To establish the benefits for project participants, to ascertain the role that urban agriculture projects play in creating employment in the NMBM and to establish the views of project participants pertaining to urban agriculture;

(ii) To establish the NMBM approach to urban agriculture initiatives as a LED strategy**,** to ascertain the NMBM strategies of ensuring that urban agriculture projects are sustainable, and also to enlist the views of the NMBM officials pertaining to urban agriculture.

Firstly, the research revealed that the urban agriculture projects played a critical role in alleviating poverty, creating employment and contributing to LED. Many respondents expressed that they were struggling and were unable to meet their basic needs before the inception of these projects. These projects have enabled them to meet their basic needs, including buying their children's uniforms and clothes, and buying food for their households. The participants also identified

challenges, such as crime, turnaround time to fix damaged tunnels and poor pesticide control amongst others as having a negative bearing on the viability and sustainability of the projects.

Secondly, the municipality as reported by the respondents, also supplies the gardens with tools, containers, fertilizers and seedlings.The other respondent reported that agro-processing is a new field in the sector and in the midterm NMBM will highly encourage and support initiatives that are focused on agro-processing. He also reported that the municipality also provides infrastructural development, land preparation, purchasing of production inputs and technical and advisory services.

In conclusion, the researcher has been able to draw a link between the theoretical underpinnings of the study and the practice as represented by data collected from the group sample. In this chapter the researcher was also able to demonstrate how the aims and the objectives have been met.

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ANNEXURE A

RESEARCH DESIGN

What does the researcher need to solve?	What does the researcher need to know to be able to solve the sub-problems?	What does the researcher need to show, justify and validate his/her learning?	Who/where will the researcher get the information from?	How can the researcher collect the data?
1. To investigate the benefits for local community participating in urban agriculture in the NMBM	• Need to identify three hydroponics projects in three different townships that are characterised by poverty and high rate of unemployment • Need to examine the project participants' education profile, their economic profile and how they are benefiting from these projects	• Need to show understanding of LED and its implementation process	• Will get the information from the senior officials of the municipality such as the Urban Agriculture Director, the Assistant Director and the Technician • Will get also the information from project participants from the three selected hydroponics projects	• Data to be collected by conducting structured individual interviews with the Urban Agriculture Director, Assistant Director and the Urban Agriculture Technician • Review of NMBM Urban Agriculture-related policies • Use of questionnaires • For project participants focus group interviews will be used
2. To investigate the role of urban agriculture projects in creating employment in the NMBM	• Need to determine whether urban agriculture has been able to created jobs and has alleviated poverty in the NMBM	• Need to get documents and reports regarding the implemented urban agriculture projects from 2004 till 2011. • Need to access the information with regard to socio-economic status of the project participants	• Intend to get the information from the municipality and from the NMBM website • Intend to get the other information from the project participants	• Reading and analysing documents collected from the municipality and from the municipality website • Use of questionnaires • Individual interviews with municipal officials • Use focus group interviews for project participants

3. To investigate the approach of the NMB municipality to urban agriculture initiatives as a LED strategy.	• Need to know whether the intended projects have been accomplished or achieved according to the original plan and what are the mid-term and future plans for rolling out similar project to other needy areas.	• Need to have the annual Urban Agriculture and LED reports from 2001 till 2011. • Need to show a table with LED and urban agriculture projects achievements from 2001 to 2011.	• Intend to get the information from the Urban Agriculture Director, the Assistant Director and the Technician.	• Data to be collected by conducting structured individual interviews with the Urban Agriculture Director, the Assistant Director and the Urban Agriculture Technician. • Review of NMBM Urban Agriculture-related policies • Use of questionnaires
4. To investigate how urban agriculture projects are supported by the NMB municipality to ensure sustainability	• Need to know the kind interventions that NMB municipality undertakes to support the urban agriculture projects – i.e. training, mentoring, and provision of land, water, fencing and seeds	Need to have the municipal guiding policy documents on urban agriculture	• Intend to get the information from the Urban Agriculture Director, the Assistant Director and the Technician	• Review municipal urban agriculture policy manuals and records • Also conduct interviews with individual Urban Agriculture municipal officials
5. To investigate the factors required for urban agriculture projects to be sustainable in the Nelson Mandela Bay municipality	• Need to know the best practices regarding urban agriculture projects	• Need to demonstrate an understanding of factors that are required for urban agriculture projects to be sustainable in the NMBM and make recommendation for this study	• Intend to get the information from the Urban Agriculture municipal officials and from the project participants • Intend to also get the information from the reading urban agriculture textbooks and manuals	• Data to be collected by conducting structured individual interviews with the Urban Agriculture Director, the Assistant Director and the Urban Agriculture Technician • Use of questionnaires • Focus group interviews to be used for project participants

ANNEXURE B

EXAMPLE OF A QUESTIONNAIRE FOR THE URBAN AGRICULTURE PROJECT PARTICIPANTS

Name and Surname: ……

Location of the Project:…….....

Name of the Project:……..

Number of Project participants:……..

SECTION A: BIOGRAPHICAL INFORMATION

Please mark with an X in the check boxes below:

1. Gender

Male	
Female	

2. Languages

Xhosa	
English	
Afrikaans	
Other (specify)	

3. Age

Below 18	
19-25	
26-35	
36-45	
46-55	
56-65	
Above 65	

4. Marital Status

Married	
Single	
Separated	
Divorced	
Widow	

5. Education Qualification

(Please indicate your highest educational qualification)

No education	
Grade 1-4	
Grade 5-8	
Grade 9-11	
Grade 12	
Other	

If other please specify ……..

SECTION B: SOCIO-ECONOMIC INFORMATION

6. How many people are living in your household?

Fewer than 3	
Between 4-6	
More than 7	

7. Apart from this project, are you employed?

Yes	
No	

8. Is there any other source of revenue in your household?

Yes	
No	

8.1. If yes, please specify from where?

Government	
Spouse	
Relative	
Other job	

8.2. How much is the additional income in Rands per month?

Less than R500	
Between R501-R1000	
Between R1501-R2000	
Between R2501-R3000	
Between R3001-R3500	
Between R3501-R4000	
Above R4000	

SECTION C: PERCEPTIONS AND IMPACT OF THE PROJECT

9. How long have you been involved in this project?

Less than 1 year	
Between 1-3 years	
Between 4-5 years	
Above 5 years	

10. What is your role in the day-to-day operations of the project?

Fieldworker	
Team leader	
Project Manager	

11. Prior to the project, were you struggling?

Not Struggling	
Struggling	
Struggling a lot	

12. Has the project helped you to meet your basic needs (food)?

Yes	
No	

13. Are there any other benefits that you are deriving from this project?

Yes	
No	

If yes, please specify below.

……

14. What is your earning in Rands per month in this Project?

Less than R500	
Between R501-R1000	
Between R1501-R2000	
Between R2501-R3000	
Between R3001-R3500	
Between R3501-R4000	
Above R4000	

15. Before the start of or during the project, did you attend any training for the project?

Yes	
No	

15.1 Please indicate the training that you attended before or during the project.

Basic Hydroponics	
Basic Financial Skills	
Irrigation System Training	
Basic Supervisory Training	
Fertilizer Training	
Driver's Licence Training	
Other	

If other, please specify below.

……

16. What produce do cultivate in this project?

……...

17. Has the municipality facilitated market access for your products?

Yes	
No	

18. Where do you sell your products?

……

19. What have been the past and present challenges in the project?

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……
……
……
……
……

20. Is the project sustainable?

Yes	
No	

20.1. If no, what are the elements required to improve the project and make it sustainable?

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……
……
……

ANNEXURE C

EXAMPLE OF A QUESTIONNAIRE FOR THE NMBM OFFICIALS

Name and Surname: …….

Department:…….....

Position:……

SECTION A: BIOGRAPHICAL INFORMATION

Please mark with an X in the check boxes below:

1. Gender

Male	
Female	

2. Languages

Xhosa	
English	
Afrikaans	
Other (specify)	

3. Age

Below 18	
19-25	
26-35	
36-45	
46-55	
56-65	
Above 65	

4. Education Qualification

(Please indicate your highest educational qualification)

Grade 9-11	
Grade 12	
Other	

If other please specify ……..

SECTION B: NMBM'S APPROACH TO URBAN AGRICULTURE PROJECTS

5. How many Urban Agriculture projects is NMBM supporting?.....
6. What is official figure of the people participating in Urban Agriculture Projects that are supported by the NMBM?.....
7. What are the mid-term (1-3 years) or future plans (4 years and above) to roll out these Urban Agriculture projects to other areas?

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8. Are these projects community- or municipal-initiated and/or driven?

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9. What is the process of determining Urban Agriculture projects which will be supported by the municipality?

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10. How is land identified for these projects?

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11. Is there any risk impact assessment that is done to determine the environmental impact and the suitability of the land before or after the commencement of these projects?

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……
.....

SECTION C: NMBM'S SUPPORT TO URBAN AGRICULTURE PROJECTS

12. Has the Nelson Mandela Bay Municipality (NMBM) sent the project participants to any of the following training?

Basic Hydroponics	
Basic Financial Skills	
Irrigation System Training	
Basic Supervisory Training	
Fertilizer Training	
Driver's Licence Training	
Other	

12.1. If other, please specify below.

……
……
……
……
……
……...

13. Has the NMBM facilitated market access for the Urban Agriculture products from these projects?

Yes	
No	

13.1 What is the NMBM strategy to market these projects and to create market access?

……
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……

14. What other support does the NMBM offer for these projects?

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15. What are challenges that the NMBM is facing in supporting these projects?

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