# Chapter 5

## Household Surveys and Livelihood Strategies

### 5.1 Introduction

This section focuses on the livelihood strategies of home food gardeners and urban agricultural activities at household level. It is based on transect walks and interviews conducted in Khayelitsha, section F (site 12), Macassar informal settlement (site 11) Kuyasa section (site 10) and Ilitha Park (site 5) (See Figure 2). The survey was carried out in the form of a transect walk, taking a cross-section of an area and visiting every tenth house. If the head of a household was present and willing to answer questions the interview was conducted. If nobody was present or if unwilling to be interviewed, the next house on the transect with somebody at home preferably the head of the household was selected. The transect walk was insightful as it gave an idea of the physical layout of the squatter camp and the way people organise their small plots.

The people of Khayelitsha use many strategies in order to make a living and they probably just want to improve their current standard of living like all of us. Surveyed respondents were interviewed with regard to the principal means they use for survival and for a better life. There are several strategies employed by the surveyed community residents such as resource-based activities and non-resource based activities. These strategies will be studied in line with sustainable livelihood framework and discussed in this chapter.

### 5.2 Resource-based activities

#### 5.2.1 Gardening

Gardening is part of a survival strategy for low-income groups especially women. A total of 92% of the respondents interviewed are engaged in vegetable production. "*Backyard garden is for subsistence, to access food* (Manyira at Litha park). *It also helps with expenditure substitution because you can sell spinach and buy paraffin*". Most of the respondents are old women and they are dependent on pension money for survival and 36% supplement their pensions with gardening. They are getting R570 pension money monthly, which is also their start-up capital for gardening. A respondent from Kuyasa section commented that: "*Back*

*yard plots are small and they help us with food, they do not help us to solve major problems such as buying of furniture, renovating our houses or burial expenses".*

**Plate 3: Backyard or home garden**

## 5.3 Non-resource-based activities

### 5.3.1 Informal trading

A total of 18.7% were involved in informal trading of meat, sweets, chips, peanuts and cigarettes and they supplement their income by gardening. One respondent is selling African beer in his compound in order to earn money for a living. Another is selling second-hand clothes. She goes to relatives and friends to ask for second-hand clothes. Selling sheep's heads and trotters is another livelihood strategy of the respondents in Khayelitsha. Most people are engaged in unprotected wage labour jobs and self-employment activities such as sewing, knitting, beadwork, selling beers, selling chips that offer little job security and legal protection. Little job security and legal protection are part of the vulnerability context on the sustainable livelihood framework (See Figure 1).

### 5.3.2 Voluntary work

Some respondents are volunteers, hoping to get a job in the future. Magxaka at Macassar is sweeping the streets as a volunteer and Mamfene at Site B is gardening at schools with the help of two women and they have a soup kitchen at the school for the school children, hoping something will come up in future. Voluntarily assistance is also part of vulnerability context on the sustainable livelihood framework (See Figure 1).

### 5.3.3 Family

A total of 16.1% of the surveyed respondents were supported by their childrens, husbands and relatives in order to make a living and prosperous life and supplementing their income with gardening. As one respondent commented: "*I go to my relatives and friends to ask for money ranging from R50 to R100 in order to buy inputs for my garden and get little groceries* (Magxaka from Macassar)".

### 5.3.4 Informal sector

Of those employed, 12% are employed in the informal sector. As one respondent commented: "*These jobs are insecure, for an example my company is not in the position to pay its debts, legal procedures are being taken by the lawyers and is going to close down*". Insecurity of jobs is the part of the vulnerability context on the sustainable livelihood framework (See Figure1).

Most of the respondents are engaged in 'piece jobs'. These are short-term work like working as a domestic worker and baby-sitting. Women's income generating activities are concentrated on baby-sitting, sales of street food, sewing, knitting and beadwork.

### 5.3.5 Societies

Only 8 % of the respondents are the members of a burial society where they save money monthly and share it later. Tom from Site B put it, "*I pay R50 for Masiphilisane and R50 for Intaka every month. The money saved will also cover for my father in Transkei*". Membership on these society results in securing capital especially when there is a good relationship amongst them. Although some respondents join societies very few in the sample did. The majority of the respondents (92%) do not join societies. As one respondent commented: "*I don't want to join societies because people cheat and there are lot of meetings, when it becomes your turn to get money, they just disband the whole thing*". Mamushe commented: "*I do not join the societies because the pension money is for meeting the basic needs*".

**Table 4: Demographic characteristics of the sample household**

| N =50 | Frequency | Percentage |
|---|---|---|
| **Interviews** | | |
| Female | 28 | 56 |
| Male | 22 | 44 |
| **Gender** | | |
| Head of the household (male) | 20 | 40 |
| Head of the household (female) | 22 | 44 |
| Spouse of the head | 8 | 16 |
| **Age** | | |
| Age over 40 | 36 | 76.6 |
| Age under 40 | 11 | 23.4 |
| **Martial Status** | | |
| Single | 17 | 34 |
| Married | 30 | 60 |
| Widowed | 3 | 6 |
| **Education Level** | | |
| Pre-school | 2 | 4 |
| Std 1-5 | 31 | 62 |
| Std 6 -10 | 15 | 30 |
| None | 2 | 4 |
| **Family Size** | | |
| Family size less than 5 | 30 | 60 |
| Family more than 5 | 20 | 40 |

Only 47 respondents gave their ages, which varied between 30 and 65, and the average age was 50 years. Women were frequently more involved in gardening than men. Nevertheless some men are actively involved in gardening, particularly older men who garden to access food and for pleasure. Tinker (1994) and Maxwell and Zziwa (1993) show that the majority

of urban farmers in sub-Saharan Africa are women. In Kenya 63% of the urban cultivators are women (Lee- Smith, Manundu, Lamba, Gathuru Kuria, 1987; Freeman, 1991).

**Table 5: Employment status of the gardeners**

| Status | Frequency | % |
|---|---|---|
| Farming | 0 | 0 |
| Pensioner | 0 | 0 |
| Housewife | 5 | 10 |
| Business | 1 | 2 |
| Employed (informal) | 6 | 12 |
| No occupation | 38 | 76 |
| **Total** | **50** | **100** |

Urban agriculture is associated with the lack of formal sector employment. A total of 76% were unemployed and 12% were employed informally. The informal sector has the advantage of flexibility but it is insecure. A total of 10% of surveyed respondents were housewives, dependent on their working husbands as sources of income, and 2% were business people.

**Table 6: Origin of the respondents**

| Birthplace | Frequency | % |
|---|---|---|
| Transkei | 32 | 64 |
| Ciskei | 15 | 30 |
| Other | 3 | 6 |
| **Total** | **50** | **100** |

Most of the respondents come from the Eastern Cape, particularly from the Transkei 64% and 30% from the Ciskei and 6% from areas such Beaufort West and others were born and grew up in Cape Town. People migrate from rural areas to towns and cities in search of jobs but they are unable to find a jobs so they revert or convert into agriculture in order to access food because it is accessible to them.

**Table 7: Reasons for migrating to Cape Town**

| Reason | Frequency | % |
|---|---|---|
| Search for job | 30 | 60 |
| Employed | 13 | 26 |
| Follow husband | 5 | 10 |
| School | 1 | 2 |
| Sickness | 1 | 2 |
| **Total** | **50** | **100** |

A total of 64 % of the respondents migrated from the Transkei and 30% from the Ciskei. The main reason for migrating from rural areas was to search for a job (60%) and others were employed particularly in the informal sector (26%). A total of 10% were women who followed their husbands in cities and towns. Only 2% of the respondents migrated to Cape Town in order to continue their studies and the other 2% were in search of good doctors because of sickness.

**Table 8: Livelihood**

| Activity | Frequency | % | Second activity | % | Third activity | % |
|---|---|---|---|---|---|---|
| Gardening | 46 | 92 | 0 | 0 | 0 | 0 |
| Employed informally | 1 | 2 | 14 | 33.3 | 0 | 0 |
| Pensioner | 2 | 4 | 17 | 40.5 | 2 | 20 |
| Dependent | 1 | 2 | 7 | 16.6 | 1 | 10 |
| Informal trading | 0 | 0 | 3 | 7.2 | 6 | 60 |
| Other | 0 | 0 | 1 | 2.4 | 1 | 10 |
| **Total** | **50** | **100** | **42** | **100** | **10** | **100** |

Of the 50 respondents interviewed 92% were gardening in order to make a living and 40,5 % were pensioners who supplement their pensions with gardening. A total of 33.3% were employed on informal jobs and also supplement their income with gardening. A total of

17 % were involved in gardening and informal trading by selling of sweets, chips, sheep's head and feet trotters, meat, and fire-wood.

**Table 9: Ranked reasons for gardening**

| Reason | Frequency | Percentage |
|---|---|---|
| Access food | 35 | 70 |
| Pleasure | 5 | 10 |
| Cash | 4 | 8 |
| Complement diet | 4 | 8 |
| Avoid squatters | 2 | 4 |
| **Total** | **50** | **100** |

Amongst the respondents views regarding motivations for gardening varied with 70% being involved in gardening to access food. On the other hand 10% were gardening for enjoyment while 8% were gardening to complement diet, another 8% gardening to generate money and 4% were gardening to secure land from squatters. Table 9 show that household consumption is the major reason for vegetable production (70%). Access to food and therefore food security for the respondents is clearly the major issue.

**Table 10: Main crops grown by gardening household**

| | |
|---|---|
| **Khayelitsha** | Swiss chard (80 % of gardeners), cabbage, onions, tomato, beetroot, carrots, maize, pumpkin, beans, peas, potatoes, lettuce and green peppers. |

Crop preferences of gardening household were rather different. Swiss Chard is the most common crop grown by the respondents, as it is available throughout the year. Maize is another crop, which is prevalent or grown by the respondents especially at Kuyasa site 10 (See Figure 2). This is not surprising since maize is the staple food in African continent (Freeman, 1991: p. 89).

## 5.4 Growing season

Most gardeners garden throughout the year. Others prefer to grow their crops in summer to avoid the cold and rainy weather during winter, while others prefer winter when there is a lot

of rain to keep the crops alive. In winter they plant leafy vegetables such as spinach, cabbages and tomatoes and do not plant root crops because they are eroded by heavy rain. Those who plant in winter are avoiding summer weather because summers are too dry and hot requiring extensive watering of plants.

## 5.5 Method of cultivation

Most gardeners who obtained training from Abalimi Bezekhaya use trenched bed methods. A three-day course of Abalimi Bezekhaya covers the following subjects: garden design, trench bedding, soil preparation, compost making, seed sowing, seed transplanting, watering, vegetable care and maintenance and pest control. The gardeners have basic gardening skills and apply basic farming methods learnt in rural areas elsewhere in the country.

## 5.6 Gardening experience

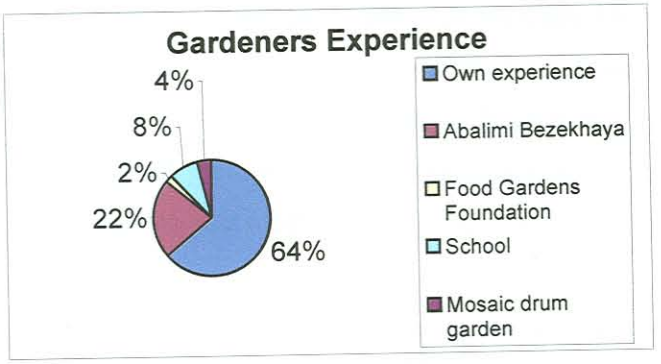


Figure 7.

A total of 64 % of the household surveyed had their own experience since they came from farming environments such as the Transkei and Ciskei. A total of 22% obtained gardening training from Abalimi Bezekhaya. A further 14% relied on three other sources for gardening experience, namely 2% from Food Gardens Foundation, 4% from mosiac drum irrigation and 8% from school. Those possessing their own experience, claim that they inherited gardening experience from their parents, friends and relatives. Others learned gardening in Cape Town suburb of Constantia. As one respondent said: "*I was working in nursery in town and I gained experience.*"

**Table11: Cost of growing vegetables**

| Production Costs | Per Crop |
|---|---|
| Seeds and seedlings | R0.25m$^2$ |
| Manure and Compost | R0.05m$^2$ |
| Water | R0.25m$^2$ |
| **Total** | **R0.55m$^2$** |

Source: Eberhard (1989 a: p.6)

Production costs include the cost of seeds, seedlings, manure, fertilizer and water. An average gardener who purchases seeds, manure, fertilizers and municipal water can be expected to pay about 0.7c for each square metre of garden cultivated per crop. This cost represents about 50% of the value of crops produced.

## 5.7 Economic significance of community food gardens and backyard plots

Sandler (1994: 44) put it that: *" In the Cape Metropolitan Area, an average gardener with 20m$^2$ will produce vegetables with a net value of R135 per year, expending approximately 192 labour hours (less than an hour a day at a labour rate of 65 cents/hour)"*. Each individual gardener is not guaranteed that income received from the selling vegetables will exceed the cost incurred during the production process.

**Table 12: Gardening income as proportion of household subsistence level**

| | Monthly expenditure | Income as a % of expenditure |
|---|---|---|
| Rent | R 48 | 21,7 |
| Vegetables | R 60 | 17, 36 |
| Food | R 280 | 3.7 |
| Total | R 510 | 2 |

Source: Sandler (1994: 45)

Sandler (1994:55) goes on to say that "*Net monthly income from 20 m$^2$ garden is R10, 42*". A significant proportion of households live below the household subsistence level, hence R10,42 can represent a fairly significant proportion of household expenditure.

Cousins, Cousins & Theron (1996: 25) state that a vegetable garden covering 13m$^2$, which is

the usual the size of communal garden plots, can only produce 20% of the requirements of the average household (in rural areas). Eberhard (1989c: 4) goes on to say that two square metres yields 1kg of vegetables per month. Although these studies were made 13 years ago the situation still exists today. It is very difficult to get an accurate picture of the quantities and value of production from urban agriculture because production is seasonal, household members also consume produce and sales are intermittent. Income from sales by vegetable gardeners is determined by factors such as size of plot, gardening skills and duration of operation. Because record keeping of production cost and sales are practically non-existent, income generated from vegetable selling was unobtainable at worst and unreliable at best.

### 5.7.1 Factors affecting the economics of urban agriculture

| | |
|---|---|
| **Value of produce**: | - amount<br>- value of the produce<br>- nature, availability and cost of alternative foodstuff |
| **Cost of inputs:** | - land (rental and opportunity of alternative uses).<br>-gardening equipment, seeds, water, plants, compost, wind breaks, manure, fencing, inorganic fertilizer, opportunity cost of labour. |
| **Project cost:** | - creation of urban agriculture infrastructure<br>- project management and administration tasks<br>- extension work<br>- opportunity cost of land used for urban agriculture or other uses |
| **Probability of success**: | - likelihood of crop failure<br>- gardening tradition<br>- available expertise<br>- theft and vandalism |

Source: Eberhard (1989/E2:)

Growing vegetables for subsistence or as survival strategy is the prime motive for all urban cultivators, and gardening is often undertaken to effect valuable household savings on food. Production figures and the amount used for consumption are very hard to find both in community food projects as well as home gardeners because there is no record keeping and sales are intermittent.

Most of the respondents are unaware of the costs incurred during production process; they are usually only aware of marginal amounts spent on certain inputs such as manure and seeds. There is a lack of extension services to all urban cultivators. Karaan and Mohammed (1996) in their evaluation of Abalimi Bezekhaya state that there is a substantial demand for advice and extension.

Suprisingly, theft and vandalism are minor constraints to community food gardening as well as home gardening, while the major constraints include insufficient supply of water, insecure tenure and snails. From the surveys it is evident that, land and water are the most serious constraint to all community food projects in Khayelitsha.

Most of the food gardeners appear to be old Xhosa-speaking persons with some degree of farming experience from their childhood and some labours in nurseries and on farms in towns and cities.

## 5.8 Typologies of urban agriculture in Khayelitsha

A typology of farming households is useful to assists planners in understanding diversity in agriculture. Urban agriculture in Khayelitsha can be categorized into three types in terms of spatial territory, practices and systems, namely backyard gardens, community garden projects and livestock keeping. The first is practiced at enclosed sites on private premises by the household members. The second is practiced on open-spaces, and the land does not belong to the cultivator, it is situated away from the premises of the cultivator. The third type is widely practiced informally in Khayelitsha. Livestock keeping ranges from goats and cattle kept in back-yards (*Nufarmer,* 1996) and also free ranging chickens.

Community food gardens are located at schools, churches and on idle state land. Backyard gardens are located on residential sites. Generally, officials neglect backyard gardeners or home gardens. Back-yard gardens and community food gardens are quite different and hold different reasons for gardening. Low socio-economic status people participate in backyard and open-space cultivation. Both are on small scale. Backyard or home gardens are for subsistence purposes, to access food and for selling of surpluses to local people. Community food garden projects are for subsistence purposes as well as for income generation, no firm right of tenure and land is less available for them.

General pattern of typology for the surveyed home gardens and community food gardens is based on the following:

- Location
- Motivation for gardening
- Average size
- Land tenure
- Size of the plot
- Production type
- Market penetration

**Table 13: Differences between backyard gardens and community food gardens**

| Main differences | Home Gardens | Community Gardens |
|---|---|---|
| **Scale** | Small scale | Small scale |
| **Group** | Low-income group | Low-income group |
| **Average size** | 2 household members | ± 20 members |
| **Location** | Home/ Residential plot | Distant/ Out of premises |
| **Land** | Small plot<br>100m$^2$ | Community garden unit (per farmer)<br>sizes range from 150m$^2$ (Montagu –Ashton)<br>to 0,3-04ha (Saron and Pella)<br>2 ha (Goedverwacht) |
| **Ownership** | Individual ownership | Land is earmarked for other purposes |
| **Tenure** | Secured | No firm right of tenure / Insecure |
| **Livelihood Outcomes** | Food security | Food security and income generation |
| **Production type** | Plants and animals | Plants and animals |
| **Quantity produced** | Insufficient for marketing | Sufficient for the market |
| **Market penetration** | Low market penetration.<br>Intermittent sales. | Sell local and also market in Observatory and Constantia.<br>Medium market penetration.<br>R100 per member per 100m$^2$ (Abalimi Bezekhaya.). |
| **Percentage income** | Low | High |

There is a wide variance in terms of plot size between and within farming groups. Backyard gardens are very small trench beds covering 100m$^2$. Community garden unit (per farmer) sizes range from 150m$^2$ (Montagu –Ashton) to 0,3-04, ha (Saron and Pella) 2ha (Goedverwacht).

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**Table: 14 Average annual yield, value of produce and labour input for small vegetable gardeners**

| Area ($m^2$) | Yield | Gross Value | Net Value | Time (hrs) |
|---|---|---|---|---|
| 10 | 60 | 108 | 62,5 | 96 |
| 20 | 120 | 216 | 125 | 192 |
| 50 | 300 | 540 | 312,5 | 288 |
| 100 | 600 | 1080 | 625 | 576 |
| 150 | 900 | 1620 | 937,5 | 864 |
| | | | | |

Source: Sandler(1994: 42)

Net income per hectare is high (62 500/ ha ) but as plot size increases from small backyard subsistence plots, empirical data shows a rapid decline in net income per hectare, as input costs and the degree of market penetration rise more than proportionately.

It is difficult to estimate time spent in the garden, as the circumstances vary from plot to plot. People often allocate their spare time (usually after work hours) for those working to their gardens. Pensioners and the unemployed tend to allocate more of their time to gardening as opportunity cost of using their time somewhere else is lower.

A typology showing the characteristics of peri-urban and semi-rural agriculture has been put forward by May & Rogerson (1994) (See Table 15).

**Table 15: Farm models in urban area**

| | Low Market Penetration [1] | Medium Market Penetration [2] | High Market Penetration [3] |
|---|---|---|---|
| **High Population Densities (1000 or more people per square kilometre)** | Home consumption; Kitchen or community gardens (200-300m$^2$); Vegetable crops [4]; Adjacent home; Supplementary food source; Low technology [5]; No overheads; Church/NGO support; Family labour [6]; Invasion of passive land are likely High urban fringe penalties up to 50% of crop [7]; Gross Farm Income = R1.50/m$^2$; [8] Net Farm Income= R1.30/m$^2$; [9] | Sale of surplus crops from home; Home Gardens (400-500m$^2$); Vegetables, Fruit and medicinal plants; Adjacent to home, Supplementary in come and food source; Fertilsers and sprays [10]; Low overheads (1 200 p/a) [11] Church/NGO support; 1-2 hired labourers; Land invasion and passive land are likely High urban fringe penalties up to 50% of crop; Gross Farm Income = R5.25/m$^2$ Net Farm Income= R2.60/m$^2$ net. | Sale of specialist crops to markets and retailers, Home Gardens (400-500m$^2$); Salad vegetables, sub-tropical fruit, herbs, ornamentals [12]; Supplementary income sources, Fertilisers, sprays, irrigation; Medium overheads (R10 000- 15 000) [13] Private sector/ Department support; 3-5 hired labourers; Land rental likely High urban fringe penalties up to 33 % of crop depending on type. Annual income will depend upon crops. |

NOTES

1. Production is for home consumption, with some sales when there is marketing production. No marketing system.
2. Up to three quarters of production is sold through informal channels. Direct marketing to consumers is undertaken by family members.
3. Over three quarters of production is sold through a range of marketing channels. Marketing may use fresh produce models, and contract arrangements may be with chain stores.
4. Three crops per annum are assumed for all food crop models. Staple food crops include beetroot, cabbage, carrot, cauliflower, green beans, sugar beans, green mealie, onion, potato, sweet potato, spinach, pumpkins and squash.
5. A seed/seedling cost of R0.40/m$^2$ is assumed for garden plots, bought from retail outlets. For large plots, economies of scale have been allowed for using Cedara data. (Prices adjusted for inflation).
6. Ebehard estimates that 45 minutes labour per m$^2$ is needed per month for a home garden.
7. Crop losses due to theft of this scale were reported in Tembisa and Groutville. It assumed urban fringe penalties decline as population density declines, and more that more commercial ventures have fenced land with greater crop security
8. Gross farm income equals the value of the yield.
9. For gardens, Net Farm Income is Gross Farm Income less input costs.
10. Ebehard assumes a fertiliser cost R0.08 per m$^2$ per crop, a compost of R0.25 per m$^2$ per crop and a spray cost of R0.80 per m$^2$.(prices adjusted for inflation).
11. One full time labour at R100. per month or 2 part time laboures.
12. Additional non-staple food crops include peas, okra, cucumber, lima and broad beans, chillies, eggplant, lettuce and tomatoes.
13. Three full time labourers at R100 per month. One second hand LDV. Irrigation equipment R2 000, Total cost R 4000. Tools and vehicles are depreciated over 5 years.

May & Rogerson's (1994) typology is applicable to Khayelitsha communities with slight adaptations. Their typology is based on market penetration and that home food gardens are low market invaders, most produce is consumed by the household, gardens are the supplementary source of income, low technology is used and support services are from local NGOs. Low market penetration gardens are on a small scale and marketing of produce is not the sole motivation for gardening but the primary motive is to gain access to food and the secondary motivation is marketing on an informal basis and sales are intermittent.

None of the respondents interviewed are gardening solely for marketing. Community food gardens produce sufficient amount for marketing but they also consume their produce. Produce is mainly sold locally. As already stated, sales occur on the project site with buyers coming to the project.

It is very important to note that community food gardeners and home gardeners are not farmers but gardeners, they produce primarily for subsistence purposes on limited areas and market their surplus to neighbours and those met locally but not necessarily friends, while farmer motivation is to produce mainly for marketing.

Cousins, Cousins & Theron (1996) point out that vegetables produced by community and home gardens are used for home consumption and the surplus is sold directly to acquaintances and neighbours at a prices a little lower than those in local shops.

This study has developed the typology of the farming households in Khayelitsha using farming reasons as a criterion (see Table 16).

**Table 16: Typology of farming households**

| Types | Reason for urban farming / gardening | Percentage respondents |
|---|---|---|
| **Type 1** | Gardening for home consumption | 70 |
| **Type 2** | Gardening for home consumption and marketing | 8 |
| **Type 3** | Gardening to complement diet | 8 |

| | | |
|---|---|---|
| **Type 4** | Gardening for social interaction and enjoyment | 10 |
| **Type 5** | Gardening to secure land from squatting people | 4 |
| **Total** | | **100** |

The above table show that household consumption is the major reason for vegetable production (70 %). Access to food and therefore food security for the respondents is clearly the major issue.

### 5.9 Youth perceptions with regard to urban agriculture

Asked about youth perceptions with regard to urban and peri-urban agriculture 82% said the youth do not like to participate in agricultural activities. One respondent said: *"The youth like jukebox and liquor."* Of those interviewed only 8 % said the youth like agriculture and a total of 6% raised interesting reasons why the youth shun agriculture, for example: "*They are not involved because they do not know, some of them like trees not gardening*" while 4 % said they do not know about the youth perceptions with regard to urban and peri-urban agriculture.

Gardening should not be associated with rural nostalgia, pre-industrialism, navitism, and nationalism. It should be associated with freedom, urbanism, new technology, internationalism and cosmopolitanism. Gardening is concerned about democratic development of the society and environment.

### 5.10 Attitudes of the local community towards gardening

A total of 84% of the respondents believe that the attitude of local community towards gardening is positive. As one respondent commented: "*They like it because it's food and food is at center of our lives both culturally and biologically, they are saying it's beautiful and green and they love it."* Food is the source of enjoyment and of nourishment (Garnett, 1996). Only 6% of the respondents felt that the attitude of local people is negative towards gardening. As one respondent commented: "*They say manure is stinking, agriculture is a rural activity so it should not be practiced in townships".* A respondent from Quaker Peace

Garden said that, "*They think we are hungry to such an extent that we are mad. When we work at garden we become dirty and they look at us as if we are mad and laugh at us*". A respondent from SCAGA answered: "*Community residents said we are gardening because we have HIV/AIDS and we want to eat vegetables so as to cure ourselves*". A total of 10% felt that they either prefered not comment on behalf of the community attitude or they were neutral.

**Table 17: Constraints viewed by respondents with regard to gardening**

| ***Main Problem*** | ***Frequency*** | ***Percentage*** | ***Secondary problems*** | ***Percentage*** |
|---|---|---|---|---|
| Insufficient water | 4 | 8 | 5 | 55.6 |
| Insufficient land | 9 | 18 | 0 | 0 |
| Poor soil quality | 12 | 24 | 3 | 33.3 |
| Laziness | 11 | 22 | 0 | 0 |
| ***Lack of inputs (shopping list)*** | | | | |
| Lack farming knowledge, extension, manure and seedlings | 11 | 22 | 1 | 11.1 |
| Limited time | 3 | 6 | 0 | 0 |

## 5.11 Physical constraints

The main constraints towards agricultural development varied according to a particular section in Khayelitsha. For example, with reference to site 12 (See Figure 2) the main problem mentioned by the respondents was the insufficient supply of water. Amongst the most significant is the insufficient supply of land, shortage of water and poor soil quality. In Site 10 (See Figure 2) the respondents mentioned poor soil quality as the main problem. A total of 88% mentioned snails as a major problem in their garden, while 10% mentioned birds as problem and 2% mentioned cutworm.

From Table 17 it can be concluded that insufficient supply of water is critical 63%; poor soil quality 57.3%; insufficient land 18% and 33% mentioned lack of inputs such as manure,

seedlings, extension services, and farming knowledge.

The respondents said water tariffs are too high and Council needs a lot of money as a result they are in arrears. As one respondent commented: "*We use very little water when watering our gardens as a result our plants wilt*". Water should not be lacking otherwise the plants wilt and should wilting be prolonged death of plants may result. As one respondent reported that, "*The bills are too high for us and we pay as little as R50 because the council possesses our assets*."

Small (2001: p.25) emphasizes that water and land are not considered as a real main constraint for resource poor households as these resources are available in Cape Town. Palmer & Eberhard (1994) also states that Western Cape urban dwellers are reportedly best off in South Africa with regard to access to water supply. That was eight years ago and today community food gardens as well as home gardens are paying for the use of water. During field visits there were meetings between community members and Council members regarding payment of water. Small's statement is contestable because the respondents mentioned shortage of water and land as major constraints towards agricultural development in Khayelitsha. During interviews at Women's Unity community garden and 'Yours and My Garden' the respondents complained about the shortage of water. Abalimi Bezekhaya assisted by setting up a pilot drum-drip irrigation system at the SCAGA and various other community projects. The system is ideal for Cape Flats condition as it reduces loss of water due to wind and evaporation and moreover is simple and relatively inexpensive. There is low water pressure in the drum irrigation system installed by Abalimi Bezekhaya, therefore requiring the improvement of the system.

### 5.12 Economic constraints

Access to credit is a problem for all the respondents. Credit facilities are absent and therefore people are unlikely to be able to invest in expanding small enterprises. None of the respondents has access to credit due to lack of collateral security. These communities have limited access to markets because of racial preferences. Lack of transport and lack of business skills are also problems for home gardeners. There is no garden shop in Khayelitsha.

### 5.13 Socio-cultural constraints

A total of 22% of sampled residents mentioned laziness and lack of commitment as constraints to agricultural development in Khayelitsha. A total of 10% mentioned theft, 6% poor image of agriculture and 6% said gardening consume time. Lack of appropriate gardening skills of the respondents coming from rural environments with good loamy soil to the adverse environmental conditions, such as poor sandy soil in Khayelitsha, was also mentioned.

Mavis from Women's Unity said that "*Apartheid still exists in Cape Town. Our people are oppressed mentally, they are dependent on someone else for their living, they do not want to work in the garden, and sometimes they say we are mad, especially when dirty. They do not want to own something. Agriculture is perceived as hard work by the society and they tend to neglect it.*" Eberhard (1989b) goes on *"People don't want to get involved in anything that requires any form of commitment or cost"*.

### 5.14 Institutional constraints

As mentioned previously, the vast amount of literature on urban agriculture states that insecurity of land tenure is the major drawback in facilitating sustainable urban agriculture for the benefit of the urban poor. Institutional constraints may be referred to as official's negative attitudes towards urban agriculture and policy discriminations. Mascarenhas (1986) identified institutional constraints as city laws preventing the cultivation of crops in urban areas or by-law restrictions, the belief that cultivation of crops in urban areas is a failure of development and price subsidies for imported staples. Box 1 provides a list of physical, institutional, economic and socio-cultural constraints on urban agriculture in Cape Town.

**Box 1:Constraints associated with urban and peri-urban agriculture in line with sustainable livelihood framework**

- Lack of access to land (natural capital)
- Insufficient supply of water (natural capital and physical)
- Poor soil quality (natural capital)
- Lack of accessible market. (transforming process and institutions)
- Wind (natural capital)
- Cash flow problems (financial capital)

- Lack of suitable gardening knowledge (human capital)
- Theft (social capital)
- Opportunity cost and/or alternative livelihood strategies (processes, trends and shocks).
- Conflicts (social capital).

Sources: Eberhard (1989b); Beaumont (1990); Katzchner (1995); Thorgren (1998) Fermont *et al* (1998)

### 5.15 The contribution of urban agriculture- livelihood outcomes

In South Africa, Eberhard (1989a) studied the potential of urban agriculture in Cape Town. However, his research is pessimistic. He declared that home gardening is economically insignificant, less than 1% of the monthly budget of a household living at household subsistence level. (Eckert, Liebenbenberg & Troskie 1997) also state that, unlike many other cities throughout Africa, Asia and Latin America, household-based food production in Cape Town is insignificant.

On the other hand, Meadows (2000: p.114) concludes that the fact that urban farming exists in the townships and that there are NGOs dedicated and committed to providing support services for vegetable gardeners, suggest that there is significant support for the practice. Slater (2001: p.3) contests Eberhard (1989b): "*If urban agriculture has little to offer by way of income generation or substitution then why do so many households in the townships of Cape Town continue to endeavour to produce vegetables*". Small quoted in Sandler (1994: p.28) state that "*Home gardening is highly significant in terms of creating household food security and procures substantial household saving*".

In Khayelitsha the respondents mentioned that gardening helps them to access food as well with expenditure substitution. Informal exchange of vegetables bartered for other products or services increases their ability to survive and to live a more prosperous life. It made an important contribution to the intake of vegetables and reduced their food expenditures. Apart from obtaining fresh vegetables to access food, earning money by selling vegetables improves the livelihood of the poor.

Another contribution of urban agriculture other than financial profit, is a sense of well-being arising from improved environment and productive use of time. Gardening helps people to overcome mental oppression caused by the political system in South Africa in which people of different races were kept apart and wishful expectations of present government that people should take responsibilities of their lives. Contributions of urban agriculture are also listed in Box 2.

**Box 2: Benefits of urban and peri-urban agriculture in relation to sustainable livelihood framework – expected livelihood outcomes**

- More income
- Reduce expenditure spend on food and save money
- Lowers the transaction cost
- Exercise and fitness
- Employment generation (reduced vulnerability)
- Improved nutrition (food security)
- Binds the community (increased well-being)
- Sustainable use of natural resources

### 5.16 Available open spaces in Khayelitsha

The Land Development Unit (1995) cited by Catling & Saaiman, (1996: p.170) states that significant areas of unused land belonged to Ikapa Town Council and the SADF and that there were wide land corridors along the main road, railway lines and beneath Eskom power lines. SCAGA is on servitude land – this in the face of opposition from environmentalist and conservationists concerned about the loss of species diversity (Wood, Low, Donaldson & Rebelo 1994).

As one respondent reported: "*There are lots of open spaces in Khayelitsha but when we want them they say these vacant spaces are earmarked for soldiers (SADF)*". Respondents from Quaker Peace Garden said that "*Jo Slovo School is not yet occupied with vegetable gardens, K1 and K2 are vacant. There is also a vacant land along Highway from Mitchell's Plain, Mdala Boss at Macassar, Kei River and Strand.*"

Respondents from Nondyebo Active Women's Group said there is available land near Good Hope College next to the graveyard. They also mentioned that there is also land near the police station. One respondent said the area next to Bongolethu Supermarket is vacant.

Elsenburg is responsible for the official geographic information systems (GIS) database of existing and potential land suitable for small farmers.

**Table 18: Vacant and under-used state land in Cape Town**

| Site | Ownership | Area | Possible population 100 du's/ha gross | Possible population 50 du's/ha gross |
|---|---|---|---|---|
| Culemborg Yards | Transnet/Portnet | 600 ha | 270 000 | 135 000 |
| District Six | Public/Private | 50 ha | 22 500 | 11 250 |
| Marconi Beam | Telkom | 213 ha | 95 850 | 47 925 |
| Wingfield Military Base | SADF | 350 ha | 157 500 | 78 750 |
| Youngsfield Military Base | SADF | 210 ha | 94 500 | 47 025 |
| Ysterplaat Military Base | SADF | 209 | 94 050 | 47 025 |
| **Total** | | **1 632 ha** | **734 400** | **367 200** |

Source: Behrens & Watson, (1992)

## 5.17 Risk associated with urban agriculture.

More than rural agriculture, urban agriculture entails risk to the health of urban populations if it is not managed and carried out in an appropriate manner (Lock, 2001: p.6).

In 1987 it was estimated that approximately 10 000 people die each year in Third World countries and about 400 000 suffer the effects of pesticides poisoning (World Commission on Environment and Development, 1987: p.40) cited by Obosu-Mensah (1999). In addition, the use of chemicals in food production is also thought to contaminate soils and crops. (De Zeeuw, 2000) states that the use of agro-chemicals may lead to acute poisoning which can cause a range of symptoms which are often not correctly diagnosed such as diarrhoea, dizziness, memory impairment, conlvusions, coma, kidney impairment and lung fibrosis. He

added that agrochemicals are a major cause of suicide worldwide.

The World Health Organisation Commission on Health and Environment (1992) states that the level of risk of crop or ground water pollution due to agrochemicals is higher in intensive commercial farming, especially for vegetables, than in traditional and subsistence farming (De Zeeuw, 2000).

United Nations Development Programme (1996:199) states that production of food from polluted urban environments may cause contamination. Industrial pollutants may affect human beings as well as air, water and soil. Emissions from motor vehicle exhausts may pollute the environment and result in health hazards caused by the deposition of lead onto vegetable leaf surfaces and penetration into the soil and result in ingestion of lead by eating vegetables (Ebehard, 1989: p.3) In Khayelitsha the risk of contamination of crops with pathogenic organisms is high due to re-use of organic solid waste such as manure. Improperly maintained compost heaps result to an increased incidence of rodents, which may be reservoirs and vectors of diseases.

Crops grown close to factories and food purchases from street vendors may be contaminated with air-borne lead and cadmium. The use of rubber tyres may cause Aedes mosquitoes, which cause diseases. Poor disposal of organic solid waste such as animal manure, crop residues, and waste from kitchens may attract flies and rodents that may carry other diseases such as plague and scavenging by domestic animals such as dogs and cats.
Some (8%) of the surveyed respondents mentioned dogs as problem for urban agriculture. As one respondent mentioned: *"Dogs piss on our gardens and we are in risk of diseases and increased mortality"*. A total of 10% mentioned theft as a risk associated with urban agriculture. A total of 82% said there no is risk associated with urban agriculture.

Although the surveys did not focus on livestock keeping, the officials discourage livestock rearing in urban areas because of bad odours from animals (De Necker & Uys, 1995: p.4). Some officials have a fear that livestock in urban areas may spread human diseases. For example, Zoonosis is a disease which can be transmitted to humans from animals during animal husbandry or meat consumption.

Zoning legislations are strict on livestock keeping. These legislations do not allow livestock keeping in urban areas because animals graze on wetlands and are a hazard to the environment. There are stray animals in Khayelitsha and they cause traffic problems and accidents and moreover there are no grazing camps as result animals eat plastics and graze on wetlands.

**Plate 4 Roaming animal in Khayelitsha**

Cousins, Cousins & Theron, (1996: p.24) state that risk management strategies are a major characteristic of the resource-poor farmers that must be taken into account when designing programmes to promote agriculture as a source of livelihoods and are likely to influence their responses to institutional, financial, technical and other support services.